

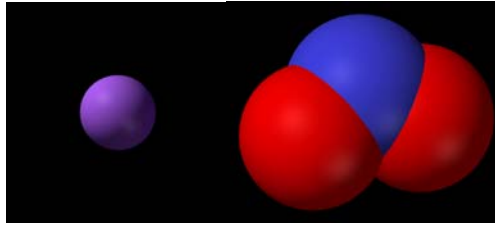
Nitrite based corrosion inhibitors are limited to closed air systems.

Air contact with nitrites causes:

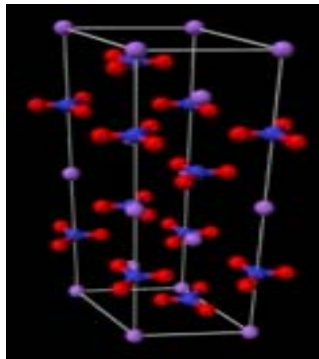
- ◆ Oxidization that changes nitrite into *nitrate*.
- ◆ *Nitrates* cause corrosion
- ◆ *Nitrates* are carcinogens

Sodium Nitrite produces extra wear on pump and valve seals; caused by high concentration in the reservoir of Total Dispersed Solids.

Sodium Nitrite (NaNO_2)



Sodium *Nitrate* (NaNO_3)



GreenCut distributed by:



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products for a better world

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Sodium Nitrite based Corrosion Inhibitors



Commentary by:

LubeCorp Manufacturing Inc.



Not suitable for open air systems



Sodium Nitrate
Formaldehyde

Nitrite based Corrosion Inhibitors

- ◆ Provide good corrosion protection via chemical reaction between nitrite and iron or aluminum in a closed system such as a radiator.
- ◆ But... air entry via surface air-to-liquid contact into the reservoir of a CNC machine, including liquid pumping in open air, will oxidize the nitrite to the ineffective *nitrate* form - a carcinogen.
- ◆ Net result is a corrosive *nitrate* liquid that attacks iron or aluminum instead of protecting it.
- ◆ Ps: Nitrites will corrosively assault copper and bronze at any time.



Sodium Nitrate
Formaldehyde

NOTES on NITRITES

Nitrites also have temperature limitations used in Plasma Arc Cutting water tables.

- ◆ Testing in sodium nitrite cutting water tables has shown abnormally high sodium content relative to the nitrite.
- ◆ The nitrite is changing into *nitrate* due to excessive air absorption and to thermal breakdown by the plasma arc torch heat.
- ◆ The heat causes Nitrite/ *Nitrate* gassing-off resulting in toxic fumes. Sodium remains.
- ◆ Net result: Increased corrosivity in the bath.

Proprietary nitrite based corrosion inhibitors usually consist of an aqueous solution of sodium nitrite, a pH buffer, and a biocide (formaldehyde).

Example: Plasma Quench 617, Supplied by Koal Industries

Sodium nitrite is an active nutrient for bacteria. Upshot:

- ◆ high demand for formaldehyde biocides
- ◆ very negative environmental impact
- ◆ costly environmental disposal issues

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NOTES on GREENCUT[®]

GreenCut Cutting Fluid is SAFE

And does NOT contain Nitrites, biocides or pesticides. GreenCut is totally safe for humans, animals, fish, land, air and water.

GreenCut contains

- ◆ Exceptional metal-cutting chemistry
- ◆ Superb anti-rust & anti-foam additives
- ◆ 100% safe and effective ingredients

GreenCut eliminates the food source for all bacterium in the metalworking fluid tank by instant biodegradation of any tramp oils or other oils pumped through the reservoir.

All oils are instantly biodegraded to CO₂, water, and protein biomass.

- ◆ Provides a totally safe environment
- ◆ Removes all sump odors
- ◆ Prevents GreenCut waste

GreenCut has a 12 year proven track record in industry, and is certified Internationally under EcoLogo CCD-069.

