Product	Signal Word	Hazard Class	Product Information
Heat Treat Salt STA-HARD 17	**Danger**	Acute toxicity (fatal or toxic)	This white salt is granular and has no odor. The toxicity of this salt is due to the presence of barium chloride (BaCl2), 50-70%. Toxic if swallowed, harmful if inhaled. Contact causes skin irritation and serious eye irritation. May cause respiratory irritation. If swallowed, seek immediate medical attention. If inhaled, remove to fresh air. If on skin or in eyes, flush with plenty of water. If any symptoms persist, seek medical attention.
Heat Treat Salt SST-95	**Danger**	Corrosive to metals Acute toxicity (harmful)	This white salt is granular, with no odor. Hazardous ingredients include sodium hydroxide and potassium carbonate. Corrosive to metals, this salt is harmful if swallowed, and may cause respiratory irritation. If swallowed, rinse mouth but do not induce vomiting. If in contact with skin or eyes, flush with water. Seek immediate medical attention. If inhaled, remove to fresh air. Unlike STA-HARD 17, this salt will burn if ignited. Avoid contact with oxidizing agents such as nitrates, acids, chlorine, as ignition may result.
Heat Treat Salt SST-110	Warning	Irritant to skin, eyes, respiratory	This white salt is granular, with no odor. Hazardous ingredients are calcium chloride and potassium chloride. If in contact with skin or eyes, flush with plenty of water. If inhaled, remove to fresh air. If symptoms persist, seek medical attention. Like STA-HARD 17, this salt is noncombustible.

Sun Steel ating Inc
Hazardous Materials
Revised 07/31/16

Product	Signal Word	Hazard Class	Product Information
Heat Treat Salt SST-117	Warning	Oxidizer (may intensify fire) Harmful if swallowed; skin, eye, and respiratory irritant Health hazard (Mutagenicity)	This granular pink salt is odorless. Hazardous ingredient is sodium nitrate. Will not burn, but increases intensity of fire. If in contact with skin or eyes, flush with water. If inhaled, remove to fresh air. If swallowed, seek immediate medical attention. If symptoms persist, seek medical attention.
Heat Treat Salt SST-120	**Danger**	Oxidizer (may intensify fire) Acute toxicity if swallowed Very toxic to aquatic life	This granular salt is pink, with no odor. Hazardous ingredients are potassium nitrate and sodium nitrite (NaNO2). Will not burn, but will increase intensity of fire. If swallowed, get immediate medical attention. If on skin or in eyes, flush with water.
Heat Treat Salt SST-140	**Danger**	Acute toxicity (fatal or toxic)	This granular salt is white, and odorless. Hazardous ingredients include barium chloride and potassium chloride. If swallowed, seek immediate medical attention. If in contact with eyes or skin, flush with water. If inhaled, remove to fresh air. Noncombustible.
Heat Treat Salt SST-145	**Danger**	Acute toxicity (fatal or toxic)	This white granular salt is odorless. Hazardous ingredient is barium chloride. Toxic if swallowed - seek immediate medical attention. If on skin or in eyes, flush with water. If inhaled, remove to fresh air. Noncombustible.
Heat Treta Salt SST-170	**Danger**	Acute toxicity (fatal or toxic)	This white granular salt is odorless. Hazardous ingredient is barium chloride. Toxic if swallowed - seek immediate medical attention. If on skin or in eyes, flush with water. If inhaled, remove to fresh air. Noncombustible.

Sun Stee ating Inc
Hazardous Materials
Revised 07/31/16

Product	Signal Word	Hazard Class	Product Information
BA-TREAT Water treatment additive	**Danger**	Corrosive to skin and eyes Acute toxicity (fatal or toxic) Health hazard (reproductive toxicity)	Ba-Treat is an odorless, cloudy liquid. Its hazardous ingredient is ammonium sulfate. Harmful if swallowed and harmful to aquatic life. If swallowed, seek immediate medical attention. If in contact with skin or eyes, flush with water. If inhaled, remove to fresh air.
AAA Quench Oil	**Danger**	Acute toxicity Health hazard (Aspiration toxicity)	This oil is amber colored, with an oil odor. Although combustible, it is considered to be a slight fire hazard. Flash point is 335F. To extinguish,use CO2 or dry chemical. If in contact with skin or eyes, flush with water. If swallowed or enters airways, seek immediate medical attention.
Notes Common to Heat Treat Salts			Those salts that are combustible in a solid state can be extinguished with water. Never apply water to molten salts. Salts are safe to handle if exercising caution. Exposure to skin or eyes is easily remedied by flushing with water. Swallowed salts is a most serious health situation requiring immediate medical attention.
HEAT			Stay hydrated! If you are not thirsty, you will not be adversely affected by heat exposure. Recognize the warning signs of heat stress in yourself and those around you - excessive thirst, mental confusion, nausea or vomiting, chills, not sweating, not urinating, loss of coordination, unconsiousness. When encountered, remove from the heat source first (either outdoors or a cool office or break room) then call for immediate medical attention. The attending medical personnel will decide if the employee can return to work, or go home for the remainder of the day, or hospitalization.

Product	Signal Word	Hazard Class	Product Information
Castable for Salt Baths	**Danger**	Health hazard (carcinogen)	Similar in appearance to mortar cement. Prolonged and repeated exposure may cause cancer. If it comes in contact with skin or eyes, flush with water. If inhaled, remove to fresh air.
Cast Steel Grit	N/A	No known hazards	Brush off dust or particles, or remove with water. If inhaled dust, remove to fresh air.
Glass Beads	N/A	No known hazards	Dust may cause irritation to skin or eyes. Flush with water. If inhaled, remove to fresh air. If ingested, do not induce vomiting and seek medical attention.
Brown Fused Aluminum Oxide Grit	Warning	Health hazard (carcinogen)	Granular, odorless substance. Overexposure may cause cancer. Dust may cause irritation to skin or eyes. Flush with water. If inhaled, remove to fresh air. If ingested, do not induce vomiting and seek medical attention.

Safety Data Sheet

Product Trade Name: **STA-HARD 17** **ID:** STHARD17

* * * Section 1 - Chemical Product and Company Identification * * *

Product Trade Name: **STA-HARD 17**

Manufacturer Information

Heatbath Corporation
P.O. Box 51048
Indian Orchard, MA 01151-5048

Contact Phone: (413) 452-2000
8:00 AM - 5:00 PM

CHEMTREC Emergency Phone: (800) 424-9300
24 Hours

CHEMTREC International: (703) 527-3887

Recommended Use: Heat Treating Salt

Restrictions on Use: See Incompatibility, Section 10

* * * Section 2 - Hazards Identification * * *

OSHA Hazard Communication Standard: Considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Not classified as Dangerous Goods for transport purposes.

Hazard Classification: Acute Toxicity (Inhalation) Category 4 | Acute Toxicity (Oral) Category 3 | Eye Irritation Category 2A | Skin Corrosion/Irritation Category 2 | STOT - SE (Resp. Irr.) Category 3

Labeling:

Signal Word: DANGER!

Hazard Statements: Toxic if swallowed. Causes skin irritation. Causes serious eye irritation. Harmful if inhaled. May cause respiratory irritation.

PREVENTION: Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection/face protection.

FIRST AID/IN CASE OF FIRE: IF SWALLOWED: Immediately call a POISON CENTER/doctor. Specific treatment Rinse mouth. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER/doctor if you feel unwell. If eye irritation persists: Get medical advice/attention. IF ON SKIN: Wash with plenty of water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

STORAGE: Store locked up. Store in a well-ventilated place. Keep container tightly closed.

DISPOSAL: Dispose of contents/container in accordance with all local, regional, national and/or international regulations.

Hazards Not Otherwise Classified: N.A.
Percent of Ingredients of Unknown Toxicity: N.A.

* * * Section 3 - Composition / Information on Ingredients * * *

HAZARDOUS INGREDIENT	CAS #	PERCENT
BARIUM CHLORIDE	10361-37-2	50 - 70% (T.S.)

T.S. = Trade Secret
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Component Related Regulatory Information: This product may be regulated, have exposure limits or other information identified.

* * * Section 4 - First Aid Measures * * *

If this product comes in contact with the eyes: Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Continue flushing until advised to stop by the Poisons Information Center or a doctor, or for at least 15 minutes. If skin contact occurs: Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation. If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. For advice, contact a Poisons Information Center or a doctor. Urgent hospital treatment is likely to be needed.

* * * Section 5 - Fire Fighting Measures * * *

Flash Point: None.
Flammable Limits: None.
Upper Flammable Limit N.A.
Lower Flammable Limit N.A.

Extinguishing Media, PPE and Guidance for FireFighter: There is no restriction on the type of extinguisher which may be used. Use extinguishing media suitable for surrounding area. Alert Fire Department and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses.

Fire and Explosion Hazards: Non combustible. Not considered a significant fire risk, however containers may burn. Decomposition may produce toxic fumes of: hydrogen chloride. Decomposes at high temperatures to produce barium oxide.

Decomposition Products: Oxides of sodium, chlorine

* * * Section 6 - Accidental Release Measures * * *

Containment and Clean up procedures must be conducted in accordance with all local, state, and federal regulations.

Containment and Clean-Up Procedures: Remove all ignition sources. Clean up all spills immediately. Avoid contact with skin and eyes. Moderate hazard. CAUTION: Advise personnel in area. Alert Emergency Services and tell them location and nature of hazard.

* * * Section 7 - Handling and Storage * * *

Handling and Storage Procedures: Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Store in original containers. Keep containers securely sealed. Store in a cool, dry area protected from environmental extremes. Avoid strong acids, acid chlorides, acid anhydrides and chloroformates. Emptied containers of this product may contain hazardous vapors and residue. Clean thoroughly before reusing or discarding. Do not use a welding torch to cut container. Do not use for water or food storage.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Exposure Guidelines:

A. General Product Information: Follow all applicable exposure limits. Keep formation of airborne mists to a minimum.

B. Component Exposure Limits:

CAS #	HAZARDOUS INGREDIENT	OSHA PEL(mg/m3)	ACGIH TLV(mg/m3)
10361-37-2	Barium Chloride	0.5 (as Ba)	0.5 (as Ba)

*OSHA-PEL and ACGIH-TLV are 8-Hour TWA unless otherwise noted.
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Engineering Controls: Set up ventilation to effectively remove and prevent buildup of any dust, vapor or mist generated from the handling of this product.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face Protective Equipment: Wear appropriate eye protection to prevent eye contact.

Skin Protection: Wear appropriate personal protective clothing to prevent skin contact. The worker should immediately wash the skin when it becomes contaminated. Remove wet or significantly contaminated work clothing and replace.

Respiratory Protection: If ventilation is not sufficient to effectively prevent buildup of dust, mists or vapors, provide appropriate NIOSH/MSHA respiratory protection.

Personal Protective Equipment: Provide eyewash fountains in areas where there is any possibility that workers could be exposed to the substance; this is irrespective of the recommendation involving the wearing of eye protection.

Provide facilities for quickly drenching the body within the immediate work area for emergency use where there is a possibility of exposure. Depending on the specific circumstances, a deluge shower, a sink or hose could be considered adequate.

* * * Section 9 - Physical & Chemical Properties * * *

Physical State: Granular
Color: Odorless, white powder
pH: Not Available
Specific Gravity: N.A.
Evaporation Rate: N.A.
Solubility Water: Complete
Vapor Density: N.A.
Vapor Pressure: N.A.
Octanol-Water Coefficient: N.E.

Boiling Point: N.A.
Melting Point: 1175 F (635 C)
Flash Point: Not Available
Auto-Ignition Temperature: N.E.
Decomposition Temperature: N.E.
Flammability Limits - Low: N.A.
Hi: N.A.

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability: Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerization will not occur.

Conditions to Avoid: None

Incompatibility: For molten salt, avoid combustibles.

Decomposition Products: See Section 5

Hazardous Polymerization: Will not occur.

* * * Section 11 - Toxicological Information * * *

Route of Exposure: eye/skin contact, inhalation, ingestion.

Acute Toxicity:

A: General Product Information

Eye Contact: This material can cause eye irritation and damage in some persons.

Skin Contact: This material can cause inflammation of the skin on contact in some persons. The material may accentuate any pre-existing dermatitis condition Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

Skin Absorption: No information available for this product.

Ingestion: Toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage to the health of the individual. Ingestion of soluble barium compounds may result in ulceration of the mucous membranes of the gastrointestinal tract, tightness in the muscles of the face and neck, gastroenteritis, vomiting, diarrhea, muscular tremors and paralysis, anxiety, weakness, labored breathing, cardiac irregularity due to contractions of smooth striated and cardiac muscles (often violent and painful), slow irregular pulse, hypertension, convulsions and respiratory failure.

Inhalation: Inhalation of dusts, generated by the material, during the course of normal handling, may be harmful. The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.

Chronic Hazards: Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Barium compounds may cause high blood pressure, airway irritation and damage the liver, spleen and bone marrow. Prolonged exposure may cause a lung inflammation and scarring.

Medical Conditions Aggravated by Exposure: Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.

Carcinogenicity:

a: Component Carcinogenicity:

None.

NTP:	No.	**IARC:**	No.
OSHA:	No.		

Reproductive/Genetic/Developmental Effects: Prolonged exposure to barium in high concentrations caused kidney effects in rats and mice.

* * * Section 12 - Ecological Information * * *

Ecotoxicity:

A: General Product Information
No information available for this product.

B. Component Analysis - Ecotoxicity - Aquatic Toxicity:
No information available for this product.

Persistence and Mobility: No information available for this product

Environmental: For Chloride: Although inorganic chloride ions are not normally considered toxic they can exist in effluents at acutely toxic levels. Incidental exposure to inorganic chloride may occur in occupational settings where chemicals management policies are improperly applied. The toxicity of chloride salts depends on the counter-ion (cation) present; that of chloride itself is unknown. Chloride toxicity has not been observed in humans except in the special case of impaired sodium chloride metabolism, e.g. in congestive heart failure.

Mobility in Soil: No information available.

* * * Section 13 - Disposal Considerations * * *

Wastes must be tested using methods described in 40 CFR Part 261. It is the generator's responsibility to determine if the waste meets applicable definitions of hazardous wastes. State and local regulations may differ from Federal disposal regulations. Dispose of waste material according to Local, State, Federal and Provincial Environmental Regulations.

* * * Section 14 - Transportation Information * * *

US DOT Information: ALKALI SALTS CRUDE, NOT D.O.T. REGULATED

Marine Pollutant: No

IMDG Classification: None

IATA Classification: None

The data provided in this section is for information only and may not be specific for the package size or mode of transportation. See package label for further details.

* * * Section 15 - Regulatory Information * * *

US Federal Regulations

A: General Product Information
No additional information available.

B: Component Analysis
This material may contain chemicals, requiring identification under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

HAZARDOUS COMPONENT	CERCLA RQ LBS.	SECT 302 TPQ LBS.	SECT 313* TOXIC	Maximum %
Barium Chloride	N.A.	N.A.	Yes	70

Sara 311/312 Hazards:		
	Immediate (Acute)	TRUE
	Chronic*	FALSE
	Fire	FALSE
	Sudden Release-of-Pressure	FALSE
	Reactive	FALSE

Product Trade Name: **STA-HARD 17** **ID:** STHARD17

State Regulations

A: General Product Information

No additional information available.

Other Regulations

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

B: Component Analysis - Inventory

* * * Section 16 - Other Information * * *

Revision Date:
Rev. 1, June 1, 2015

Key/Legend:

ACGIH =	American Conference of Governmental Industrial Hygienists	NFPA =	National Fire Protection Association
CERCLA =	Comprehensive Environmental Response, Compensation and Liability Act	NIOSH =	National Institute for Occupational Safety and Health
EPA =	Environmental Protection Agency	NTP =	National Toxicology Program
HMIS =	Hazardous Material Identification System	OSHA =	Occupational Safety and Health Administration
IARC =	International Agency for Research on Cancer	SARA =	Superfund Amendments and Reauthorization Act
MSHA =	Mine Safety and Health Administration	TSCA =	Toxic Substance Control Act

The information presented herein is believed to be factual as it has been derived from the works and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which Heatbath Corporation bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

This is the end of SDS for STA-HARD 17.

Safety Data Sheet

Product Trade Name: SST-95 **ID:** SST95

* * * Section 1 - Chemical Product and Company Identification * * *

Product Trade Name: **SST-95**

Manufacturer Information

Heatbath Corporation
P.O. Box 51048
Indian Orchard, MA 01151-5048

Contact Phone: (413) 452-2000
8:00 AM - 5:00 PM

CHEMTREC Emergency Phone: (800) 424-9300
24 Hours

CHEMTREC International: (703) 527-3887

Recommended Use: Heat Treating Salt

Restrictions on Use: See Incompatibility, Section 10

* * * Section 2 - Hazards Identification * * *

OSHA Hazard Communication Standard: Considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Classified as Dangerous Goods for transport purposes.

Hazard Classification: Acute Toxicity (Oral) Category 4 | Metal Corrosion Category 1 | Serious Eye Damage Category 1 | Skin Corrosion/Irritation Category 1A | STOT - SE (Resp. Irr.) Category 3

Labeling:

Signal Word: DANGER!

Hazard Statements: May be corrosive to metals. Harmful if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.

PREVENTION: Do not breathe dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Keep only in original packaging. Do not eat, drink or smoke when using this product.

FIRST AID/IN CASE OF FIRE: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER Specific treatment Wash contaminated clothing before reuse. Absorb spillage to prevent material damage. IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. IF INHALED: Remove person to fresh air and keep comfortable for breathing.

STORAGE: Store locked up. Store in a well-ventilated place. Keep container tightly closed.

DISPOSAL: Dispose of contents/container in accordance with all local, regional, national and/or international regulations.

Hazards Not Otherwise Classified: N.A.
Percent of Ingredients of Unknown Toxicity: N.A.

* * * Section 3 - Composition / Information on Ingredients * * *

HAZARDOUS INGREDIENT	CAS #	PERCENT
SODIUM HYDROXIDE	1310-73-2	20 - 40% (T.S.)
SODIUM FLUORIDE	7681-49-4	1 - 10% (T.S.)
POTASSIUM CARBONATE	584-08-7	40 - 60% (T.S.)
POTASSIUM CHLORIDE	7447-40-7	1 - 10% (T.S.)

T.S. = Trade Secret
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Component Related Regulatory Information: This product may be regulated, have exposure limits or other information identified.

