NA-SUL 450 is a liquid emulsifiable rust preventive concentrate. NA-SUL 450 easily forms stable emulsions when added to water with moderate stirring. The resulting emulsions give excellent rust protection for steel parts during storage and transportation. Calcium-based NA-SUL 450 contains no mineral oil but instead uses a biodegradable ester carrier.

_Do not freeze, see storage conditions._

**CHEMICAL COMPOSITION:** Calcium dinonylnaphthalene sulfonate/carboxylate, alkanolamines, ester.

**APPEARANCE:** Dark brown liquid.

**TYPICAL PROPERTIES:**

- Calcium Content: 0.7%
- Viscosity @ 40°C (ASTM D 445, DIN 51 550): 660 mm²/s (cSt)
- Density @ 15.6°C (ASTM D 4052): 0.99 g/ml
- Weight Per Gallon @ 25°C: 8.2 lbs
- Flash Point, COC (ASTM D 92, DIN 51 376): 100°C (212°F)

*Note: The above analytical data are not specifications.*

**APPLICATIONS:** Water emulsifiable rust preventive fluids for protection of steel parts during storage and transportation.

**USE LEVEL:** 1% to 8% NA-SUL 450 in water.

NA-SUL 450 is a rust preventive concentrate that is designed to easily form stable emulsions by adding to water with moderate stirring. Emulsions of NA-SUL 450 deposit thin, hydrophobic protective films, providing excellent humidity protection with moderate salt fog protection at higher concentrations. Protective films of NA-SUL 450 provide effective rust protection even in 100% condensing humidity conditions, yet are also easily removed with alkaline cleaner. NA-SUL 450 dries quickly, leaving a thin dry to the touch film from concentrations of 5% or less.

**BLENDING INSTRUCTIONS:** NA-SUL 450 can be cut back easily with water to form emulsions. For easiest blending, pour NA-SUL 450 into water with moderate stirring.

**ADVANTAGES:**

- *Excellent rust and corrosion inhibitor*
- *Deposits extremely thin hydrophobic films*
- *No mineral oil, biodegradable ester carrier*
- *Coating is easily removed with alkaline cleaner*
- *Emulsions form easily with moderate stirring*
- *Coating @ 5% is dry; Coating @ 10% is nearly dry*

(see reverse side)
TEST RESULTS: Technical reports are available from King Industries and can be requested by contacting the offices shown below.

SOLUBILITY: NA-SUL 450 forms emulsions in water at use levels of 1% to 8% with moderate stirring. NA-SUL 450 is soluble in some mineral oils, esters and vegetable oils. Solubility and emulsion stability should be verified in the fluids that are intended for use.

STANDARD PACKAGING: 430 lbs (195 kg) head drum.

STORAGE CONDITIONS: Do not freeze. Best if stored above 10°C (50°F). If stored below 10°C, before using heat between 40°C and 50°C with stirring. Rust protection is not affected, but emulsion stability is reduced. Store in a cool, dry place away from any direct source of heat and moisture. Keep storage containers tightly closed. Maximum recommended storage temperature: 46°C (115°F)

SHELF LIFE: Best if used within 12 months from manufacture. After 6 months from date of manufacture, NA-SUL 450 should be stirred at between 40°C (105°F) and 50°C (120°F) to restore uniformity and performance. Do not exceed 60°C (140°F) to avoid loss of emulsion stability.

HANDLING: Avoid all personal contact. Observe good personal hygiene. For additional information, it is advised to consult the Safety Data Sheet (SDS) for NA-SUL 450.

REGISTRATION: Please refer to Section 15 of the Safety Data Sheet for information.

For Samples or Technical Service, contact King Industries or your King representative.

King Industries, Inc. King Industries International, Inc.
Science Road Science Park 402,
Norwalk, CT 06852-0588 1098 XH Amsterdam
Tel: 203-866-5551 Tel: +31-20-723-1970
Fax: 203-866-0425 Email: info@kingintl.nl
E-mail: LAD@kingindustries.com

NA-SUL® is a registered trademark of King Industries, Inc.

The conditions of your use and application of our products, technical assistance and information (whether verbal, written or by way of product evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. Such testing has not necessarily been done by King Industries, Inc. (“King”). The facts, recommendations and suggestions herein stated are believed to be reliable; however, no guaranty or warranty of their accuracy is made. EXCEPT AS STATED, THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE. KING SHALL NOT BE HELD LIABLE FOR SPECIAL, INCIDENTAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES. Any statement inconsistent herewith is not authorized and shall not bind King. Nothing herein shall be construed as a recommendation to use any product(s) in conflict with patents covering any material or its use. No license is implied or granted under the claims of any patent. Sales or use of all products are pursuant to Standard Terms and Conditions stated in King sales documents.