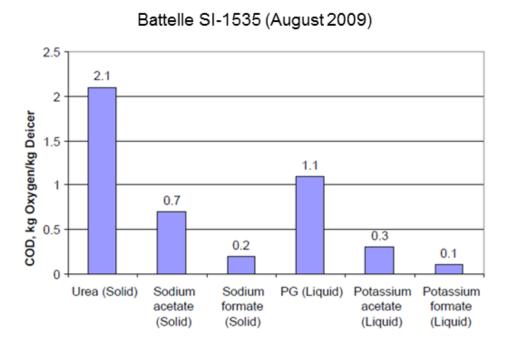
## Technology – Raw Materials



Potassium hydroxide contributes (K<sup>+</sup>) to acetates or formates

+

Formic or acetic acid contributes to

Chemical Oxygen Demand or BOD<sub>5</sub>

+

**Corrosion Additives** 

 $\downarrow$ 

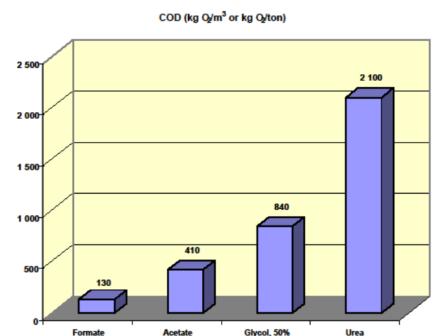
SAE AMS Certification



## **Environmental**

Freeze-point depressant anti-icers/deicers degradation rates are dependent on environmental factors such as medium, temperature, travel time, and established bacterial communities in soils and receiving waters.

## Oxygen demand deicing chemicals



- Urea shows highest chemical oxygen demand of all RDFs and biodegrades (besides CO2 and water) to ammonium (high cell toxicity especially for aquatic life)
- Glycols/glycerols show improved environmental profile but still show COD levels 6 to 8 times higher than those of formates and produce glycolic acid during biodegradation
- Acetates and formates have the lowest environmental impact and biodegrade to carbon dioxide and water only with acetates still having a 3 fold higher COD value compared to formates

Formates 50% by weight has the lowest environmental impact among all practically available runway deicing products.



## **Product Performance**

60