* * * Section 4 - First Aid Measures * * *

If this product comes in contact with the eyes: Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Continue flushing until advised to stop by the Poisons Information Center or a doctor, or for at least 15 minutes. If there is evidence of severe skin irritation or skin burns: Avoid further contact. Immediately remove contaminated clothing, including footwear. Flush skin under running water for 15 minutes. If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. For advice, contact a Poisons Information Center or a doctor at once. Urgent hospital treatment is likely to be needed. If swallowed do NOT induce vomiting.

* * * Section 5 - Fire Fighting Measures * * *

Extinguishing Media, PPE and Guidance for Firefighter: Foam. Dry chemical powder. BCF (where regulations permit). Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result. Alert Fire Department and tell them location and nature of hazard. Wear full body protective clothing with breathing apparatus. Prevent, by any means available, spillage from entering drains or water course.

Fire and Explosion Hazards: Combustible. Will burn if ignited. Combustion products include: carbon monoxide (CO), carbon dioxide (CO2), other pyrolysis products typical of burning organic material. May emit corrosive fumes.

Decomposition Products: Oxides of sodium and carbon, hydrofluoric acid, fluorine

* * * Section 6 - Accidental Release Measures * * *

Containment and Clean up procedures must be conducted in accordance with all local, state, and federal regulations.

Containment and Clean-Up Procedures: Remove all ignition sources. Clean up all spills immediately. Avoid contact with skin and eyes. Clear area of personnel and move upwind. Alert Fire Department and tell them location and nature of hazard. Wear full body protective clothing with breathing apparatus.

* * * Section 7 - Handling and Storage * * *

Handling and Storage Procedures: Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Emptied containers of this product may contain hazardous vapors and residue. Clean thoroughly before reusing or discarding. Do not use a welding torch to cut container. Do not use for water or food storage.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Exposure Guidelines:

A. General Product Information: Follow all applicable exposure limits. Keep formation of airborne mists to a minimum.

B. Component Exposure Limits:

CAS #	HAZARDOUS INGREDIENT	OSHA PEL(mg/m3)	ACGIH TLV(mg/m3)
1310-73-2	Sodium Hydroxide	2	2
584-08-7	Potassium Carbonate	N.E.	N.E.
7681-49-4	Sodium Fluoride	2.5 (as F)	2.5 (as F)

*OSHA-PEL and ACGIH-TLV are 8-Hour TWA unless otherwise noted.
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Engineering Controls: Set up ventilation to effectively remove and prevent buildup of any dust, vapor or mist generated from the handling of this product.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face Protective Equipment: Wear appropriate eye protection to prevent eye contact.

Skin Protection: Wear appropriate personal protective clothing to prevent skin contact. The worker should immediately wash the skin when it becomes contaminated. Remove wet or significantly contaminated work clothing and replace.

Respiratory Protection: If ventilation is not sufficient to effectively prevent buildup of dust, mists or vapors, provide appropriate NIOSH/MSHA respiratory protection.

Personal Protective Equipment: Provide eyewash fountains in areas where there is any possibility that workers could be exposed to the substance; this is irrespective of the recommendation involving the wearing of eye protection.

Provide facilities for quickly drenching the body within the immediate work area for emergency use where there is a possibility of exposure. Depending on the specific circumstances, a deluge shower, a sink or hose could be considered adequate.

* * * Section 9 - Physical & Chemical Properties * * *

Physical State: Granular
Color: Odorless, white powder
pH: Not Available
Specific Gravity: N.A.
Evaporation Rate: N.A.
Solubility Water: Complete
Vapor Density: N.A.
Vapor Pressure: N.A.
Octanol-Water Coefficient: N.E.

Boiling Point: N.A.
Melting Point: Not Available
Flash Point: Not Available
Auto-Ignition Temperature: N.E.
Decomposition Temperature: N.E.
Flammability Limits - Low: N.A.
Hi: N.A.

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability: Unstable in the presence of incompatible materials. Product is considered stable.

Conditions to Avoid: None

Incompatibility: Strong acids and oxidizers. Heat is generated when mixed with water, spattering and boiling can occur. Flammable hydrogen gas may be generated from prolonged contact with metals such as zinc. Can react violently with bromine trifluoride and potassium permanganate

Decomposition Products: See section 5.

Hazardous Polymerization: Will not occur.

* * * Section 11 - Toxicological Information * * *

Route of Exposure: Eye/skin contact, inhalation, ingestion.

Acute Toxicity:

A: General Product Information

Eye Contact: If applied to the eyes, this material causes severe eye damage. Direct eye contact with corrosive bases can cause pain and burns. There may be swelling, epithelium destruction, clouding of the cornea and inflammation of the iris. Mild cases often resolve; severe cases can be prolonged with complications such as persistent swelling, scarring, permanent cloudiness, bulging of the eye, cataracts, eyelids glued to the eyeball and blindness.

Skin Contact: The material can produce severe chemical burns following direct contact with the skin. Skin contact is not thought to produce harmful health effects (as classified under EC Directives using animal models). Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions. Sodium hydroxide causes burns which may take time to manifest and cause pain, thus care should be taken to avoid contamination of gloves and boots.

Skin Absorption: No information available for this product.

Ingestion: Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. Ingestion of alkaline corrosives may produce burns around the mouth, ulcerations and swellings of the mucous membranes, profuse saliva production, with an inability to speak or swallow. Both the esophagus and stomach may experience burning pain; vomiting and diarrhea may follow. Ingestion of sodium hydroxide may result in severe pain, burns to the mouth, throat, stomach, nausea and vomiting, swelling of the throat and subsequent perforation of the gastro-intestinal tract and suffocation but a 1% solution (pH 13.4) of sodium hydroxide in water failed to cause any damage of the stomach or gullet in rabbits.

Inhalation: The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhaling corrosive bases may irritate the respiratory tract. Symptoms include cough, choking, pain and damage to the mucous membrane.

Chronic Hazards: Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

Medical Conditions Aggravated by Exposure: Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.

Carcinogenicity:

Product Trade Name: **SST-95** **ID:** SST95

a: Component Carcinogenicity:
None.

NTP: No. **IARC:** No.
OSHA: No.

Reproductive/Genetic/Developmental Effects: No information available.

* * * Section 12 - Ecological Information * * *

Ecotoxicity:

A: General Product Information
No information available for this product.

B. Component Analysis - Ecotoxicity - Aquatic Toxicity:
No information available for this product.

Persistence and Mobility: No information available for this product

Environmental: For Fluorides: Small amounts of fluoride have beneficial effects however; excessive intake over long periods may cause dental and/or skeletal fluorosis. Fluorides are absorbed by humans following inhalation of workplace and ambient air that has been contaminated, ingestion of drinking water and foods and dermal contact. Populations living in areas with high fluoride levels in groundwater may be exposed to higher levels of fluorides in their drinking water or in beverages prepared with the water. Among these populations, outdoor laborers, people living in hot climates, and people with excessive thirst will generally have the greatest daily intake of fluorides because they consume greater amounts of water.

Mobility in Soil: No information available.

* * * Section 13 - Disposal Considerations * * *

Wastes must be tested using methods described in 40 CFR Part 261. It is the generator's responsibility to determine if the waste eets applicable definitions of hazardous wastes. State and local regulations may differ from Federal disposal regulations.
Dispose of waste material according to Local, State, Federal and Provincial Environmental Regulations.

* * * Section 14 - Transportation Information * * *

US DOT Information: UN1823, SODIUM HYDROXIDE, SOLID, MIXTURE, 8, PG II

Marine Pollutant: No

IMDG Classification: UN1823, SODIUM HYDROXIDE, SOLID, MIXTURE, 8, PG II

IATA Classification: UN1823, SODIUM HYDROXIDE, SOLID, MIXTURE, 8, PG II

The data provided in this section is for information only and may not be specific for the package size or mode of transportation. See package label for further details.

* * * Section 15 - Regulatory Information * * *

US Federal Regulations

A: General Product Information
No additional information available.

B: Component Analysis
This material may contain chemicals, requiring identification under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

HAZARDOUS COMPONENT	CERCLA RQ LBS.	SECT 302 TPQ LBS.	SECT 313* TOXIC	Maximum %
Sodium Hydroxide	1000	N.A.	No	40
Sodium Fluoride	1000	N.A.	No	<10

Sara 311/312 Hazards:

Immediate (Acute)	TRUE
Chronic*	TRUE
Fire	FALSE
Sudden Release-of-Pressure	FALSE
Reactive	FALSE

State Regulations

A: General Product Information

No additional information available.

Other Regulations

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

B: Component Analysis - Inventory

* * * Section 16 - Other Information * * *

Revision Date:

Rev. 1, June 1, 2015

Key/Legend:

ACGIH =	American Conference of Governmental Industrial Hygienists	NFPA =	National Fire Protection Association
CERCLA =	Comprehensive Environmental Response, Compensation and Liability Act	NIOSH =	National Institute for Occupational Safety and Health
EPA =	Environmental Protection Agency	NTP =	National Toxicology Program
HMIS =	Hazardous Material Identification System	OSHA =	Occupational Safety and Health Administration
IARC =	International Agency for Research on Cancer	SARA =	Superfund Amendments and Reauthorization Act
MSHA =	Mine Safety and Health Administration	TSCA =	Toxic Substance Control Act

The information presented herein is believed to be factual as it has been derived from the works and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which Heatbath Corporation bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

This is the end of SDS for SST-95.

Safety Data Sheet

Product Trade Name: **SST-110** **ID:** SST110

* * * Section 1 - Chemical Product and Company Identification * * *

Product Trade Name: **SST-110**

Manufacturer Information

Heatbath Corporation
P.O. Box 51048
Indian Orchard, MA 01151-5048

Contact Phone: (413) 452-2000
8:00 AM - 5:00 PM

CHEMTREC Emergency Phone: (800) 424-9300
24 Hours

CHEMTREC International: (703) 527-3887

Recommended Use: Heat Treating Salt

Restrictions on Use: See Incompatibility, Section 10

* * * Section 2 - Hazards Identification * * *

OSHA Hazard Communication Standard: Considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Not classified as Dangerous Goods for transport purposes.

Hazard Classification: Eye Irritation Category 2A | Skin Corrosion/Irritation Category 2 | STOT - SE (Resp. Irr.) Category 3

Labeling:

Signal Word: WARNING!

Hazard Statements: Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

PREVENTION: Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection/face protection.

FIRST AID/IN CASE OF FIRE: Specific treatment IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER/doctor if you feel unwell. If eye irritation persists: Get medical advice/attention. IF ON SKIN: Wash with plenty of water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

STORAGE: Store locked up. Store in a well-ventilated place. Keep container tightly closed.

DISPOSAL: Dispose of contents/container in accordance with all local, regional, national and/or international regulations.

Hazards Not Otherwise Classified: N.A.
Percent of Ingredients of Unknown Toxicity: N.A.

* * * Section 3 - Composition / Information on Ingredients * * *

HAZARDOUS INGREDIENT	CAS #	PERCENT
POTASSIUM CHLORIDE	7447-40-7	30 - 50% (T.S.)
CALCIUM CHLORIDE	10043-52-4	20 - 40% (T.S.)

T.S. = Trade Secret
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Component Related Regulatory Information: This product may be regulated, have exposure limits or other information identified.

* * * Section 4 - First Aid Measures * * *

If this product comes in contact with the eyes: Wash out immediately with fresh running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Seek medical attention without delay; if pain persists or recurs seek medical attention. If skin contact occurs: Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation. If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Observe the patient carefully.

* * * Section 5 - Fire Fighting Measures * * *

Extinguishing Media, PPE and Guidance for Firefighter: Do NOT use water on a molten salt bath - potential explosion hazard. Carbon dioxide or dry chemical may be used for material around the immediate vicinity of the salt bath. Water may be used on granular/powder material. Alert Fire Department and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses.

Fire and Explosion Hazards: Noncombustible. Not considered a significant fire risk, however containers may burn. Decomposition may produce toxic fumes of: hydrogen chloride. May emit poisonous fumes.

Decomposition Products: Oxides of sodium, chlorine

* * * Section 6 - Accidental Release Measures * * *

Containment and Clean up procedures must be conducted in accordance with all local, state, and federal regulations.

Containment and Clean-Up Procedures: Remove all ignition sources. Clean up all spills immediately. Avoid contact with skin and eyes. Moderate hazard. CAUTION: Advise personnel in area. Alert Emergency Services and tell them location and nature of hazard.

* * * Section 7 - Handling and Storage * * *

landling and Storage Procedures: Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Store in original containers. Keep containers securely sealed. Store in a cool, dry area protected from environmental extremes. Calcium chloride (and its hydrates): are incompatible with boric acid, calcium oxide, bromine trifluoride, 2-furan, percarboxylic acid may produce explosive hydrogen gas on contact with zinc catalyze exothermic polymerization of methyl vinyl ether produce heat on contact with water attack metals. Addition of a quantity of calcium chloride to boiling water has generated heat sufficient to cause a violent steam explosion on several occasions In presence of moisture, the material is corrosive to aluminum, zinc and tin producing highly flammable hydrogen gas. Emptied containers of this product may contain hazardous vapors and residue. Clean thoroughly before reusing or discarding. Do not use a welding torch to cut container. Do not use for water or food storage.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Exposure Guidelines:

A. General Product Information: Follow all applicable exposure limits. Keep formation of airborne mists to a minimum.

B. Component Exposure Limits:

CAS #	HAZARDOUS INGREDIENT	OSHA PEL(mg/m3)	ACGIH TLV(mg/m3)
10043-52-4	Calcium Chloride	N.E.	N.E.

*OSHA-PEL and ACGIH-TLV are 8-Hour TWA unless otherwise noted.
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Engineering Controls: Set up ventilation to effectively remove and prevent buildup of any dust, vapor or mist generated from the handling of this product.

ERSONAL PROTECTIVE EQUIPMENT

Eyes/Face Protective Equipment: Wear appropriate eye protection to prevent eye contact.

Skin Protection: Wear appropriate personal protective clothing to prevent skin contact. The worker should immediately wash the skin when it becomes contaminated. Remove wet or significantly contaminated work clothing and replace.

Respiratory Protection: If ventilation is not sufficient to effectively prevent buildup of dust, mists or vapors, provide appropriate NIOSH/MSHA respiratory protection.

Personal Protective Equipment: Provide eyewash fountains in areas where there is any possibility that workers could be exposed to the substance; this is irrespective of the recommendation involving the wearing of eye protection.

Provide facilities for quickly drenching the body within the immediate work area for emergency use where there is a possibility of exposure. Depending on the specific circumstances, a deluge shower, a sink or hose could be considered adequate.

* * * Section 9 - Physical & Chemical Properties * * *

Safety Data Sheet

Product Trade Name: **SST-110** **ID:** SST110

Physical State: Granular
Color: Odorless, white powder
pH: Not Available
Specific Gravity: N.A.
Evaporation Rate: N.A.
Solubility Water: Complete
Vapor Density: N.A.
Vapor Pressure: N.A.
Octanol-Water Coefficient: N.E.

Boiling Point: N.A.
Melting Point: Not Available
Flash Point: Not Available
Auto-Ignition Temperature: N.E.
Decomposition Temperature: N.E.
Flammability Limits - Low: N.A.
Hi: N.A.

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability: Unstable in the presence of incompatible materials. Product is considered stable.

Conditions to Avoid: None

Incompatibility: Strong acids and oxidizers. Heat is generated when mixed with water, spattering and boiling can occur. Flammable hydrogen gas may be generated from prolonged contact with metals such as zinc. Can react violently with bromine trifluoride and potassium permanganate

Decomposition Products: See Section 5

Hazardous Polymerization: Will not occur.

* * * Section 11 - Toxicological Information * * *

Route of Exposure: Eye/skin contact, inhalation, ingestion.

Acute Toxicity:

Product Trade Name: **SST-110** **ID:** SST110

A: General Product Information

Eye Contact: Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals. Prolonged eye contact may cause inflammation characterized by a temporary redness of the conjunctiva (similar to windburn).

Skin Contact: This material can cause inflammation of the skin on contact in some persons. The material may accentuate any pre-existing dermatitis condition Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. Irritation and skin reactions are possible with sensitive skin. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

Skin Absorption: No information available for this product.

Ingestion: Accidental ingestion of the material may be damaging to the health of the individual. Compared with other metals, the calcium ion and most calcium compounds have low toxicity. Acute calcium poisoning is rare, and difficult to achieve unless calcium compounds are administered intravenously or taken in high doses over a prolonged period. Excessive consumption of calcium carbonate antacids/dietary supplements over a period of weeks or months can cause milk-alkali syndrome, with symptoms ranging from hypercalcemia to potentially fatal renal failure.

Inhalation: The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled. If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.

Chronic Hazards: Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. High blood concentrations of calcium ion may give rise to vasodilation and depress cardiac function leading to hypotension and syncope. Calcium ions enhance the effects of digitalis on the heart and may precipitate digitalis intoxication.

Medical Conditions Aggravated by Exposure: Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.

Carcinogenicity:

a: Component Carcinogenicity:

None.

NTP:	No.	**IARC:**	No.
OSHA:	No.		

Reproductive/Genetic/Developmental Effects: No information available.

* * * Section 12 - Ecological Information * * *

Ecotoxicity:

A: General Product Information

No information available for this product.

B. Component Analysis - Ecotoxicity - Aquatic Toxicity:

No information available for this product.

Persistence and Mobility: No information available for this product

Environmental: for calcium chloride: Environmental fate: Calcium chlorides vapor pressure is negligible and its water solubility is 745 g/L at 20 deg C. Calcium chloride is readily dissociated into calcium and chloride ions in water. These physico-chemical properties indicate that calcium chloride released into the environment is distributed into the water compartment in the form of calcium and chloride ions. Ecotoxicity: Fish LC50 (96 h): Pimephales promelas 4630 mg/l Algae EC50 (72 h): Selenastrum capricornutum 2900 mg/l Daphnia magna EC50 (48 h): 1062 mg/l. The chronic toxicity study with Daphnia magna shows that a 16% impairment of reproduction (EC16) is caused at the concentration of 320 mg/L. The 72-hour EC20 for Selenastrum capricornutum determined by the OECD TG 201 study is 1000 mg/L.

Mobility in Soil: No information available.

* * * Section 13 - Disposal Considerations * * *

Wastes must be tested using methods described in 40 CFR Part 261. It is the generator's responsibility to determine if the waste meets applicable definitions of hazardous wastes. State and local regulations may differ from Federal disposal regulations. Dispose of waste material according to Local, State, Federal and Provincial Environmental Regulations.

