Henkel

Surface Technologies

TECHNICAL BULLETIN

FREPHOS

RUST REMOVER AND METAL CONDITIONER

1. DESCRIPTION AND USE

Frephos is a liquid acid detergent for the removal of rust and light soils from steel surfaces.

Frephos is also used as a metal conditioner to prepare steel, zinc and aluminium alloy surfaces for painting.

2. ADVANTAGES

- Concentrated - usually diluted with 3 or 4 parts of water before using.
- All purpose - a combined detergent, rust remover and metal conditioners all in one product.
- Provides excellent paint adhesion.
- Subsequent paint finishes are highly corrosion resistant.
- Flexible - may be used either as a tank or brush-on type metal conditioner.
- Excellent rinsability - may be easily rinsed with cold water.
- No toxic or obnoxious fumes.
- Versatile - may be used on most metals, including steel, aluminium copper, brass and zinc.

3. HOW TO USE FREPHOS

a. Equipment

Frephos is an acid product and will attack steel and iron containers. Use acid resistant equipment, such as ceramic, wood, rubber lined (65°C), Koroseal lined or type 316 or 347 stainless steel tanks. If the solution is to be heated, use Carpenter 20 stainless steel coils, Teflon, Quartz or Karbate heat exchangers. Type 316 or Duriron pumps give good service.

HOW TO USE FREPHOS (continued)

b. To Remove Rust from Iron and Steel

Immersion Process

Rust and light soils can be removed from iron and steel parts by immersing the parts in **Frephos** diluted with 3 or 4 parts of water at room temperature. Immersion time will depend on the amount of rust. Usually, from 5 to 30 minutes are required.

The operation may be speeded considerably by heating the **Frephos.** A maximum temperature of 160°F is recommended.

It will be noted that at temperatures substantially above 55°C, wetting agents tend to float on the surface of the **Frephos** until all rust is removed. For this type of operation, dilute **Frephos** with 2 parts by volume.

c. Direct Application

Frephos may be applied by a brush or swab on parts too large to be fully immersed. Keep them wet with **Frephos** until all rust is removed. For this type of operation, dilute **Frephos** with 2 parts water by volume.

d. Pre Cleaning

If parts are heavily soiled, they should be given a preliminary cleaning in a suitable alkaline cleaner such as **Metal Cleaner 114** followed by a rinse, before the treatment.

e. Rinsing

All parts should be rinsed with clean water after derusting to remove acid residues. They then should be dried rapidly, using an air blast or hot water. If they are not to be painted, a suitable rust preventative should be applied promptly.

f. To Prepare Iron, Steel, Aluminium and Zinc for Painting

Dilute one part **Frephos** with three parts water. Apply this solution to the parts, using a brush or swab and allow the solution to stand on the work for 3 to 4 minutes. Wipe with a clean cloth, or if the surface has dried, wet again with dilute **Frephos** and immediately wipe with a clean damp cloth.

If desired, small parts may be immersed completely in dilute **Frephos** for 3 or 4 minutes, removed and dried.

Parts are then ready for painting without further treatment. It is recommended that paint be applied promptly so that humid storage conditions do not promote rusting.

g. To Remove Tarnish and Corrosion From Aluminium

Dilute one part **Frephos** with three parts water. Apply to the aluminium surface with a brush or swab, scrubbing heavily corroded areas to work the corrosion products loose from the surface. Allow to react for about 4 or 5 minutes and then scrub the corroded areas again.

Flush thoroughly with water to remove the acid residues or wipe the entire surface with clean, damp cloths.

4. PHYSICAL PROPERTIES

Clear, colourless liquid
Density: 1.22 kg/litre
Flash and Fire Point: None

5. CHEMICAL PROPERTIES

Acidity as phosphoric Acid: 37.0-38.0%

6. WASTE DISPOSAL

Biodegradable. Contains 11.5% Phosphorous. May require neutralising to a specified pH range before disposal. **PACKAGING**

Packed in a 5 litre PB and 20 litre BPD. DG Class 8.