* * * Section 14 - Transportation Information * * *

US DOT Information: ALKALI SALTS CRUDE, NOT D.O.T. REGULATED

Marine Pollutant: No

IMDG Classification: NOT REGULATED

IATA Classification: NOT REGULATED

The data provided in this section is for information only and may not be specific for the package size or mode of transportation. See package label for further details.

* * * Section 15 - Regulatory Information * * *

US Federal Regulations

A: General Product Information

No additional information available.

B: Component Analysis

This material may contain chemicals, requiring identification under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

HAZARDOUS COMPONENT	CERCLA RQ LBS.	SECT 302 TPQ LBS.	SECT 313* TOXIC	Maximum %
No CERCLA or SARA 313 components				

Sara 311/312 Hazards:		
	Immediate (Acute)	TRUE
	Chronic*	FALSE
	Fire	FALSE
	Sudden Release-of-Pressure	FALSE
	Reactive	FALSE

State Regulations

A: General Product Information

No additional information available.

ther Regulations

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

B: Component Analysis - Inventory

* * * Section 16 - Other Information * * *

Revision Date:
Rev. 1, June 1, 2015

Key/Legend:

ACGIH =	American Conference of Governmental Industrial Hygienists	NFPA =	National Fire Protection Association
CERCLA =	Comprehensive Environmental Response, Compensation and Liability Act	NIOSH =	National Institute for Occupational Safety and Health
EPA =	Environmental Protection Agency	NTP =	National Toxicology Program
HMIS =	Hazardous Material Identification System	OSHA =	Occupational Safety and Health Administration
IARC =	International Agency for Research on Cancer	SARA =	Superfund Amendments and Reauthorization Act
MSHA =	Mine Safety and Health Administration	TSCA =	Toxic Substance Control Act

The information presented herein is believed to be factual as it has been derived from the works and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which Heatbath Corporation bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

This is the end of SDS for SST-110.

Safety Data Sheet

Product Trade Name: SST-117 **ID:** SST117

* * * Section 1 - Chemical Product and Company Identification * * *

Product Trade Name: SST-117

Manufacturer Information

Heatbath Corporation
P.O. Box 51048
Indian Orchard, MA 01151-5048

Contact Phone: (413) 452-2000
8:00 AM - 5:00 PM

CHEMTREC Emergency Phone: (800) 424-9300
24 Hours

CHEMTREC International: (703) 527-3887

Recommended Use: Heat Treating Salt

Restrictions on Use: See Incompatibility, Section 10

* * * Section 2 - Hazards Identification * * *

OSHA Hazard Communication Standard: Considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Classified as Dangerous Goods for transport purposes.

Hazard Classification: Acute Aquatic Hazard Category 3 | Acute Toxicity (Oral) Category 4 | Eye Irritation Category 2A | Germ Cell Mutagen Category 2 | Oxidizing Solid Category 3 | Skin Corrosion/Irritation Category 2 | STOT - SE (Resp. Irr.) Category 3

Labeling:

Signal Word: WARNING!

Hazard Statements: May intensify fire: oxidizer. Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. Suspected of causing genetic defects. Harmful to aquatic life.

PREVENTION: Obtain special instructions before use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take any precaution to avoid mixing with combustibles/organic material. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Avoid release to the environment.

FIRST AID/IN CASE OF FIRE: IF exposed or concerned: Get medical advice/ attention. Specific treatment In case of fire: Use water jets for extinction. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. IF ON SKIN: Wash with plenty of water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Rinse mouth. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

STORAGE: Store locked up. Store in a well-ventilated place. Keep container tightly closed.

DISPOSAL: Dispose of contents/container in accordance with all local, regional, national and/or international regulations.

Hazards Not Otherwise Classified: N.A.
Percent of Ingredients of Unknown Toxicity: N.A.

* * * Section 3 - Composition / Information on Ingredients * * *

HAZARDOUS INGREDIENT	CAS #	PERCENT
SODIUM NITRATE	7631-99-4	75 - 95% (T.S.)
POTASSIUM NITRATE	7757-79-1	1 - 10% (T.S.)

T.S. = Trade Secret
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Component Related Regulatory Information: This product may be regulated, have exposure limits or other information identified.

* * * Section 4 - First Aid Measures * * *

If this product comes in contact with the eyes: Wash out immediately with fresh running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Seek medical attention without delay; if pain persists or recurs seek medical attention. If skin contact occurs: Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation. If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. For advice, contact a Poisons Information Center or a doctor. Urgent hospital treatment is likely to be needed.

* * * Section 5 - Fire Fighting Measures * * *

Extinguishing Media, PPE and Guidance for Firefighter: Avoid storage with reducing agents. Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous Alert Fire Department and tell them location and nature of hazard. May be violently or explosively reactive. Wear full body protective clothing with breathing apparatus. Do NOT use water on a molten salt bath - potential explosion hazard. Carbon dioxide or dry chemical may be used for material around the immediate vicinity of the salt bath. Water may be used on granular/powder material.

Fire and Explosion Hazards: Will not burn but increases intensity of fire. Heating may cause expansion or decomposition leading to violent rupture of containers. Heat affected containers remain hazardous. Hazardous fumes may be released under thermal decomposition.

Decomposition Products: Oxides of nitrogen under thermal decomposition

* * * Section 6 - Accidental Release Measures * * *

Containment and Clean up procedures must be conducted in accordance with all local, state, and federal regulations.

Containment and Clean-Up Procedures: Clean up all spills immediately. No smoking, naked lights, ignition sources. Avoid all contact with any organic matter including fuel, solvents, sawdust, paper or cloth and other incompatible materials, as ignition may result. Clear area of personnel and move upwind. Alert Fire Department and tell them location and nature of hazard. May be violently or explosively reactive.

* * * Section 7 - Handling and Storage * * *

Handling and Storage Procedures: Avoid personal contact and inhalation of dust, mist or vapors. Provide adequate ventilation. Always wear protective equipment and wash off any spillage from clothing. Store in original containers. Keep containers securely sealed as supplied. Store in a cool, well-ventilated area. Inorganic peroxy compounds are potent oxidizers that pose fire or explosive hazards when in contact with ordinary combustible materials. Inorganic peroxides react with organic compounds to generate organic peroxide and hydroperoxide products that react violently with reducing agents. Inorganic oxidizing agents can react with reducing agents to generate heat and products that may be gaseous (causing pressurization of closed containers). Emptied containers of this product may contain hazardous vapors and residue. Clean thoroughly before reusing or discarding. Do not use a welding torch to cut container. Do not use for water or food storage.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Exposure Guidelines:

A. General Product Information: Follow all applicable exposure limits. Keep formation of airborne mists to a minimum.

B. Component Exposure Limits:

CAS #	HAZARDOUS INGREDIENT	OSHA PEL(mg/m3)	ACGIH TLV(mg/m3)
7757-79-1	Potassium Nitrate	N.E.	N.E.
7631-99-4	Sodium Nitrate	N.E.	N.E.

*OSHA-PEL and ACGIH-TLV are 8-Hour TWA unless otherwise noted.
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Engineering Controls: Set up ventilation to effectively remove and prevent buildup of any dust, vapor or mist generated from the handling of this product.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face Protective Equipment: Wear appropriate eye protection to prevent eye contact.

Skin Protection: Wear appropriate personal protective clothing to prevent skin contact. The worker should immediately wash the skin when it becomes contaminated. Remove wet or significantly contaminated work clothing and replace.

Respiratory Protection: If ventilation is not sufficient to effectively prevent buildup of dust, mists or vapors, provide appropriate NIOSH/MSHA respiratory protection.

Personal Protective Equipment: Provide eyewash fountains in areas where there is any possibility that workers could be exposed to the substance; this is irrespective of the recommendation involving the wearing of eye protection.

Provide facilities for quickly drenching the body within the immediate work area for emergency use where there is a possibility of exposure. Depending on the specific circumstances, a deluge shower, a sink or hose could be considered adequate.

* * * Section 9 - Physical & Chemical Properties * * *

Product Trade Name: **SST-117** **ID:** SST117

Physical State: Granular
Color: Odorless, pink granular powder
pH: Not Available
Specific Gravity: N.A.
Evaporation Rate: N.A.
Solubility Water: Complete
Vapor Density: N.A.
Vapor Pressure: N.A.
Octanol-Water Coefficient: N.E.

Boiling Point: Decomposes
Melting Point: Not Available
Flash Point: Not Available
Auto-Ignition Temperature: N.E.
Decomposition Temperature: N.E.
Flammability Limits - Low: N.A.
Hi: N.A.

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability: Unstable in the presence of incompatible materials. Product is considered stable under normal handling conditions. Prolonged exposure to heat.

Conditions to Avoid: temperatures >1100 F .

Incompatibility: Acids, ammonium or magnesium compounds, combustibles, organics and reducing agents - particularly cyanides, cyanates and sulfates. combustibles.

Decomposition Products: See Section 5

Hazardous Polymerization: Will not occur.

* * * Section 11 - Toxicological Information * * *

Route of Exposure: Eye/skin contact, inhalation, ingestion.

Acute Toxicity:

A: General Product Information

Eye Contact: This material can cause eye irritation and damage in some persons.

Skin Contact: This material can cause inflammation of the skin on contact in some persons. The material may accentuate any pre-existing dermatitis condition. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

Skin Absorption: No information available for this product.

Ingestion: Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. The principal concern with exposure to inorganic nitrate is its biological reduction to reactive and toxic nitrite. Nitrate itself is relatively harmless. Where bacteria are present and the environment is anaerobic, nitrate can be reduced to nitrite.

Inhalation: The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled. If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.

Chronic Hazards: Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Laboratory (in vitro) and animal studies show, exposure to the material may result in a possible risk of irreversible effects, with the possibility of producing mutation. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

Medical Conditions Aggravated by Exposure: Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.

Carcinogenicity:

a: Component Carcinogenicity:

None.

NTP:	No.	**IARC:**	No.
OSHA:	No.		

Reproductive/Genetic/Developmental Effects: Some animal studies have shown mutagenic and reproductive effects with chronic exposure at very high concentrations.

* * * Section 12 - Ecological Information * * *

Ecotoxicity:

A: General Product Information

No information available for this product.

B. Component Analysis - Ecotoxicity - Aquatic Toxicity:

No information available for this product.

Persistence and Mobility: No information available for this product

Environmental: Harmful to aquatic organisms. For Nitrate/Nitrite Environmental Fate: Nitrates form from nitrate or ammonium ions by micro-organisms in soil, water, sewage and the digestive tract. The concern with nitrate in the environment is related to its conversion to nitrite. Primary sources of organic nitrates include human sewage and livestock manure, especially from feedlots.

Mobility in Soil: No information available.

* * * Section 13 - Disposal Considerations * * *

Wastes must be tested using methods described in 40 CFR Part 261. It is the generator's responsibility to determine if the waste meets applicable definitions of hazardous wastes. State and local regulations may differ from Federal disposal regulations. Dispose of waste material according to Local, State, Federal and Provincial Environmental Regulations.

* * * Section 14 - Transportation Information * * *

US DOT Information: UN1499, SODIUM NITRATE AND POTASSIUM NITRATE MIXTURES, 5.1, PG III

Marine Pollutant: No

IMDG Classification: UN1499, SODIUM NITRATE AND POTASSIUM NITRATE MIXTURE, 5.1, PG III

IATA Classification: UN1499, SODIUM NITRATE AND POTASSIUM NITRATE MIXTURE, 5.1, PG III

The data provided in this section is for information only and may not be specific for the package size or mode of transportation. See package label for further details.

* * * Section 15 - Regulatory Information * * *

US Federal Regulations

A: General Product Information
No additional information available.

B: Component Analysis
This material may contain chemicals, requiring identification under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

HAZARDOUS COMPONENT	CERCLA RQ LBS.	SECT 302 TPQ LBS.	SECT 313* TOXIC	Maximum %
Nitrates, Water Dissociable	N.A.	N.A	Solution (Reported as Nitrate Ion [NO3-])	90

Sara 311/312 Hazards:		
	Immediate (Acute)	TRUE
	Chronic*	FALSE
	Fire	TRUE
	Sudden Release-of-Pressure	FALSE
	Reactive	FALSE

State Regulations

A: General Product Information
No additional information available.

Other Regulations

A: General Product Information
All components are on the U.S. EPA TSCA Inventory List.

B: Component Analysis - Inventory

* * * Section 16 - Other Information * * *

Revision Date:
Rev. 1, June 1, 2015

Safety Data Sheet

Product Trade Name: **SST-117** **ID:** SST117

Key/Legend:

ACGIH =	American Conference of Governmental Industrial Hygienists	NFPA =	National Fire Protection Association
CERCLA =	Comprehensive Environmental Response, Compensation and Liability Act	NIOSH =	National Institute for Occupational Safety and Health
EPA =	Environmental Protection Agency	NTP =	National Toxicology Program
HMIS =	Hazardous Material Identification System	OSHA =	Occupational Safety and Health Administration
IARC =	International Agency for Research on Cancer	SARA =	Superfund Amendments and Reauthorization Act
MSHA =	Mine Safety and Health Administration	TSCA =	Toxic Substance Control Act

The information presented herein is believed to be factual as it has been derived from the works and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which Heatbath Corporation bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

This is the end of SDS for SST-117.

Safety Data Sheet

Product Trade Name: SST-120 **ID:** SST120

* * * Section 1 - Chemical Product and Company Identification * * *

Product Trade Name: **SST-120**

Manufacturer Information

Heatbath Corporation
P.O. Box 51048
Indian Orchard, MA 01151-5048

Contact Phone: (413) 452-2000
8:00 AM - 5:00 PM

CHEMTREC Emergency Phone: (800) 424-9300
24 Hours

CHEMTREC International: (703) 527-3887

Recommended Use: Heat Treating Salt

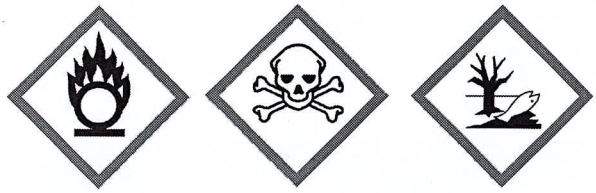
Restrictions on Use: See Incompatibility, Section 10

* * * Section 2 - Hazards Identification * * *

OSHA Hazard Communication Standard: Considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Classified as Dangerous Goods for transport purposes.

Hazard Classification: Acute Aquatic Hazard Category 1 | Acute Toxicity (Oral) Category 3 | Eye Irritation Category 2A | Oxidizing Solid Category 3

Labeling:



Signal Word: DANGER!

Hazard Statements: May intensify fire: oxidizer. Toxic if swallowed. Causes serious eye irritation. Very toxic to aquatic life.

PREVENTION: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take any precaution to avoid mixing with combustibles/organic material. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

FIRST AID/IN CASE OF FIRE: IF SWALLOWED: Immediately call a POISON CENTER/doctor. Specific treatment: Rinse mouth. In case of fire: Use water jets for extinction. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Collect spillage.

STORAGE: Store locked up.

DISPOSAL: Dispose of contents/container in accordance with all local, regional, national and/or international regulations.

Hazards Not Otherwise Classified: N.A.
Percent of Ingredients of Unknown Toxicity: N.A.

* * * Section 3 - Composition / Information on Ingredients * * *

HAZARDOUS INGREDIENT	CAS #	PERCENT
POTASSIUM NITRATE	7757-79-1	40 - 60% (T.S.)
SODIUM NITRITE	7632-00-0	30 - 50% (T.S.)

T.S. = Trade Secret
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Component Related Regulatory Information: This product may be regulated, have exposure limits or other information identified.

* * * Section 4 - First Aid Measures * * *

If this product comes in contact with the eyes: Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Continue flushing until advised to stop by the Poisons Information Center or a doctor, or for at least 15 minutes. If skin contact occurs: Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation. If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary. IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. For advice, contact a Poisons Information Center or a doctor. Urgent hospital treatment is likely to be needed.

* * * Section 5 - Fire Fighting Measures * * *

Flash Point: None.
Flammable Limits: None.
Upper Flammable Limit N.A.
Lower Flammable Limit N.A.

Extinguishing Media, PPE and Guidance for FireFighter: Do NOT use water on a molten salt bath - potential explosion hazard. Carbon dioxide or dry chemical may be used for material around the immediate vicinity of the salt bath. Water may be used on granular/powder material. Avoid storage with reducing agents. Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous Alert Fire Department and tell them location and nature of hazard. May be violently or explosively reactive. Wear full body protective clothing with breathing apparatus.

Fire and Explosion Hazards: Will not burn but increases intensity of fire. Heating may cause expansion or decomposition leading to violent rupture of containers. Heat affected containers remain hazardous. Hazardous fumes may be released under thermal decomposition.

Decomposition Products: Oxides of nitrogen under thermal decomposition

* * * Section 6 - Accidental Release Measures * * *

Containment and Clean up procedures must be conducted in accordance with all local, state, and federal regulations.

Containment and Clean-Up Procedures: Clean up all spills immediately. No smoking, naked lights, ignition sources. Avoid all contact with any organic matter including fuel, solvents, sawdust, paper or cloth and other incompatible materials, as ignition may result. Clear area of personnel and move upwind. Alert Fire Department and tell them location and nature of hazard. May be violently or explosively reactive.

* * * Section 7 - Handling and Storage * * *

Handling and Storage Procedures: Avoid personal contact and inhalation of dust, mist or vapors. Provide adequate ventilation. Always wear protective equipment and wash off any spillage from clothing. Store in original containers. Keep containers securely sealed as supplied. Store in a cool, well-ventilated area. Inorganic reducing agents react with oxidizing agents to generate heat and products that may be flammable, combustible, or otherwise reactive. Their reactions with oxidizing agents may be violent. Incidents involving interaction of active oxidants and reducing agents, either by design or accident, are usually very energetic and examples of so-called redox reactions. Emptied containers of this product may contain hazardous vapors and residue. Clean thoroughly before reusing or discarding. Do not use a welding torch to cut container. Do not use for water or food storage.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Exposure Guidelines:

A. General Product Information: Follow all applicable exposure limits. Keep formation of airborne mists to a minimum.

B. Component Exposure Limits:

CAS #	HAZARDOUS INGREDIENT	OSHA PEL(mg/m3)	ACGIH TLV(mg/m3)
7757-79-1	Potassium Nitrate	N.E.	N.E.
7632-00-0	Sodium Nitrite	N.E.	N.E.

*OSHA-PEL and ACGIH-TLV are 8-Hour TWA unless otherwise noted.
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Engineering Controls: Set up ventilation to effectively remove and prevent buildup of any dust, vapor or mist generated from the handling of this product.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face Protective Equipment: Wear appropriate eye protection to prevent eye contact.

Skin Protection: Wear appropriate personal protective clothing to prevent skin contact. The worker should immediately wash the skin when it becomes contaminated. Remove wet or significantly contaminated work clothing and replace.

Respiratory Protection: If ventilation is not sufficient to effectively prevent buildup of dust, mists or vapors, provide appropriate NIOSH/MSHA respiratory protection.

Personal Protective Equipment: Provide eyewash fountains in areas where there is any possibility that workers could be exposed to the substance; this is irrespective of the recommendation involving the wearing of eye protection.

Provide facilities for quickly drenching the body within the immediate work area for emergency use where there is a possibility of exposure. Depending on the specific circumstances, a deluge shower, a sink or hose could be considered adequate.

* * * Section 9 - Physical & Chemical Properties * * *

Product Trade Name: **SST-120** **ID:** SST120

Physical State: Granular
Color: Odorless, pink granular powder
pH: Not Available
Specific Gravity: N.A.
Evaporation Rate: N.A.
Solubility Water: Complete
Vapor Density: N.A.
Vapor Pressure: N.A.
Octanol-Water Coefficient: N.E.

Boiling Point: Decomposes
Melting Point: 275 F (135 C)
Flash Point: Not Available
Auto-Ignition Temperature: N.E.
Decomposition Temperature: N.E.
Flammability Limits - Low: N.A.
Hi: N.A.

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability: Unstable in the presence of incompatible materials. Product is considered stable under normal handling conditions. Prolonged exposure to heat. Hazardous polymerization will not occur.

Conditions to Avoid: Avoid temperatures >1100 F. Do not mix with amines. This product contains nitrites which may react with amines under certain conditions to form nitrosamines, a reasonably anticipated human carcinogen.

Incompatibility: Acids, ammonium or magnesium compounds, combustibles, organics and reducing agents - particularly cyanides, cyanates and sulfates.

Decomposition Products: See Section 5

Hazardous Polymerization: Will not occur.

* * * Section 11 - Toxicological Information * * *

Route of Exposure: Eye/skin contact, inhalation, ingestion.

Acute Toxicity:

A: General Product Information

Eye Contact: Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals. Prolonged eye contact may cause inflammation characterized by a temporary redness of the conjunctiva (similar to windburn).

Skin Contact: There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

Skin Absorption: No information available for this product.

Ingestion: Toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage to the health of the individual. The substance and/or its metabolites may bind to hemoglobin inhibiting normal uptake of oxygen. This condition, known as "methaemoglobinemia", is a form of oxygen starvation (anoxia). Symptoms include cyanosis (a bluish discoloration skin and mucous membranes) and breathing difficulties.

Inhalation: There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled. If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.

Chronic Hazards: There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Animal testing to see whether nitrites caused cancer proved inconclusive.

Medical Conditions Aggravated by Exposure: The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

Carcinogenicity:

a: Component Carcinogenicity:

None.

Product Trade Name: **SST-120** **ID:** SST120

NTP: No. **IARC:** No.
OSHA: No.

Reproductive/Genetic/Developmental Effects: Sodium Nitrite: LD50 (oral, rat) 132 mg/kg LC50 (inhalation, rat) 5.5 mg/m3/4 hrs

* * * Section 12 - Ecological Information * * *

Ecotoxicity:

A: General Product Information
No information available for this product.

B. Component Analysis - Ecotoxicity - Aquatic Toxicity:
Sodium Nitrite: LC50 (Rainbow Trout, juvenile) = 0.19 - 0.39 mg/L/96H.

Persistence and Mobility: No information available for this product

Environmental: Very toxic to aquatic organisms. Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters. Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

Mobility in Soil: No information available.

* * * Section 13 - Disposal Considerations * * *

Wastes must be tested using methods described in 40 CFR Part 261. It is the generator's responsibility to determine if the waste meets applicable definitions of hazardous wastes. State and local regulations may differ from Federal disposal regulations. Dispose of waste material according to Local, State, Federal and Provincial Environmental Regulations.

* * * Section 14 - Transportation Information * * *

US DOT Information: UN1487, POTASSIUM NITRATE AND SODIUM NITRITE MIXTURES, 5.1, PG II

Marine Pollutant: Yes

IMDG Classification: UN1487, POTASSIUM NITRATE AND SODIUM NITRITE MIXTURE, 5.1, PG II

IATA Classification: UN1487, POTASSIUM NITRATE AND SODIUM NITRITE MIXTURE, 5.1, PG II

The data provided in this section is for information only and may not be specific for the package size or mode of transportation. See package label for further details.

* * * Section 15 - Regulatory Information * * *

US Federal Regulations

A: General Product Information
No additional information available.

B: Component Analysis
This material may contain chemicals, requiring identification under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

Product Trade Name: **SST-120** **ID:** SST120

HAZARDOUS COMPONENT	CERCLA RQ LBS.	SECT 302 TPQ LBS.	SECT 313* TOXIC	Maximum %
Nitrates, Water Dissociable	N.A.	N.A	Solution (Reported as Nitrate Ion [NO3-])	60
Sodium Nitrite	100	N.A.	Yes	50

Sara 311/312 Hazards:

Immediate (Acute)	TRUE
Chronic*	FALSE
Fire	TRUE
Sudden Release-of-Pressure	FALSE
Reactive	TRUE

State Regulations

A: General Product Information

No additional information available.

Other Regulations

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

B: Component Analysis - Inventory

* * * Section 16 - Other Information * * *

Revision Date:

Rev. 1, June 1, 2015

Key/Legend:

ACGIH =	American Conference of Governmental Industrial Hygienists	NFPA =	National Fire Protection Association
CERCLA =	Comprehensive Environmental Response, Compensation and Liability Act	NIOSH =	National Institute for Occupational Safety and Health
EPA =	Environmental Protection Agency	NTP =	National Toxicology Program
HMIS =	Hazardous Material Identification System	OSHA =	Occupational Safety and Health Administration
IARC =	International Agency for Research on Cancer	SARA =	Superfund Amendments and Reauthorization Act
MSHA =	Mine Safety and Health Administration	TSCA =	Toxic Substance Control Act

The information presented herein is believed to be factual as it has been derived from the works and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which Heatbath Corporation bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

This is the end of SDS for SST-120.

Safety Data Sheet

Product Trade Name: SST-140 **ID:** SST140

* * * Section 1 - Chemical Product and Company Identification * * *

Product Trade Name: SST-140

Manufacturer Information

Heatbath Corporation
P.O. Box 51048
Indian Orchard, MA 01151-5048

Contact Phone: (413) 452-2000
8:00 AM - 5:00 PM

CHEMTREC Emergency Phone: (800) 424-9300
24 Hours

CHEMTREC International: (703) 527-3887

Recommended Use: Heat Treating Salt

Restrictions on Use: See Incompatibility, Section 10

* * * Section 2 - Hazards Identification * * *

OSHA Hazard Communication Standard: Considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Not classified as Dangerous Goods for transport purposes.

Hazard Classification: Acute Toxicity (Inhalation) Category 4 | Acute Toxicity (Oral) Category 3 | Eye Irritation Category 2A | Skin Corrosion/Irritation Category 2

Labeling:

Signal Word: DANGER!

Hazard Statements: Toxic if swallowed. Causes skin irritation. Causes serious eye irritation. Harmful if inhaled.

PREVENTION: Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection/face protection.

FIRST AID/IN CASE OF FIRE: IF SWALLOWED: Immediately call a POISON CENTER/doctor. Specific treatment Rinse mouth. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER/doctor if you feel unwell. If eye irritation persists: Get medical advice/attention. IF ON SKIN: Wash with plenty of water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

STORAGE: Store locked up.

DISPOSAL: Dispose of contents/container in accordance with all local, regional, national and/or international regulations.

Hazards Not Otherwise Classified: N.A.
Percent of Ingredients of Unknown Toxicity: N.A.

* * * Section 3 - Composition / Information on Ingredients * * *

HAZARDOUS INGREDIENT	CAS #	PERCENT
BARIUM CHLORIDE	10361-37-2	20 - 40% (T.S.)
POTASSIUM CHLORIDE	7447-40-7	30 - 50% (T.S.)
CALCIUM CHLORIDE	10043-52-4	10 - 30% (T.S.)

T.S. = Trade Secret
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Component Related Regulatory Information: This product may be regulated, have exposure limits or other information identified.

* * * Section 4 - First Aid Measures * * *

If this product comes in contact with the eyes: Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Continue flushing until advised to stop by the Poisons Information Center or a doctor, or for at least 15 minutes. If skin or hair contact occurs: Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation. If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. For advice, contact a Poisons Information Center or a doctor. Urgent hospital treatment is likely to be needed.

* * * Section 5 - Fire Fighting Measures * * *

Extinguishing Media, PPE and Guidance for Firefighter: : Do NOT use water on a molten salt bath - potential explosion hazard. Carbon dioxide or dry chemical may be used for material around the immediate vicinity of the salt bath. Water may be used on granular/powder material. Alert Fire Department and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses.

Fire and Explosion Hazards: Noncombustible. Not considered a significant fire risk, however containers may burn. Decomposition may produce toxic fumes of: hydrogen chloride. Decomposes at high temperatures to produce barium oxide.

Decomposition Products: Oxides of sodium, chlorine

* * * Section 6 - Accidental Release Measures * * *

Containment and Clean up procedures must be conducted in accordance with all local, state, and federal regulations.

Containment and Clean-Up Procedures: Remove all ignition sources. Clean up all spills immediately. Avoid contact with skin and eyes. Moderate hazard. CAUTION: Advise personnel in area. Alert Emergency Services and tell them location and nature of hazard.

* * * Section 7 - Handling and Storage * * *

Handling and Storage Procedures: Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Store in original containers. Keep containers securely sealed. Store in a cool, dry area protected from environmental extremes. Calcium chloride (and its hydrates): are incompatible with boric acid, calcium oxide, bromine trifluoride, 2-furan, percarboxylic acid may produce explosive hydrogen gas on contact with zinc catalyze exothermic polymerization of methyl vinyl ether produce heat on contact with water attack metals. Addition of a quantity of calcium chloride to boiling water has generated heat sufficient to cause a violent steam explosion on several occasions In presence of moisture, the material is corrosive to aluminum, zinc and tin producing highly flammable hydrogen gas. Avoid strong acids, acid chlorides, acid anhydrides and chloroformates. Emptied containers of this product may contain hazardous vapors and residue. Clean thoroughly before reusing or discarding. Do not use a welding torch to cut container. Do not use for water or food storage.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Exposure Guidelines:

A. General Product Information: Follow all applicable exposure limits. Keep formation of airborne mists to a minimum.

B. Component Exposure Limits:

CAS #	HAZARDOUS INGREDIENT	OSHA PEL(mg/m3)	ACGIH TLV(mg/m3)
10361-37-2	Barium Chloride	0.5 (as Ba)	0.5 (as Ba)
10043-52-4	Calcium Chloride	N.E.	N.E.

*OSHA-PEL and ACGIH-TLV are 8-Hour TWA unless otherwise noted.
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Engineering Controls: Set up ventilation to effectively remove and prevent buildup of any dust, vapor or mist generated from the handling of this product.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face Protective Equipment: Wear appropriate eye protection to prevent eye contact.

Skin Protection: Wear appropriate personal protective clothing to prevent skin contact. The worker should immediately wash the skin when it becomes contaminated. Remove wet or significantly contaminated work clothing and replace.

Respiratory Protection: If ventilation is not sufficient to effectively prevent buildup of dust, mists or vapors, provide appropriate NIOSH/MSHA respiratory protection.

Personal Protective Equipment: Provide eyewash fountains in areas where there is any possibility that workers could be exposed to the substance; this is irrespective of the recommendation involving the wearing of eye protection.

Provide facilities for quickly drenching the body within the immediate work area for emergency use where there is a possibility of exposure. Depending on the specific circumstances, a deluge shower, a sink or hose could be considered adequate.

* * * Section 9 - Physical & Chemical Properties * * *

Product Trade Name: **SST-140** **ID:** SST140

Physical State: Granular
Color: Odorless, white powder.
pH: Not Available
Specific Gravity: N.A.
Evaporation Rate: N.A.
Solubility Water: Complete
Vapor Density: N.A.
Vapor Pressure: N.A.
Octanol-Water Coefficient: N.E.

Boiling Point: N.A.
Melting Point: 920°F (493°C)
Flash Point: Not Available
Auto-Ignition Temperature: N.E.
Decomposition Temperature: N.E.
Flammability Limits - Low: N.A.
Hi: N.A.

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability: Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerization will not occur.

Conditions to Avoid: None

Incompatibility: For molten salt, avoid combustibles.

Decomposition Products: See Section 5

Hazardous Polymerization: Will not occur.

* * * Section 11 - Toxicological Information * * *

Route of Exposure: Eye/skin contact, inhalation, ingestion.

Acute Toxicity:

A: General Product Information

Eye Contact: This material can cause eye irritation and damage in some persons.

Skin Contact: Skin contact is not thought to produce harmful health effects (as classified under EC Directives using animal models). Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions. Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. Irritation and skin reactions are possible with sensitive skin. Open cuts, abraded or irritated skin should not be exposed to this material.I Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.

Skin Absorption: No information available for this product.

Ingestion: Toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage to the health of the individual. Compared with other metals, the calcium ion and most calcium compounds have low toxicity. Acute calcium poisoning is rare, and difficult to achieve unless calcium compounds are administered intravenously or taken in high doses over a prolonged period.. Excessive consumption of calcium carbonate antacids/dietary supplements over a period of weeks or months can cause milk-alkali syndrome, with symptoms ranging from hypercalcemia to potentially fatal renal failure.

Inhalation: Inhalation of dusts, generated by the material, during the course of normal handling, may be harmful. The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of dusts, or fumes, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.

Chronic Hazards: Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Barium compounds may cause high blood pressure, airway irritation and damage the liver, spleen and bone marrow. Prolonged exposure may cause a lung inflammation and scarring.

Medical Conditions Aggravated by Exposure: N.A.

Carcinogenicity:

a: Component Carcinogenicity:
None.

NTP: No. **IARC:** No.
OSHA: No.

Reproductive/Genetic/Developmental Effects: Prolonged exposure to barium in high concentrations caused kidney effects in rats and mice.

* * * Section 12 - Ecological Information * * *

Ecotoxicity:

A: General Product Information
No information available for this product.

B. Component Analysis - Ecotoxicity - Aquatic Toxicity:
No information available for this product.

Persistence and Mobility: No information available for this product

Environmental: for calcium chloride: Environmental fate: Calcium chlorides vapor pressure is negligible and its water solubility is 745 g/L at 20 deg C. Calcium chloride is readily dissociated into calcium and chloride ions in water. These physico-chemical properties indicate that calcium chloride released into the environment is distributed into the water compartment in the form of calcium and chloride ions. Ecotoxicity: Fish LC50 (96 h): Pimephales promelas 4630 mg/l Algae EC50 (72 h): Selenastrum capricornutum 2900 mg/l Daphnia magna EC50 (48 h): 1062 mg/l. The chronic toxicity study with Daphnia magna shows that a 16% impairment of reproduction (EC16) is caused at the concentration of 320 mg/L. The 72-hour EC20 for Selenastrum capricornutum determined by the OECD TG 201 study is 1000 mg/L.

Mobility in Soil: No information available.

* * * Section 13 - Disposal Considerations * * *

Wastes must be tested using methods described in 40 CFR Part 261. It is the generator's responsibility to determine if the waste meets applicable definitions of hazardous wastes. State and local regulations may differ from Federal disposal regulations. Dispose of waste material according to Local, State, Federal and Provincial Environmental Regulations.

* * * Section 14 - Transportation Information * * *

US DOT Information: ALKALI SALTS CRUDE, NOT D.O.T. REGULATED

Marine Pollutant: No

IMDG Classification: NOT REGULATED

IATA Classification: NOT REGULATED

The data provided in this section is for information only and may not be specific for the package size or mode of transportation. See package label for further details.

* * * Section 15 - Regulatory Information * * *

US Federal Regulations

A: General Product Information
No additional information available.

B: Component Analysis
This material may contain chemicals, requiring identification under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

Safety Data Sheet

Product Trade Name: **SST-140** **ID:** SST140

HAZARDOUS COMPONENT	CERCLA RQ LBS.	SECT 302 TPQ LBS.	SECT 313* TOXIC	Maximum %
Barium Chloride	N.A.	N.A.	Yes	40

Sara 311/312 Hazards:

Immediate (Acute)	TRUE
Chronic*	FALSE
Fire	FALSE
Sudden Release-of-Pressure	FALSE
Reactive	FALSE

State Regulations

A: General Product Information

No additional information available.

Other Regulations

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

B: Component Analysis - Inventory

* * * Section 16 - Other Information * * *

Revision Date:

Rev. 1, June 1, 2015

Key/Legend:

ACGIH =	American Conference of Governmental Industrial Hygienists	NFPA =	National Fire Protection Association
CERCLA =	Comprehensive Environmental Response, Compensation and Liability Act	NIOSH =	National Institute for Occupational Safety and Health
EPA =	Environmental Protection Agency	NTP =	National Toxicology Program
HMIS =	Hazardous Material Identification System	OSHA =	Occupational Safety and Health Administration
IARC =	International Agency for Research on Cancer	SARA =	Superfund Amendments and Reauthorization Act
MSHA =	Mine Safety and Health Administration	TSCA =	Toxic Substance Control Act

The information presented herein is believed to be factual as it has been derived from the works and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which Heatbath Corporation bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

This is the end of SDS for SST-140.

Safety Data Sheet

Product Trade Name: SST-145 **ID:** SST145

* * * Section 1 - Chemical Product and Company Identification * * *

Product Trade Name: **SST-145**

Manufacturer Information

Heatbath Corporation
P.O. Box 51048
Indian Orchard, MA 01151-5048

Contact Phone: (413) 452-2000
8:00 AM - 5:00 PM

CHEMTREC Emergency Phone: (800) 424-9300
24 Hours

CHEMTREC International: (703) 527-3887

Recommended Use: Heat Treating Salt

Restrictions on Use: See Incompatibility, Section 10

* * * Section 2 - Hazards Identification * * *

OSHA Hazard Communication Standard: Considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Not classified as Dangerous Goods for transport purposes.

Hazard Classification: Acute Toxicity (Inhalation) Category 4 | Acute Toxicity (Oral) Category 3 | Eye Irritation Category 2A | Skin Corrosion/Irritation Category 2 | STOT - SE (Resp. Irr.) Category 3

Labeling:

Signal Word: DANGER!

Hazard Statements: Toxic if swallowed. Causes skin irritation. Causes serious eye irritation. Harmful if inhaled. May cause respiratory irritation.

PREVENTION: Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection/face protection.

FIRST AID/IN CASE OF FIRE: IF SWALLOWED: Immediately call a POISON CENTER/doctor/… Specific treatment Rinse mouth. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER/doctor/…if you feel unwell. If eye irritation persists: Get medical advice/attention. IF ON SKIN: Wash with plenty of water/... IF INHALED: Remove person to fresh air and keep comfortable for breathing. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

STORAGE: Store locked up. Store in a well-ventilated place. Keep container tightly closed.

DISPOSAL: Dispose of contents/container in accordance with all local, regional, national and/or international regulations.

Hazards Not Otherwise Classified: N.A.
Percent of Ingredients of Unknown Toxicity: N.A.

* * * Section 3 - Composition / Information on Ingredients * * *

Product Trade Name: **SST-145** **ID:** SST145

HAZARDOUS INGREDIENT	CAS #	PERCENT
BARIUM CHLORIDE	10361-37-2	40 - 60% (T.S.)
POTASSIUM CHLORIDE	7447-40-7	20 - 40% (T.S.)

T.S. = Trade Secret
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Component Related Regulatory Information: This product may be regulated, have exposure limits or other information identified.

* * * Section 4 - First Aid Measures * * *

If this product comes in contact with the eyes: Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. If skin contact occurs: Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation. If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. For advice, contact a Poisons Information Centre or a doctor. Urgent hospital treatment is likely to be needed.

* * * Section 5 - Fire Fighting Measures * * *

Flash Point: None. **Upper Flammable Limit** N.A.
Flammable Limits: None. **Lower Flammable Limit** N.A.

Extinguishing Media, PPE and Guidance for FireFighter: Do NOT use water on a molten salt bath - potential explosion hazard. Carbon dioxide or dry chemical may be used for material around the immediate vicinity of the salt bath. Water may be used on granular/powder material. Alert Fire Department and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses.

Fire and Explosion Hazards: Non combustible. Not considered a significant fire risk, however containers may burn. Decomposition may produce toxic fumes of:, hydrogen chloride Decomposes at high temperatures to produce barium oxide.

Decomposition Products: Oxides of sodium, chlorine

* * * Section 6 - Accidental Release Measures * * *

Containment and Clean up procedures must be conducted in accordance with all local, state, and federal regulations.

Containment and Clean-Up Procedures: Remove all ignition sources. Clean up all spills immediately. Avoid contact with skin and eyes. Moderate hazard. CAUTION: Advise personnel in area. Alert Emergency Services and tell them location and nature of hazard.

* * * Section 7 - Handling and Storage * * *

Handling and Storage Procedures: Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Store in original containers. Keep containers securely sealed. Store in a cool, dry area protected from environmental extremes. Avoid strong acids, acid chlorides, acid anhydrides and chloroformates. Emptied containers of this product may contain hazardous vapors and residue. Clean thoroughly before reusing or discarding. Do not use a welding torch to cut container. Do not use for water or food storage.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Exposure Guidelines:

A. General Product Information: Follow all applicable exposure limits. Keep formation of airborne mists to a minimum.

B. Component Exposure Limits:

CAS #	HAZARDOUS INGREDIENT	OSHA PEL(mg/m3)	ACGIH TLV(mg/m3)
10361-37-2	Barium Chloride	0.5 (as BA)	0.5 (as BA)

*OSHA-PEL and ACGIH-TLV are 8-Hour TWA unless otherwise noted.
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Engineering Controls: Set up ventilation to effectively remove and prevent buildup of any dust, vapor or mist generated from the handling of this product.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face Protective Equipment: Wear appropriate eye protection to prevent eye contact.

Skin Protection: Wear appropriate personal protective clothing to prevent skin contact. The worker should immediately wash the skin when it becomes contaminated. Remove wet or significantly contaminated work clothing and replace.

Respiratory Protection: If ventilation is not sufficient to effectively prevent buildup of dust, mists or vapors, provide appropriate NIOSH/MSHA respiratory protection.

Personal Protective Equipment: Provide eyewash fountains in areas where there is any possibility that workers could be exposed to the substance; this is irrespective of the recommendation involving the wearing of eye protection.

Provide facilities for quickly drenching the body within the immediate work area for emergency use where there is a possibility of exposure. Depending on the specific circumstances, a deluge shower, a sink or hose could be considered adequate.

* * * Section 9 - Physical & Chemical Properties * * *

Physical State: Granular
Color: Odorless, white powder
pH: Not Available
Specific Gravity: N.A.
Evaporation Rate: N.A.
Solubility Water: Complete
Vapor Density: N.A.
Vapor Pressure: N.A.
Octanol-Water Coefficient: N.E.

Boiling Point: N.A.
Melting Point: 1020 F (549 C)
Flash Point: Not Available
Auto-Ignition Temperature: N.E.
Decomposition Temperature: N.E.
Flammability Limits - Low: N.A.
Hi: N.A.

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Product Trade Name: **SST-145** **ID:** SST145

Chemical Stability: Unstable in the presence of incompatible materials. Product is considered stable.

Conditions to Avoid: None

Incompatibility: For molten salt, avoid combustibles.

Decomposition Products: See section 5

Hazardous Polymerization: Will not occur.

* * * Section 11 - Toxicological Information * * *

Route of Exposure: Eye/skin contact, inhalation, ingestion.

Acute Toxicity:

A: General Product Information

Eye Contact: This material can cause eye irritation and damage in some persons.

Skin Contact: This material can cause inflammation of the skin on contact in some persons. The material may accentuate any pre-existing dermatitis condition Irritation and skin reactions are possible with sensitive skin Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

Skin Absorption: No information available for this product.

Ingestion: Toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage to the health of the individual. Ingestion of soluble barium compounds may result in ulceration of the mucous membranes of the gastrointestinal tract, tightness in the muscles of the face and neck, gastroenteritis, vomiting, diarrhea, muscular tremors and paralysis, anxiety, weakness, labored breathing, cardiac irregularity due to contractions of smooth striated and cardiac muscles (often violent and painful), slow irregular pulse, hypertension, convulsions and respiratory failure.

Inhalation: Inhalation of dusts, generated by the material, during the course of normal handling, may be harmful. The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.

Chronic Hazards: Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Barium compounds may cause high blood pressure, airway irritation and damage the liver, spleen and bone marrow. Prolonged exposure may cause a lung inflammation and scarring.

Medical Conditions Aggravated by Exposure: Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.

Carcinogenicity:

a: Component Carcinogenicity:

None.

NTP:	No.	**IARC:**	No.
OSHA:	No.		

Reproductive/Genetic/Developmental Effects: Prolonged exposure to barium in high concentrations caused kidney effects in rats and mice.

* * * Section 12 - Ecological Information * * *

Ecotoxicity:

A: General Product Information
No information available for this product.

B. Component Analysis - Ecotoxicity - Aquatic Toxicity:
No information available for this product.

Persistence and Mobility: No information available for this product

Environmental: For Chloride: Although inorganic chloride ions are not normally considered toxic they can exist in effluents at acutely toxic levels. Incidental exposure to inorganic chloride may occur in occupational settings where chemicals management policies are improperly applied. The toxicity of chloride salts depends on the counter-ion (cation) present; that of chloride itself is unknown. Chloride toxicity has not been observed in humans except in the special case of impaired sodium chloride metabolism, e.g. in congestive heart failure.

Mobility in Soil: No information available.

* * * Section 13 - Disposal Considerations * * *

Wastes must be tested using methods described in 40 CFR Part 261. It is the generator's responsibility to determine if the waste meets applicable definitions of hazardous wastes. State and local regulations may differ from Federal disposal regulations. Dispose of waste material according to Local, State, Federal and Provincial Environmental Regulations.

* * * Section 14 - Transportation Information * * *

US DOT Information: ALKALI SALTS CRUDE, NOT D.O.T. REGULATED

Marine Pollutant: No

IMDG Classification: None

IATA Classification: None

The data provided in this section is for information only and may not be specific for the package size or mode of transportation. See package label for further details.

* * * Section 15 - Regulatory Information * * *

US Federal Regulations

A: General Product Information
No additional information available.

B: Component Analysis
This material may contain chemicals, requiring identification under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

HAZARDOUS COMPONENT	CERCLA RQ LBS.	SECT 302 TPQ LBS.	SECT 313* TOXIC	Maximum %
Barium Chloride	N.A.	N.A.	Yes	60

Sara 311/312 Hazards:		
	Immediate (Acute)	TRUE
	Chronic*	FALSE
	Fire	FALSE
	Sudden Release-of-Pressure	FALSE
	Reactive	FALSE

Product Trade Name: **SST-145** **ID:** SST145

State Regulations

A: General Product Information

No additional information available.

Other Regulations

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

B: Component Analysis - Inventory

* * * Section 16 - Other Information * * *

Revision Date:

Rev. 1, June 1, 2015

Key/Legend:

ACGIH =	American Conference of Governmental Industrial Hygienists	NFPA =	National Fire Protection Association
CERCLA =	Comprehensive Environmental Response, Compensation and Liability Act	NIOSH =	National Institute for Occupational Safety and Health
EPA =	Environmental Protection Agency	NTP =	National Toxicology Program
HMIS =	Hazardous Material Identification System	OSHA =	Occupational Safety and Health Administration
IARC =	International Agency for Research on Cancer	SARA =	Superfund Amendments and Reauthorization Act
MSHA =	Mine Safety and Health Administration	TSCA =	Toxic Substance Control Act

The information presented herein is believed to be factual as it has been derived from the works and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which Heatbath Corporation bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

This is the end of SDS for SST-145.

Safety Data Sheet

Product Trade Name: **SST-170** **ID:** SST170

* * * Section 1 - Chemical Product and Company Identification * * *

Product Trade Name: **SST-170**

Manufacturer Information

Heatbath Corporation
P.O. Box 51048
Indian Orchard, MA 01151-5048

Contact Phone: (413) 452-2000
8:00 AM - 5:00 PM

CHEMTREC Emergency Phone: (800) 424-9300
24 Hours

CHEMTREC International: (703) 527-3887

Recommended Use: Heat Treating Salt

Restrictions on Use: See Incompatibility, Section 10

* * * Section 2 - Hazards Identification * * *

OSHA Hazard Communication Standard: Considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Not classified as Dangerous Goods for transport purposes.

Hazard Classification: Acute Toxicity (Inhalation) Category 4 | Acute Toxicity (Oral) Category 3

Labeling:

Signal Word: DANGER!

Hazard Statements: Toxic if swallowed Harmful if inhaled

PREVENTION: Wash thoroughly after handling.. Do not eat, drink or smoke when using this product.. Use in a well-ventilated area.. Avoid breathing dust/fume/gas/mist/vapors/spray.

FIRST AID/IN CASE OF FIRE: IF SWALLOWED: Immediately call a POISON CENTER/doctor/... Specific treatment (see advice in section 4). Rinse mouth. Call a POISON CENTER/doctor/...if you feel unwell. IF INHALED: Remove person to fresh air and keep comfortable for breathing.

STORAGE: Store locked up.

DISPOSAL: Dispose of contents/container in accordance with all local, regional, national and/or international regulations.

Hazards Not Otherwise Classified: N.A.
Percent of Ingredients of Unknown Toxicity: N.A.

* * * Section 3 - Composition / Information on Ingredients * * *

HAZARDOUS INGREDIENT	CAS #	PERCENT
BARIUM CHLORIDE	10361-37-2	>95% (T.S.)

Product Trade Name: **SST-170** **ID:** SST170

T.S. = Trade Secret
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Component Related Regulatory Information: This product may be regulated, have exposure limits or other information identified.

* * * Section 4 - First Aid Measures * * *

If this product comes in contact with the eyes: Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. If skin or hair contact occurs: Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation. If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. For advice, contact a Poisons Information Centre or a doctor. Urgent hospital treatment is likely to be needed.

* * * Section 5 - Fire Fighting Measures * * *

Flash Point: None.
Flammable Limits: None.
Upper Flammable Limit N.A.
Lower Flammable Limit N.A.

Extinguishing Media, PPE and Guidance for FireFighter: Do NOT use water on a molten salt bath - potential explosion hazard. Carbon dioxide or dry chemical may be used for material around the immediate vicinity of the salt bath. Water may be used on granular/powder material. Alert Fire Department and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses.

Fire and Explosion Hazards: Non combustible. Not considered a significant fire risk, however containers may burn. Decomposition may produce toxic fumes of:, hydrogen chloride Decomposes at high temperatures to produce barium oxide.

Decomposition Products: None known

* * * Section 6 - Accidental Release Measures * * *

Containment and Clean up procedures must be conducted in accordance with all local, state, and federal regulations.

Containment and Clean-Up Procedures: Remove all ignition sources. Clean up all spills immediately. Avoid contact with skin and eyes. Moderate hazard. CAUTION: Advise personnel in area. Alert Emergency Services and tell them location and nature of hazard.

* * * Section 7 - Handling and Storage * * *

Handling and Storage Procedures: Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Store in original containers. Keep containers securely sealed. Store in a cool, dry area protected from environmental extremes. Avoid strong acids, acid chlorides, acid anhydrides and chloroformates. Emptied containers of this product may contain hazardous vapors and residue. Clean thoroughly before reusing or discarding. Do not use a welding torch to cut container. Do not use for water or food storage.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Exposure Guidelines:

A. General Product Information: Follow all applicable exposure limits. Keep formation of airborne mists to a minimum.

B. Component Exposure Limits:

Product Trade Name: **SST-170** **ID:** SST170

CAS #	HAZARDOUS INGREDIENT	OSHA PEL(mg/m3)	ACGIH TLV(mg/m3)
10361-37-2	Barium Chloride	0.5 (as BA)	0.5 (as BA)

*OSHA-PEL and ACGIH-TLV are 8-Hour TWA unless otherwise noted.
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Engineering Controls: Set up ventilation to effectively remove and prevent buildup of any dust, vapor or mist generated from the handling of this product.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face Protective Equipment: Wear appropriate eye protection to prevent eye contact.

Skin Protection: Wear appropriate personal protective clothing to prevent skin contact. The worker should immediately wash the skin when it becomes contaminated. Remove wet or significantly contaminated work clothing and replace.

Respiratory Protection: If ventilation is not sufficient to effectively prevent buildup of dust, mists or vapors, provide appropriate NIOSH/MSHA respiratory protection.

Personal Protective Equipment: Provide eyewash fountains in areas where there is any possibility that workers could be exposed to the substance; this is irrespective of the recommendation involving the wearing of eye protection.

Provide facilities for quickly drenching the body within the immediate work area for emergency use where there is a possibility of exposure. Depending on the specific circumstances, a deluge shower, a sink or hose could be considered adequate.

* * * Section 9 - Physical & Chemical Properties * * *

Physical State: Granular
Color: Odorless, white powder.
pH: Not Available
Specific Gravity: N.A.
Evaporation Rate: N.A.
Solubility Water: Complete.
Vapor Density: N.A.
Vapor Pressure: N.A.
Octanol-Water Coefficient: N.E.

Boiling Point: N.A.
Melting Point: 1750 F (954 C)
Flash Point: Not Available
Auto-Ignition Temperature: N.E.
Decomposition Temperature: N.E.
Flammability Limits - Low: N.A.
Hi: N.A.

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability: Unstable in the presence of incompatible materials. Product is considered stable.

Conditions to Avoid: None

Incompatibility: For molten salt, avoid combustibles.

Decomposition Products: See section 5

Hazardous Polymerization: Will not occur.

* * * Section 11 - Toxicological Information * * *

Route of Exposure: eye/skin contact, inhalation, ingestion.

Acute Toxicity:

A: General Product Information

Eye Contact: Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterized by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.

Skin Contact: Skin contact is not thought to produce harmful health effects (as classified under EC Directives using animal models). Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

Skin Absorption: No information available for this product.

Ingestion: Toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage to the health of the individual. Ingestion of soluble barium compounds may result in ulceration of the mucous membranes of the gastrointestinal tract, tightness in the muscles of the face and neck, gastroenteritis, vomiting, diarrhea, muscular tremors and paralysis, anxiety, weakness, labored breathing, cardiac irregularity due to contractions of smooth striated and cardiac muscles (often violent and painful), slow irregular pulse, hypertension, convulsions and respiratory failure.

Inhalation: Inhalation of dusts, generated by the material, during the course of normal handling, may be harmful. The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of dusts, or fumes, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.

Chronic Hazards: Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimized as a matter of course. Barium compounds may cause high blood pressure, airway irritation and damage the liver, spleen and bone marrow. Prolonged exposure may cause a lung inflammation and scarring.

Medical Conditions Aggravated by Exposure: N.A.

Carcinogenicity:

a: Component Carcinogenicity:

None.

NTP:	No.	**IARC:**	No.
OSHA:	No.		

Reproductive/Genetic/Developmental Effects: Prolonged exposure to barium in high concentrations caused kidney effects in rats and mice.

* * * Section 12 - Ecological Information * * *

Ecotoxicity:

A: General Product Information

No information available for this product.

B. Component Analysis - Ecotoxicity - Aquatic Toxicity:

No information available for this product.

Persistence and Mobility: No information available for this product

Environmental: For Chloride: Although inorganic chloride ions are not normally considered toxic they can exist in effluents at acutely toxic levels. Incidental exposure to inorganic chloride may occur in occupational settings where chemicals management policies are improperly applied. The toxicity of chloride salts depends on the counter-ion (cation) present; that of chloride itself is unknown. Chloride toxicity has not been observed in humans except in the special case of impaired sodium chloride metabolism, e.g. in congestive heart failure.

Mobility in Soil: No information available.

* * * Section 13 - Disposal Considerations * * *

Wastes must be tested using methods described in 40 CFR Part 261. It is the generator's responsibility to determine if the waste meets applicable definitions of hazardous wastes. State and local regulations may differ from Federal disposal regulations. Dispose of waste material according to Local, State, Federal and Provincial Environmental Regulations.

* * * Section 14 - Transportation Information * * *

US DOT Information: ALKALI SALTS CRUDE, NOT D.O.T. REGULATED

Marine Pollutant: No

IMDG Classification: None

IATA Classification: None

The data provided in this section is for information only and may not be specific for the package size or mode of transportation. See package label for further details.

* * * Section 15 - Regulatory Information * * *

US Federal Regulations

A: General Product Information

No additional information available.

B: Component Analysis

This material may contain chemicals, requiring identification under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

HAZARDOUS COMPONENT	CERCLA RQ LBS.	SECT 302 TPQ LBS.	SECT 313* TOXIC	Maximum %
Barium Chloride	N.A.	N.A.	Yes	>95

Sara 311/312 Hazards:	**Immediate (Acute)**	TRUE
	Chronic*	FALSE
	Fire	FALSE
	Sudden Release-of-Pressure	FALSE
	Reactive	FALSE

State Regulations

A: General Product Information

No additional information available.

Other Regulations

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

B: Component Analysis - Inventory

* * * Section 16 - Other Information * * *

Revision Date:

Rev. 1, June 1, 2015

Product Trade Name: **SST-170** **ID:** SST170

Key/Legend:

ACGIH =	American Conference of Governmental Industrial Hygienists	NFPA =	National Fire Protection Association
CERCLA =	Comprehensive Environmental Response, Compensation and Liability Act	NIOSH =	National Institute for Occupational Safety and Health
EPA =	Environmental Protection Agency	NTP =	National Toxicology Program
HMIS =	Hazardous Material Identification System	OSHA =	Occupational Safety and Health Administration
IARC =	International Agency for Research on Cancer	SARA =	Superfund Amendments and Reauthorization Act
MSHA =	Mine Safety and Health Administration	TSCA =	Toxic Substance Control Act

The information presented herein is believed to be factual as it has been derived from the works and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which Heatbath Corporation bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

This is the end of SDS for SST-170.

Safety Data Sheet

Product Trade Name: BA-TREAT **ID:** BATREA

* * * Section 1 - Chemical Product and Company Identification * * *

Product Trade Name: **BA-TREAT**

Manufacturer Information

Heatbath Corporation
P.O. Box 51048
Indian Orchard, MA 01151-5048

Contact Phone: (413) 452-2000
8:00 AM - 5:00 PM

CHEMTREC Emergency Phone: (800) 424-9300
24 Hours

CHEMTREC International: (703) 527-3887

Recommended Use: Water treatment additive

Restrictions on Use: See Incompatibility, Section 10

* * * Section 2 - Hazards Identification * * *

OSHA Hazard Communication Standard: Considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Not classified as Dangerous Goods for transport purposes.

Hazard Classification: Acute Aquatic Hazard Category 3 | Acute Toxicity (Oral) Category 4 | Reproductive Toxicity Category 1B | Serious Eye Damage Category 1 | Skin Corrosion/Irritation Category 2 | STOT - SE (Resp. Irr.) Category 3

Labeling:

Signal Word: DANGER!

Hazard Statements: Harmful if swallowed. Causes skin irritation. Causes serious eye damage. May cause respiratory irritation. May damage fertility or the unborn child. Harmful to aquatic life.

PREVENTION: Obtain special instructions before use. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Avoid release to the environment.

FIRST AID/IN CASE OF FIRE: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/ attention. Immediately call a POISON CENTER Specific treatment IF SWALLOWED: Call a POISON CENTER/ doctor/... If you feel unwell. IF ON SKIN: Wash with plenty of water/... IF INHALED: Remove person to fresh air and keep comfortable for breathing. Rinse mouth. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

STORAGE: Store locked up. Store in a well-ventilated place. Keep container tightly closed.

DISPOSAL: Dispose of contents/container in accordance with all local, regional, national and/or international regulations.

Hazards Not Otherwise Classified: N.A.
Percent of Ingredients of Unknown Toxicity: N.A.

* * * Section 3 - Composition / Information on Ingredients * * *

HAZARDOUS INGREDIENT	CAS #	PERCENT
AMMONIUM SULFATE	7783-20-2	20 - 40% (T.S.)
SODIUM NITRITE	7632-00-0	1 - 10% (T.S.)

T.S. = Trade Secret
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Component Related Regulatory Information: This product may be regulated, have exposure limits or other information identified.

* * * Section 4 - First Aid Measures * * *

If this product comes in contact with the eyes: Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Transport to hospital or doctor without delay. If skin contact occurs: Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation. If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. For advice, contact a Poisons Information Centre or a doctor. Urgent hospital treatment is likely to be needed. In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.

* * * Section 5 - Fire Fighting Measures * * *

Flash Point: None.
Flammable Limits: N.A.

Upper Flammable Limit N.A.
Lower Flammable Limit N.A.

Extinguishing Media, PPE and Guidance for FireFighter: There is no restriction on the type of extinguisher which may be used. Use extinguishing media suitable for surrounding area. Alert Fire department and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses. Use fire fighting procedures suitable for surrounding area.

Fire and Explosion Hazards: Non combustible. Not considered a significant fire risk, however containers may burn. Decomposition may produce toxic fumes of:, nitrogen oxides (NOx), sulfur oxides (SOx) May emit poisonous fumes. May emit corrosive fumes.

Decomposition Products: Oxides of sulfur, oxides of nitrogen

* * * Section 6 - Accidental Release Measures * * *

Containment and Clean up procedures must be conducted in accordance with all local, state, and federal regulations.

Containment and Clean-Up Procedures: Clean up all spills immediately. Avoid breathing vapors and contact with skin and eyes. Control personal contact with the substance, by using protective equipment. Contain and absorb spill with sand, earth, inert material or vermiculite. Moderate hazard. Clear area of personnel and move upwind. Alert Fire Department and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves.

* * * Section 7 - Handling and Storage * * *

Handling and Storage Procedures: Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps. N.A. Ammonium sulfate: is strongly acid in aqueous solution reacts with caustics forming ammonia reacts violently with potassium chlorate when hot reacts with nitrates, nitrites, chlorates attacks metals is incompatible with sulfuric acid, aliphatic amines, alkanolamines, amides, organic anhydrides, isocyanates, vinyl acetate, alkylene oxides, epichlorohydrin, potassium plus ammonium nitrate, sodium-potassium powder plus ammonium nitrate mixtures with sodium hypochlorite form unstable, explosive nitrogen trichloride Avoid strong bases. Emptied containers of this product may contain hazardous vapors and residue. Clean thoroughly before reusing or discarding. Do not use a welding torch to cut container. Do not use for water or food storage.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Exposure Guidelines:

A. General Product Information: Follow all applicable exposure limits. Keep formation of airborne mists to a minimum.

B. Component Exposure Limits:

CAS #	HAZARDOUS INGREDIENT	OSHA PEL(mg/m3)	ACGIH TLV(mg/m3)
7783-20-2	AMMONIUM SULFATE	N.E.	N.E.
7632-00-0	SODIUM NITRITE	N.E.	N.E.

*OSHA-PEL and ACGIH-TLV are 8-Hour TWA unless otherwise noted.
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Engineering Controls: Set up ventilation to effectively remove and prevent buildup of any dust, vapor or mist generated from the handling of this product.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face Protective Equipment: Wear appropriate eye protection to prevent eye contact.

Skin Protection: Wear appropriate personal protective clothing to prevent skin contact. The worker should immediately wash the skin when it becomes contaminated. Remove wet or significantly contaminated work clothing and replace.

Respiratory Protection: If ventilation is not sufficient to effectively prevent buildup of dust, mists or vapors, provide appropriate NIOSH/MSHA respiratory protection.

Personal Protective Equipment: Provide eyewash fountains in areas where there is any possibility that workers could be exposed to the substance; this is irrespective of the recommendation involving the wearing of eye protection.

Provide facilities for quickly drenching the body within the immediate work area for emergency use where there is a possibility of exposure. Depending on the specific circumstances, a deluge shower, a sink or hose could be considered adequate.

* * * Section 9 - Physical & Chemical Properties * * *

Product Trade Name: **BA-TREAT** **ID:** BATREA

Physical State: Liquid
Color: Odorless, cloudy liquid
pH: Not Available
Specific Gravity: 1.11
Evaporation Rate: N.A.
Solubility Water: Complete
Vapor Density: N.E.
Vapor Pressure: N.E.
Octanol-Water Coefficient: N.E.

Boiling Point: 212 F
Melting Point: Not Available
Flash Point: Not Available
Auto-Ignition Temperature: N.E.
Decomposition Temperature: N.E.
Flammability Limits - Low: N.A.
Hi: N.A.

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability: Unstable in the presence of incompatible materials. Product is considered stable.

Conditions to Avoid: None

Incompatibility: Acids, cyanides, reducing agents, organics.

Decomposition Products: See section 5

Hazardous Polymerization: Will not occur.

* * * Section 11 - Toxicological Information * * *

Route of Exposure: eye/skin contact, inhalation, ingestion.

Acute Toxicity:

Product Trade Name: **BA-TREAT** **ID:** BATREA

A: General Product Information

Eye Contact: If applied to the eyes, this material causes severe eye damage. Isopropanol vapor may cause mild eye irritation at 400 ppm. Splashes may cause severe eye irritation, possible corneal burns and eye damage. Eye contact may cause tearing or blurring of vision.

Skin Contact: This material can cause inflammation of the skin on contact in some persons. The material may accentuate any pre-existing dermatitis condition 511ipa Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

Skin Absorption: No information available for this product.

Ingestion: Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. Following ingestion, a single exposure to isopropyl alcohol produced lethargy and non-specific effects such as weight loss and irritation. Ingestion of near-lethal doses of isopropanol produces histopathological changes of the stomach, lungs and kidneys, incoordination, lethargy, gastrointestinal tract irritation, and inactivity or anesthesia. Swallowing 10 ml.

Inhalation: The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Levels above 10 ug/m3 of suspended inorganic sulfates in the air may cause an excess risk of asthmatic attacks in susceptible persons Not normally a hazard due to non-volatile nature of product

Chronic Hazards: Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. There is some evidence that inhaling this product is more likely to cause a sensitiZation reaction in some persons compared to the general population. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.

Medical Conditions Aggravated by Exposure: Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.

Carcinogenicity:

a: Component Carcinogenicity:

None.

NTP:	No.	**IARC:**	No.
OSHA:	No.		

Reproductive/Genetic/Developmental Effects: Sodium Nitrite: LD50 (oral, rat) 132 mg/kg LC50 (inhalation, rat) 5.5 mg/m3/4 hrs

* * * Section 12 - Ecological Information * * *

Ecotoxicity:

A: General Product Information

No information available for this product.

B. Component Analysis - Ecotoxicity - Aquatic Toxicity:

No information available for this product.

Persistence and Mobility: No information available for this product

Environmental: for ammonium sulfate Environmental fate: Based on the physico-chemical properties of ammonium sulfate, water is expected to be the main target compartment. Although ammonium sulfate can be created in the atmosphere from ammonia and sulfur dioxide, this process is limited by atmospheric sulfur dioxide, not by ammonia, which has many natural sources. Particulate ammonium sulfate is removed from air by wet and dry deposition. There is no evidence for photodegradation of ammonium sulfate.

Mobility in Soil: No information available.

* * * Section 13 - Disposal Considerations * * *

Wastes must be tested using methods described in 40 CFR Part 261. It is the generator's responsibility to determine if the waste meets applicable definitions of hazardous wastes. State and local regulations may differ from Federal disposal regulations. Dispose of waste material according to Local, State, Federal and Provincial Environmental Regulations.

* * * Section 14 - Transportation Information * * *

US DOT Information: CHEMICALS N.O.I., NOT D.O.T. REGULATED

Marine Pollutant: No

IMDG Classification: None

IATA Classification: None

The data provided in this section is for information only and may not be specific for the package size or mode of transportation. See package label for further details.

* * * Section 15 - Regulatory Information * * *

US Federal Regulations

A: General Product Information

No additional information available.

B: Component Analysis

This material may contain chemicals, requiring identification under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

HAZARDOUS COMPONENT	CERCLA RQ LBS.	SECT 302 TPQ LBS.	SECT 313* TOXIC	Maximum %
Ammonium Sulfate	N.A.	N.A.	Yes	40
Sodium Nitrite	100	N.A.	Yes	10

Sara 311/312 Hazards:

Immediate (Acute)	TRUE
Chronic*	FALSE
Fire	FALSE
Sudden Release-of-Pressure	FALSE
Reactive	FALSE

State Regulations

A: General Product Information

No additional information available.

Other Regulations

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

B: Component Analysis - Inventory

* * * Section 16 - Other Information * * *

Revision Date:

Rev. 1, June 1, 2015

Product Trade Name: **BA-TREAT** **ID:** BATREA

Key/Legend:

ACGIH =	American Conference of Governmental Industrial Hygienists	NFPA =	National Fire Protection Association
CERCLA =	Comprehensive Environmental Response, Compensation and Liability Act	NIOSH =	National Institute for Occupational Safety and Health
EPA =	Environmental Protection Agency	NTP =	National Toxicology Program
HMIS =	Hazardous Material Identification System	OSHA =	Occupational Safety and Health Administration
IARC =	International Agency for Research on Cancer	SARA =	Superfund Amendments and Reauthorization Act
MSHA =	Mine Safety and Health Administration	TSCA =	Toxic Substance Control Act

The information presented herein is believed to be factual as it has been derived from the works and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which Heatbath Corporation bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

This is the end of SDS for BA-TREAT.

Safety Data Sheet

Product Trade Name: AAA QUENCH OIL **ID:** AAAQUOIL

* * * Section 1 - Chemical Product and Company Identification * * *

Product Trade Name: **AAA QUENCH OIL**

Manufacturer Information

Heatbath Corporation
P.O. Box 51048
Indian Orchard, MA 01151-5048

Contact Phone: (413) 452-2000
8:00 AM - 5:00 PM

CHEMTREC Emergency Phone: (800) 424-9300
24 Hours

CHEMTREC International: (703) 527-3887

Recommended Use: Heat treating quench oil

Restrictions on Use: See Incompatibility, Section 10

* * * Section 2 - Hazards Identification * * *

OSHA Hazard Communication Standard: Considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Not classified as Dangerous Goods for transport purposes.

Hazard Classification: Aspiration Hazard Category 1 | Eye Irritation Category 2B | STOT - SE (Narcosis) Category 3

Labeling:

Signal Word: DANGER!

Hazard Statements: May be fatal if swallowed and enters airways. Causes eye irritation. May cause drowsiness or dizziness.

PREVENTION: Obtain special instructions before use. Wear protective gloves/protective clothing/eye protection/face protection.

FIRST AID/IN CASE OF FIRE: IF exposed or concerned: Get medical advice/ attention.

STORAGE: Store locked up.

DISPOSAL: Dispose of contents/container in accordance with all local, regional, national and/or international regulations.

Hazards Not Otherwise Classified: N.A.

Percent of Ingredients of Unknown Toxicity: N.A.

* * * Section 3 - Composition / Information on Ingredients * * *

HAZARDOUS INGREDIENT	CAS #	PERCENT
PARAFFINIC DISTILLATE LIGHT SOLVENT-REFINED (MILD)	64741-89-5	70 - 90% (T.S.)
PARAFFINIC DISTILLATE HEAVY HYDROTREATED (MILD)	64742-54-7	1 - 10% (T.S.)

T.S. = Trade Secret
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Component Related Regulatory Information: This product may be regulated, have exposure limits or other information identified.

* * * Section 4 - First Aid Measures * * *

If this product comes in contact with eyes: Wash out immediately with water. If irritation continues, seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. If skin or hair contact occurs: Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation. For thermal burns: Decontaminate area around burn. If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary. If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus. If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

* * * Section 5 - Fire Fighting Measures * * *

Flash Point: 335 F
Flammable Limits: N.E.
Upper Flammable Limit N.E.
Lower Flammable Limit N.E.

Extinguishing Media, PPE and Guidance for FireFighter: Foam. Dry chemical powder. BCF (where regulations permit). Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result. Alert Fire Department and tell them location and nature of hazard. Wear full body protective clothing with breathing apparatus. Prevent, by any means available, spillage from entering drains or water course.

Fire and Explosion Hazards: Combustible. Slight fire hazard when exposed to heat or Flammables. Heating may cause expansion or decomposition leading to violent rupture of containers.

Decomposition Products: Carbon dioxide, carbon monoxide, various hydrocarbons under thermal decomposition.

* * * Section 6 - Accidental Release Measures * * *

Containment and Clean up procedures must be conducted in accordance with all local, state, and federal regulations.

Containment and Clean-Up Procedures: Slippery when spilt. Remove all ignition sources. Clean up all spills immediately. Clear area of personnel and move upwind. Alert Fire Department and tell them location and nature of hazard. Wear full body protective clothing with breathing apparatus.

* * * Section 7 - Handling and Storage * * *

Handling and Storage Procedures: Containers, even those that have been emptied, may contain explosive vapors. Do NOT cut, drill, grind, weld or perform similar operations on or near containers. Electrostatic discharge may be generated during pumping - this may result in fire. Store in original containers. Keep containers securely sealed. No smoking, naked lights or ignition sources. CARE: Water in contact with heated material may cause foaming or a steam explosion with possible severe burns from wide scattering of hot material. Resultant overflow of containers may result in fire. Avoid reaction with oxidizing agents Avoid water contamination. Emptied containers of this product may contain hazardous vapors and residue. Clean thoroughly before reusing or discarding. Do not use a welding torch to cut container. Do not use for water or food storage.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Exposure Guidelines:

A. General Product Information: Follow all applicable exposure limits. Keep formation of airborne mists to a minimum.

B. Component Exposure Limits:

CAS #	HAZARDOUS INGREDIENT	OSHA PEL(mg/m3)	ACGIH TLV(mg/m3)
64741-89-5	PARAFFINIC DISTILLATE LIGHT SOLVENT REFINED (MILD)	5	5
64742-54-7	PARAFFINIC DISTILLATE HEAVY HYDROTREATED (MILD)	5	5

*OSHA-PEL and ACGIH-TLV are 8-Hour TWA unless otherwise noted.
*per CFR 29, Part 1910.1200; ingredients listed only if deemed hazardous and comprise 1% or greater of the composition (0.1% or greater for carcinogens).

Engineering Controls: Set up ventilation to effectively remove and prevent buildup of any dust, vapor or mist generated from the handling of this product.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face Protective Equipment: Wear appropriate eye protection to prevent eye contact.

Skin Protection: Wear appropriate personal protective clothing to prevent skin contact. The worker should immediately wash the skin when it becomes contaminated. Remove wet or significantly contaminated work clothing and replace.

Respiratory Protection: If ventilation is not sufficient to effectively prevent buildup of dust, mists or vapors, provide appropriate NIOSH/MSHA respiratory protection.

Personal Protective Equipment: Provide eyewash fountains in areas where there is any possibility that workers could be exposed to the substance; this is irrespective of the recommendation involving the wearing of eye protection.

Provide facilities for quickly drenching the body within the immediate work area for emergency use where there is a possibility of exposure. Depending on the specific circumstances, a deluge shower, a sink or hose could be considered adequate.

* * * Section 9 - Physical & Chemical Properties * * *

Physical State: Liquid
Color: Amber color liquid, oil odor.
pH: Not Available
Specific Gravity: 0.86
Evaporation Rate: N.E.
Solubility Water: insoluble.
Vapor Density: N.E.
Vapor Pressure: N.E.
Octanol-Water Coefficient: N.E.

Boiling Point: N.E.
Melting Point: Not Available
Flash Point: 340 F (168 C)
Auto-Ignition Temperature: N.E.
Decomposition Temperature: N.E.
Flammability Limits - Low: N.E.
Hi: N.E.

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability: Unstable in the presence of incompatible materials. Product is considered stable.

Conditions to Avoid: Temps >340 °F

Incompatibility: Strong oxidizers.

Decomposition Products: See section 5

Hazardous Polymerization: Will not occur.

* * * Section 11 - Toxicological Information * * *

Route of Exposure: eye/skin contact, inhalation, ingestion.

Acute Toxicity:

A: General Product Information

Eye Contact: Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterized by tearing or conjunctival redness (as with windburn). Direct eye contact with petroleum hydrocarbons can be painful, and the corneal epithelium may be temporarily damaged. Aromatic species can cause irritation and excessive tear secretion.

Skin Contact: The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis. The material is unlikely to produce an irritant dermatitis as described in EC Directives . The material may accentuate any pre-existing dermatitis condition Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

Skin Absorption: No information available for this product.

Ingestion: The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. Ingestion of petroleum hydrocarbons can irritate the pharynx, esophagus, stomach and small intestine, and cause swellings and ulcers of the mucous. Symptoms include a burning mouth and throat; larger amounts can cause nausea and vomiting, narcosis, weakness, dizziness, slow and shallow breathing, abdominal swelling, unconsciousness and convulsions.

Inhalation: The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Inhalation hazard is increased at higher temperatures. Inhalation of vapors may cause drowsiness and dizziness.

Chronic Hazards: Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Constant or exposure over long periods to mixed hydrocarbons may produce stupor with dizziness, weakness and visual disturbance, weight loss and anemia, and reduced liver and kidney function. Skin exposure may result in drying and cracking and redness of the skin.

Carcinogenicity:

a: Component Carcinogenicity:

None.

NTP:	No.	**IARC:**	No.
OSHA:	No.		

Reproductive/Genetic/Developmental Effects: No information available.

* * * Section 12 - Ecological Information * * *

Ecotoxicity:

A: General Product Information

No information available for this product.

B. Component Analysis - Ecotoxicity - Aquatic Toxicity:

No information available for this product.

Product Trade Name: **AAA QUENCH OIL** **ID:** AAAQUOIL

Persistence and Mobility: No information available for this product

Environmental: for lubricating oil base stocks: Vapor Pressure Vapor pressures of lubricating base oils are reported to be negligible. In one study, the experimentally measured vapor pressure of a solvent-dewaxed heavy paraffinic distillate base oil was 1.7 x 10exp-4 Pa . Since base oils are mixtures of C15 to C50 paraffinic, naphthenic, and aromatic hydrocarbon isomers, representative components of those structures were selected to calculate a range of vapor pressures. The estimated vapor pressure values for these selected components of base oils ranged from 4.5 x 10exp-1 Pa to 2 x 10exp-13Pa.

Mobility in Soil: No information available.

* * * Section 13 - Disposal Considerations * * *

Wastes must be tested using methods described in 40 CFR Part 261. It is the generator's responsibility to determine if the waste meets applicable definitions of hazardous wastes. State and local regulations may differ from Federal disposal regulations. Dispose of waste material according to Local, State, Federal and Provincial Environmental Regulations.

* * * Section 14 - Transportation Information * * *

US DOT Information: OIL, LUBRICATING N.O.I., NOT D.O.T. REGULATED

Marine Pollutant: No

IMDG Classification: None

IATA Classification: None

The data provided in this section is for information only and may not be specific for the package size or mode of transportation. See package label for further details.

* * * Section 15 - Regulatory Information * * *

US Federal Regulations

A: General Product Information

No additional information available.

B: Component Analysis

This material may contain chemicals, requiring identification under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

HAZARDOUS COMPONENT	CERCLA RQ LBS.	SECT 302 TPQ LBS.	SECT 313* TOXIC	Maximum %
No CERCLA or SARA 313 components				

Sara 311/312 Hazards:	**Immediate (Acute)**	TRUE
	Chronic*	TRUE
	Fire	FALSE
	Sudden Release-of-Pressure	FALSE
	Reactive	FALSE

State Regulations

A: General Product Information

No additional information available.

Other Regulations

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

B: Component Analysis - Inventory

* * * Section 16 - Other Information * * *

Revision Date:
Rev. 1, June 1, 2015

Key/Legend:

ACGIH =	American Conference of Governmental Industrial Hygienists	NFPA =	National Fire Protection Association
CERCLA =	Comprehensive Environmental Response, Compensation and Liability Act	NIOSH =	National Institute for Occupational Safety and Health
EPA =	Environmental Protection Agency	NTP =	National Toxicology Program
HMIS =	Hazardous Material Identification System	OSHA =	Occupational Safety and Health Administration
IARC =	International Agency for Research on Cancer	SARA =	Superfund Amendments and Reauthorization Act
MSHA =	Mine Safety and Health Administration	TSCA =	Toxic Substance Control Act

The information presented herein is believed to be factual as it has been derived from the works and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which Heatbath Corporation bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

This is the end of SDS for AAA QUENCH OIL.

GRIT

GMA INDUSTRIES

Safety Data Sheet

According to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS
Revision Date: 06.01.2015

Section 1 – Identification

1.1 Product Identifier:
Trade Name: Vblast Brown Fused Aluminum Oxide

1.2 Relevant Identified Uses of The Substance or Mixture and Uses Advised Against
Identified Use(s) Consult the Supplier

1.3 Details of the Supplier of the Safety Data Sheet
Manufacturer/Supplier
GMA Industries, Inc
38127 Ecorse Rd
Romulus, MI 48174
Phone: (734) 595-7300

1.4 Emergency Telephone Number:
ChemTel INC (800) 255-3924

Section 2 – Hazards Indentification

2.1 Classification on the substance or mixture
Classification according to Regulation (EC) No 1272/2008
The following Hazard Statements are applicable only according to OSHA regulations within the United States. These Statements are not applicable for the CLP regulation (1272/2008/EC) in the EU: H351


Health Hazard
Carc. 2 H351 Suspected of causing cancer

Classification according to Directive 67/548/EEC or Directive 199/45/EC Not applicable

Information concerning particular hazards for human and environment:
The product doesn't have to be labeled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Classification System:
The classification is according to the latest editions of the EU-list, and extended by company and literature data.
The classification is in accordance with the latest editions of international substances list, and is supplemented by information from technical literature and by information provided by the company

2.2 Label Elements

Labeling ***According to Regulation (EC) No 1272/2008 (CLP)***
The substance is classified and labeled according to the Globally Harmonized System within the United States (GHS)
This product doesn't have a classification according to the CLP regulation
This product is classified and labeled according to the CLP regulation

Hazard Pictograms(S)  Not applicable within the EU; applicable only for North America

Signal Word(s) **WARNING** Not applicable within the EU; applicable only for North America

Hazard-determining components of labeling:
Titanium Dioxide

Hazard Statements
The following Hazard Statements are applicable only according to OSHA regulations within the United States. These statements are not applicable for the CLP regulation (1272/2008/EC) in the EU: H351. H351 Suspected of causing cancer.

Precautionary Statements
Applicable only within the United States (USA)

P281	Use personal protective equipment as required
P202	Do not handle until all safety precautions have been read and understood
P308+P313	IF exposed or concerned: Get medical advice/attention
P501	Dispose of contents/container in accordance with local/regional/national/international regulations

Hazard Description
WHMIS-symbols: Not Hazardous under WHMIS
NFPA Rating: (scale 0-4)

Health = 1
Fire = 0
Reactivity = 0

HMIS-ratings: (scale 0-4)

HEALTH	1
FIRE	0
REACTVITY	0

Health = 1
Fire = 0
Reactivity = 0

HMIS Long Term Health Hazard Substances 13463-67-7 Titanium Dioxide
2.3 Other Hazards
Results of PBT and vPvB Assessment
PBT: Not Applicable
vPvB: Not Applicable

Section 3 – Composition/Information on Ingredients

3.2 Mixtures
Descriptions: Mixture of substances listed below with nonhazardous additions

Hazardous Ingredient(s)	% W/W	CAS No.	EC No.	REACH Registration No	Hazard Pictogram(s) and Hazard Statement(s)
Aluminum Oxide	>90	1344-38-1	215-691-6	NA	NONE Substance with a Community workplace exposure limit
Silicon Fused	<5	7631-86-9	231-545-4	NA	NONE Substance with a Community workplace exposure limit
Titanium Dioxide	<5	13463-67-7	236-675-5	NA	NONE Substance with a Community workplace exposure limit
Iron Oxide	<5	1309-37-1	215-168-2	NA	NONE Substance with a Community workplace exposure limit

Dangerous Components (Alternative Classifications):

Hazardous Ingredient(s)	% W/W	CAS No.	EC No.	REACH Registration No	Hazard Pictogram(s) and Hazard Statement(s)
Titanium Dioxide	<5	13463-67-7	236-675-5	NA	 3.6/2 H351

3.3 Additional Information: For the wording of the listed risk phrases refer to section 16

Section 4 – First Aid Measures

4.1 Description of first aid measures
General Information: No Special measures required
After Inhalation:
Supply fresh air; consult doctor in case of complaints
Provide oxygen treatment if affected person has difficulty breathing
After skin contact:
Immediately remove contact lenses if possible

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing:
Rinse out mouth and then drink plenty of water
Do Not induce vomiting; call for medical help immediately
4.2 Most important symptoms and effects, both acute and delayed
Coughing
Breathing difficulty
Gastric or intestinal disorders
Hazards Danger of impaired breathing
4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available

Section 5 – Firefighting Measures

5.1 Extinguishing Media
Suitable Extinguishing Agents: Use fire extinguishing methods suitable for surrounding conditions
For safety reasons unsuitable extinguishing agents: NONE
5.2 Special hazards arising from the substance or mixture: No further relevant information available
5.3 Advice for firefighters: Wear self-contained respiratory protective device; Wear fully protective suit
Additional Information: No Further relevant information available.

Section 6 – Accident Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures
Use respiratory protective device against the effects of fumes/dust/aerosol
For large spills, wear protective clothing
Avoid formation of dust
Ensure adequate ventilation
6.2 Environment precautions: No special measures required
6.3 Methods and material for containment and cleaning up:
Pick up mechanically
Send for recovery or disposal in suitable receptacles
Dispose contaminated material as waste according to item 13
6.4 Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment
See Section 13 for disposal information

Section 7 – Handling and Storage

7.1 Precautions for Safe Handling
Prevent formation of dust
Any unavoidable deposit of dust must be regularly removed.
Do Not dry clean dust covered objects and floors. Wash thoroughly with plenty of water.
Use only in well ventilated areas
Avoid breathing dust
Information about fire and explosion protection: No special measures required.
7.2 Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles: No special requirements
Information about storage in one common storage facility:
Store away from foodstuffs. Store away form oxidizing agents
Further information about storage conditions:
Store in cool, dry conditions in well sealed receptacles.
Store receptacle in a well ventilated area.
This product is hygroscopic.
7.3 Specific end use(s): No further relevant information available

Section 8 – Exposure Controls/Personal Protections

8.1 Control Parameters

Ingredients with limit values that require monitoring at the workplace:

Additional Information: The lists valid during the making were used as basis.

Aluminum Oxide	1344-28-1	PEL (USA)	Long-term value: 15*, 15** mg/m^3 *Total dust, ** Respirable faction
		REL (USA)	Long-term value: 10* 5*mg/m^3 As Al* Total Dust **Respirable/pro powd/welding
		TLV (USA)	Long-term value: 1* mg/m^3 As AL; *as repirable fraction
		EL (CANADA)	Long-term value: 10 mg/m^3 respirable, as Al
		EV (CANADA)	Long-term value: 10 mg/m^3 Total dust
Silicon Fused	60678-86-0	PEL (USA)	See Quartz listing
		TLV (USA)	TLV withdrawn
		EV (CANADA)	Long-term value: 10 mg/m^3 respirable
Titanium Dioxide	13463-67-7	PEL (USA)	Long-term value: 15* mg/m^3 *Total dust
		REL (USA)	See Pocket Guide App. A
		TLV (USA)	Long-term value: 10 mg/m^3 withdrawn from NIC
		EL (CANADA)	Long-term value: 10* 3** mg/m^3 *total dust; **respirable faction; IARC 2B
		EV (CANADA)	Long-term value: 10 mg/m^3 Total dust
Iron Oxide	1309-37-1	PEL (USA)	Long-term value: 10* 15** 5*** mg/m^3 * Fume; Rouge: ** Total Dust, ***respirable
		REL (USA)	Long-term value: 5mg/m^3 Dust & fume, as Fe
		TLV (USA)	Long-term value: 5* mg/m^3 *as respirable fraction
		EL (CANADA)	Short-term value: 10** mg/m^3 Long-term value: 5* 10*** 3**** mg/m^3 *dust & fume **fume; Rouge: ***total dust ****resp.
		EV (CANADA)	Long-term value: 5* 10** mg/m^3 *respirable, including Rouge; **total dust

8.2 Exposure Controls

Personal Protective Equipment

General Protective and Hygienic Measures:

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Avoid close or long-term contact with the skin.

Do not inhale dust/smoke/mist.

Respiratory Protection:

Suitable respiratory protective device recommended.

Use suitable respiratory protective device in case of insufficient ventilation.

For spills, respiratory protection may be advisable.
Particulate mask should filter at least 99% of airborne particles.

Protection of Hands:

Wear gloves for the protection against mechanical hazards according to NIOSH or EN 388.
Gloves are advised for repeated or prolonged contact.
The glove material has to be impermeable and resistant to the product/the substance/the preparation.

Material of Gloves:

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Eye Protection:

Safety Glasses

Body Protection:

Not required under normal conditions of use.
Protection may be required for spills.

Limitation and supervision of exposure into the environment: No special requirements.

Risk management measures No special requirements.

Section 9 – Physical and Chemical Properties

9.1 Information on Basic Physical And Chemical Properties

Appearance:	Solid Granular Product	Color:	Brown
Odor:	Odorless	Odor Threshold:	Not Determined
Melting Point (°C)/ Freezing Point (°C):	Not Available	Boiling Point/ Boiling Range (°C):	Not Available
Flash Point (°C):	No Data	Explosive Limit Ranges:	Not Available
Auto Ignition Temp (°C):	Not Available	Decomposition Temp (°C):	Not Determine
Explosive Properties:	None	Oxidizing Properties:	Not Available
Flammability (Solid, Gas):	Not Available	Ph(value):	Not Available
Evaporation Rate:	N/A	Vapor Pressure (mm Hg):	Not Available
Vapor Density (Air=1):	N/A	Density (g/ml):	Not Available
Solubility (Water):	Insoluble	Solubility (Other):	Not Available
Partition Coefficient (N-Octanol/water):	Not available	Viscosity (mPa.s)	Not Available

9.2 Other Information: No further relevant information available.

Section 10 – Stability and Reactivity

10.1 Reactivity

10.2 Chemical Stability

Thermal decomposition/conditions to be avoided: No decomposition if used and stored according to specifications

10.3 Possibility of Hazardous Reactions

Reacts with strong acids.
Reacts with oxidizing agents.
Reacts with strong alkali.

10.4 Conditions to avoid: No further relevant information available.

10.5 Incompatible materials: No further relevant information available.

10.6 Hazardous Decomposition Products: Toxic metal oxide smoke.

Section 11 – Toxicological Information

11.1 Information on Toxicological Effects

Acute Toxicity:

Primary irritant Effect:

On the Skin: No irritant effect.

On the Eye: Slight irritant effect on eyes.

Sensitisation: No sensitising effects known.

Repeated Dose Toxicity: May cause damage to organs through prolonged or repeated exposure.
CMR Effects (carcinogenity, mutagenicity and toxicity for reproduction): Based on IARC classifications and not the CLP classification. Carc. 2

Section 12 – Ecological Information

12.1 Toxicity
Aquatic Toxicity: General not hazardous for water
12.2 Persistence and Degradability
Inorganic product is not eliminable from water by means of biological cleaning processes.
12.3 Bioaccumulative Potential: Does Not accumulate in organisms.
12.4 Mobility in Soil: No further relevant information available.
12.5 Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
12.6 Other Adverse Effects: No further relevant information available.

Section 13 – Disposal Considerations

13.1 Waste Treatment Methods
Recommendation
Smaller quantities can be disposed of with household waste.
Can be reused after reprocessing.
Contact waste processors for recycling information.
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.
Uncleaned Packaging:
Recommendation: Disposal must be made according to official regulations

Section 14 – Transportation Information

14.1 UN-Number	
DOT,ADRADN,IMDG,IATA	Not Regulated
14.2 UN Proper Shipping Name	
DOT,ADR,ADN,IMDG,IATA	Not Regulated
14.3 Transport hazard class(es)	
DOT,ADR,ADN,IMDG,IATA	Not Regulated
14.4 Packing Group	
DOT,ADR,IMDG,IATA	Not Regulated
14.5 Environmental Hazards:	
Marine Pollutant:	No
14.6 Special Precautions for User	Not Applicable
14.7 Transport in Bilk According to Annex II of MARPOL73/78 and the IBC Code:	Not Applicable
UN "Model Regulation"	

Section 15 – Regulatory Information

15.1 Safety, Health and Environmental Regulations/Legislation specific for the Substance or Mixture
United States (USA)
SARA
Section 355 (extremely hazardous substances): None of the ingredients are listed.
Section 313 (specific toxic chemical listing): None of the ingredients are listed,
TSCA (Toxic Substances Control Act): All ingredients are listed.

Proposition 65 (California):
Chemicals known to cause cancer: 13463-67-7 Titanium Dioxide
Chemicals know to cause reproduction toxicity for females: None of the ingredients are listed

Chemicals know to cause reproduction toxicity for males: None of the ingredients are listed
Chemicals known to cause developmental toxicity: None of the ingredients are listed
Carcinogenic Categories
EPA (Environmental Protection Agency): None of the ingredients are listed
IARC (International Agency for Research on Cancer): 13463-67-7 Titanium Dioxide 2B
TLV (Threshold Limit Value established by ACGIH): 1344-28-1 Aluminum Oxide 13463-67-7 Titanium Dioxide A4
NIOSH-CA (National Institute of Occupational Safety and Health): 13463-67-7 Titanium Dioxide
Canada
Canadian Domestic Substances List (DSL): All ingredients are listed.
Canadian Ingredient Disclosure list (limit 0.1%): None of the ingredients are listed.
Canadian Ingredient Disclosure list (limit 1%):
1344-28-1 Aluminum Oxide
7631-86-9 Silicon dioxide, chemically prepared
Other regulations, limitations and prohibitive regulations
This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.
Substances of very high concern (SVHC) according to REACH, Article 57: None of the ingredients are listed
15.2 Chemical Safety Assessment: A Chemical Safety Assessment has not been carried out.

Section 16 – Other Information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
Additional Information:

- The accumulation of airborne dust particles may lead to health and safety risks in some cases. The uses of good industrial practices with mitigate this risk.
- The health risks from inhalation of dust particles vary; this is due to particle concentration, exposure length, number of exposures and type of particles inhaled. Please read Section 2,4,6,7 and 8 of the SDS to understand these potential risks. Wear personal protective equipment and follow storage and handling procedures to maintain a safe workplace.
- In rare instances, combustible dusts may represent a potential explosion hazard when airborne. This hazard is often associated with organic dust such as foodstuffs and coal, but may also occur with mineral products.

Relevant Phrases
H351 Suspected of causing cancer.
Abbreviations and Acronyms:
ADR: Accord europeen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labeling of Chemicals
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstract Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Material Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

Sources:
ChemTel Inc,
1305 North Florida Avenue

GRIT

SAFETY DATA SHEET

Prepared in accordance with
OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200(g))

Metaltec Steel Abrasive Co.

Section 1. Product Information and Company Identification

Product:	High Carbon Cast Steel Grit
	Cast Steel Grit
Product Use:	Steel Abrasive Blasting
Company:	Metaltec Steel Abrasive Company
	41155 Joy Road
	Canton, MI 48187
	USA
Phone:	734-459-7900
Fax:	734-459-7907
Emergency Phone:	734-459-7900

Section 2. Hazards

This product is chemically inert and does not pose any specific risk to people or the environment. This product does not contain any radioactive elements. Compounds, processing conditions and products that are created during use can be hazardous. Ensure that the proper instructions have been issued and that all precautions for working with steel shot have been met.

Section 3. Chemical Composition

Element	Concentration	CAS
C	0.80-1.20%	7440-44-0
Mn	0.60-1.20%	7439-96-5
Si	0.40-1.00%	7440-21-3
Fe	>96.00%	1309-37-1
P	0.035% max	7723-14-0
S	0.035% max	7704-34-9

Section 4. First Aid Measures

Eye Contact:	Flush with running water to remove particles. Seek additional medical attention if necessary.
Skin Contact:	Brush off excess dust, wash area with soap and water.
Inhalation:	Remove to fresh air. Seek medical attention
Ingestion:	Seek medical help if large quantities of material have been ingested.

Section 5. Fire-fighting Strategies

These products are non-flammable and do not react to the use of water or other materials used for extinguishing fire. Fine metal dust that is created as a waste stream and/or contaminants that are removed during use may pose a risk of fire or explosion.

Section 6. Accidental Release Measures

Cast Steel Grit spilled or leaked onto floors can cause hazardous walking conditions. Spills or leaks should be vacuumed or swept from working areas. When cleaning up large quantities of dust, a NIOSH approved respirator should be worn. Spilled Cast Steel Grit can be reused or disposed of as a non-hazardous waste. Collected dust from blast cleaning always contain contaminants from the surface of the parts being processed, and therefore the dust may be classified as a hazardous waste and, as such, must be disposed of according to appropriate Local, State or Federal regulations.

Section 7. Handling and Storage

Store material away from incompatible materials and keep dust away from sources of ignition. Keep dry to reduce rusting. Observe maximum floor loading limitations.

Section 8. Exposure Controls/Personal Protection

Ventilation:	General and local exhaust ventilation should be provided.
Respiratory Protection:	NIOSH approved respirator should be worn.
Eye Protection:	Approved safety glasses with side shields should be worn at all times. Safety eyewash stations should be provided in close proximity to the work area.
Other Protection Equipment:	None required.

Section 9. Physical and Chemical Properties

Melting Point:	1371- 1482C	Vapor Pressure:	not applicable
Evaporation Rate:	not applicable	Vapor Density:	not applicable
Boiling Point:	2850 - 3150C	% Solid by Weight:	100%
Solubility in Water:	not applicable	pH:	not applicable
Flash Point:	not applicable	Auto Ignition Temp	930C
Appearance and Odor:	Steel Grit is irregular in shape and light gray to silver in color.		
	Cast Steel Grit will not burn or explode		

Section 10. Stability and Reactivity

Under normal working conditions, the product is stable and does not present any danger for hazardous reactions to occur.

Section 11. Toxicological Information

Primary Routes of Entry: Inhalation of dust or fumes created during use, or dust particulate in eyes.

Overexposure to dust containing the component elements of cast steel grit may cause skin, nose, mouth, and eye irritation.

Section 12. Ecological Information

Hazardous Decomposition Products: None

Cast Steel Grit will wear away at a controlled rate through normal use.

Section 13. Disposal Considerations

Spilled Cast Steel Grit can be reused or disposed of as a non-hazardous waste. Collected dust from blast cleaning always contain contaminants from the surface of the parts being processed, and therefore the dust may be classified as a hazardous waste and, as such, must be disposed of according to appropriate Local, State or Federal regulations.

Section 14. Transport Information

No special conditions apply.

Section 15. Regulatory Information

No regulations apply.

Section 16. Other Information

The company has no control over this product or its use after it leaves our facility. The Company assumes no liability for loss or damage from the proper or improper use of this product. The information presented here has been compiled from sources considered to be reliable and accurate to the best of our knowledge and belief, but is not guaranteed to be so.

HWI
HarbisonWalker International

SAFETY DATA SHEET

CASTABLE

1. Identification

Product identifier KS-4V PLUS; KS-4V PLUS WF

Other means of identification

Brand Code 5908, 5909

Recommended use For Industrial Use Only

Recommended restrictions Users should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

Manufacturer/Supplier information

Manufacturer

Company name HarbisonWalker International

Address 1305 Cherrington Parkway, Suite 100
Moon Township, Pennsylvania 15108 US

Telephone General Phone: 412-375-6600

Website www.thinkHWI.com

Emergency phone number CHEMTREC 24 HOUR EMERGENCY # 1-800-424-9300

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards

Carcinogenicity	Category 1A
Specific target organ toxicity, repeated exposure	Category 2

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement May cause cancer. May cause damage to organs through prolonged or repeated exposure.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/mist. Wear protective gloves/protective clothing/eye protection.

Response If exposed or concerned: Get medical advice/attention.

Storage Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information Users should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Overexposure to the respirable dust of crystalline silica (quartz or cristobalite, less than or equal to 5 microns in size) may lead to silicosis in humans, which is a progressive and irreversible lung disease. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Mullite		1302-93-8	40 - 60
Cement, Alumina, Chemicals		65997-16-2	20 - 40
Cristobalite		14464-46-1	10 - 20
Kaolin		1332-58-7	1 - 2.5
Silicon Dioxide		7631-86-9	1 - 2.5
Quartz (SiO2)		14808-60-7	0.1 - 1
Titanium Dioxide		13463-67-7	0.1 - 1
Other components below reportable levels			2.5 - 10

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact Rinse with water. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information If concerned: Get medical advice. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media Not available.

Specific hazards arising from the chemical Not applicable.

Special protective equipment and precautions for firefighters Not available.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Stop the flow of material, if this is without risk. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

Environmental precautions Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Do not breathe dust. Avoid prolonged exposure. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Kaolin (CAS 1332-58-7)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
Titanium Dioxide (CAS 13463-67-7)	PEL	15 mg/m3	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Cristobalite (CAS 14464-46-1)	TWA	0.15 mg/m3	Total dust.
		0.05 mg/m3	Respirable.
		1.2 mppcf	Respirable.
Quartz (SiO2) (CAS 14808-60-7)	TWA	0.3 mg/m3	Total dust.
		0.1 mg/m3	Respirable.
		2.4 mppcf	Respirable.
Silicon Dioxide (CAS 7631-86-9)	TWA	0.8 mg/m3	
		20 mppcf	

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Cristobalite (CAS 14464-46-1)	TWA	0.025 mg/m3	Respirable fraction.
Kaolin (CAS 1332-58-7)	TWA	2 mg/m3	Respirable fraction.
Mullite (CAS 1302-93-8)	TWA	1 mg/m3	Respirable fraction.
Quartz (SiO2) (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.
Titanium Dioxide (CAS 13463-67-7)	TWA	10 mg/m3	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Cristobalite (CAS 14464-46-1)	TWA	3 fibers/cm3	Fiber.
		3 fibers/cm3	Dust.
		5 mg/m3	Fiber, total
		5 mg/m3	fibers, total dust
Kaolin (CAS 1332-58-7)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Total
Quartz (SiO2) (CAS 14808-60-7)	TWA	0.05 mg/m3	Respirable dust.
Silicon Dioxide (CAS 7631-86-9)	TWA	6 mg/m3	

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection If contact is likely, safety glasses with side shields are recommended.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Use of an impervious apron is recommended.

Respiratory protection Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Solid.
Form	Solid
Color	Not available.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Incompatibility is based strictly upon potential theoretical reactions between chemicals and may not be specific to industrial application exposure. Contact your sales representative for clarification.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.

Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity	Not available.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. May cause cancer. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

IARC Monographs. Overall Evaluation of Carcinogenicity

Cristobalite (CAS 14464-46-1)	1 Carcinogenic to humans.
Quartz (SiO2) (CAS 14808-60-7)	1 Carcinogenic to humans.
Silicon Dioxide (CAS 7631-86-9)	3 Not classifiable as to carcinogenicity to humans.
Titanium Dioxide (CAS 13463-67-7)	2B Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Cristobalite (CAS 14464-46-1)	Known To Be Human Carcinogen. Reasonably Anticipated to be a Human Carcinogen.
Quartz (SiO2) (CAS 14808-60-7)	Known To Be Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

Hazardous waste code Not applicable.

Waste from residues / unused products Not available.

Contaminated packaging Not available.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All chemical substances in this product are listed on the TSCA chemical substance inventory where required.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - No
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

Cristobalite (CAS 14464-46-1)

Kaolin (CAS 1332-58-7)
Quartz (SiO2) (CAS 14808-60-7)
Silicon Dioxide (CAS 7631-86-9)
Titanium Dioxide (CAS 13463-67-7)

US. New Jersey Worker and Community Right-to-Know Act

Cristobalite (CAS 14464-46-1)
Kaolin (CAS 1332-58-7)
Quartz (SiO2) (CAS 14808-60-7)
Silicon Dioxide (CAS 7631-86-9)
Titanium Dioxide (CAS 13463-67-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Cristobalite (CAS 14464-46-1)
Kaolin (CAS 1332-58-7)
Quartz (SiO2) (CAS 14808-60-7)
Silicon Dioxide (CAS 7631-86-9)
Titanium Dioxide (CAS 13463-67-7)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Quartz (SiO2) (CAS 14808-60-7)	Listed: October 1, 1988
Titanium Dioxide (CAS 13463-67-7)	Listed: September 2, 2011

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	03-31-2015
Version #	01
Disclaimer	This information is based on our present knowledge on creation date. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
Revision Information	Product and Company Identification: Product Codes

SAFETY DATA SHEET

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Name BALLOTINI IMPACT BEADS

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified use(s) Impact abrasive

1.3 Details of the supplier of the safety data sheet

Company Identification
Potters Industries LLC
P. O. Box 841
Valley Forge, PA 19482 USA

Telephone +1 610-651-4200

E-Mail (competent person) sds.uk@pqcorp.com

1.4 Emergency telephone number

Emergency Phone No. Potters Industries LLC +1 610-651-4200
ChemTrec (800) 424-9300

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification Not classified as dangerous for supply/use.

EC Classification Not classified as dangerous for supply/use.

Hazards summary Dust may cause irritation. Spilled material is slippery . When used for abrasive blasting, this material can rebound or fragment into sharp particles which are hazardous to the eyes and skin. Noise is a major hazard in abrasive blasting processes. Abrasive blasting can generate heat, sparks, and static electrical charge.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient(s)	%W/W	CAS No.	EINECS No. / REACH Registration	EC Classification and Risk Phrases
Glass oxide; Glass	100	65997-17-3	2660460	Not applicable.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Eye Contact Irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 15 minutes. If symptoms persist, obtain medical attention.

Skin Contact Wash affected skin with plenty of water. If symptoms occur obtain medical attention.

Inhalation In case of accident by inhalation: remove casualty to fresh air and keep at rest. If symptoms develop, obtain medical attention.

Ingestion Do not induce vomiting. Get immediate medical advice/attention.

4.2 Most important symptoms and effects, both acute and delayed Dust may cause irritation. Spilled material is slippery . Dust may cause discomfort and mild irritation.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing Media	As appropriate for surrounding fire.
Unsuitable extinguishing Media	None known.
5.2 Special hazards arising from the substance or mixture	Non-combustible.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures	Wear suitable protective clothing. Wear eye/face protection.
6.3 Methods and materials for containment and cleaning up	Caution - spillages may be slippery. Avoid generation of dust. Sweep or preferably vacuum up and collect in suitable containers for recovery or disposal.
6.4 Reference to other sections	Not applicable.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling	Avoid contact with eyes, skin and clothing. Avoid generation of dust. Wash thoroughly after handling. Wear protective equipment to comply with good occupational hygiene practice. Do not eat, drink or smoke at the work place.
7.2 Conditions for safe storage, including any incompatibilities	Keep container tightly closed and dry.
7.3 Specific end use(s)	Not applicable.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

SUBSTANCE.	Occupational Exposure Limits
Glass oxide; Glass	No Occupational Exposure Limit assigned. 15mg/m3 total dust 5mg/m3 respirable (Particulates Not Otherwise Regulated)

8.2 Exposure controls

8.2.1 Engineering Controls	Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (dilution and local exhaust), and control of process conditions.
8.2.2 Personal Protection	
Respiratory protection	Wear suitable respiratory protective equipment if working in confined spaces with inadequate ventilation or where there is any risk of the exposure limits being exceeded. Observe OSHA regulations for abrasive blasting (29 CFR 1910.94) respirator use (29 C.F.R. §1910.134).
Eye/face protection	Goggles.
Skin protection	Wear suitable protective clothing and gloves. For example cotton or rubber .

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Glass Powder . White.
Odour	Odourless.
Odour Threshold (ppm)	Not applicable.
pH (Value)	Not applicable.
Freezing Point (°C)	Not applicable.
Melting Point (°C)	Approx 730 C
Boiling Point (°C)	Not applicable.
Flash Point (°C) [Closed cup]	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Non-combustible.
Vapour Pressure (mm Hg)	Not applicable.
Vapour Density (Air=1)	Not applicable.
Solubility (Water)	Insoluble.
Partition Coefficient	Not applicable.
Auto Ignition Point (°C)	Not applicable.
Decomposition Temperature (°C)	Not applicable.
Viscosity (mPa. s)	Not applicable.
Explosive properties	Not applicable.
Oxidising Properties	Not applicable.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	Avoid contact with strong acids
10.2 Chemical stability	Stable.
10.3 Possibility of hazardous reactions	Not applicable.
10.4 Conditions to avoid	Not applicable.
10.6 Hazardous decomposition product(s)	None known.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Ingestion	The acute oral toxicity of this product has not been tested. A similar material was nontoxic to rats at 5,000 mg/kg.
Inhalation	Inhalation may cause irritation to the mucous membranes.
Skin Contact	Dust may cause mechanical irritation.
Eye Contact	Dust may cause mechanical irritation.
Sensitisation	Not sensitising.
Carcinogenicity	There are no known reports of carcinogenicity of nonfibrous glass. Components are not listed by IARC, NTP or OSHA as carcinogens.
Reproductive toxicity	No evidence of reproductive effects.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity	No environmental hazards have been reported or known.
12.2 Persistence and degradability	This material is persistent but inert in aquatic systems. It will not bioconcentrate up the food chain.
12.5 Results of PBT and vPvB assessment	Not classified as PBT or vPvB.
12.6 Other adverse effects	Not applicable

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods Product as supplied: The waste is considered to be non hazardous. Disposal should be in accordance with local, state or national legislation.

SECTION 14: TRANSPORT INFORMATION

14.2 Proper Shipping Name NOT CLASSED AS DANGEROUS FOR TRANSPORT.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

TSCA Inventory Status: Reported/Included.
AICS Inventory Status: Reported/Included.
DSL/NDSL Inventory Status: Reported/Included.
There is no CERCLA Reportable Quantity for this material.
Contains no SARA Title III, Section 313 notification chemical present at or above the deminimus concentration.
German Water Hazard Classification VwVwS: WGK class 1 (low hazard to water).
HMIS: 0,0,0

SECTION 16: OTHER INFORMATION

This SDS was last reviewed: 10/2011
The following sections contain revisions or new statements: All sections.

EC Classification No. 67/548/EEC	Not classified as dangerous for supply/use.
GHS Classification EC No. 1272/2008	Not classified as dangerous for supply/use.

Information contained in this publication or as otherwise supplied to Users is believed to be accurate and is given in good faith, but it is for the Users to satisfy themselves of the suitability of the product for their own particular purpose. Potters Industries gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that exclusion is prevented by law. Potters Industries accepts no liability for loss or damage (other than that arising from death or personal injury caused by defective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.