

# eurochem<sup>®</sup>

aviation, marine and industrial chemicals





**eurochem**<sup>®</sup>  
aviation, marine and industrial chemicals

## COMPANY PROFILE

**EUROCHEM** was established in Athens, Greece in 1981, and soon became the leading manufacturing company in Chemical compounds and detergents, for cleaning and maintenance.

Our current production range includes over 2000 Chemical products for **AVIATION, MARINE, INDUSTRIAL USE, SPRAY-AEROSOLS** as well as **INSTITUTIONAL** and **HOUSEHOLD DETERGENTS**, in various packaging (bulk, drums, pails, cans, plastic bottles, aerosol).

**EUROCHEM** functions according to the International Quality Standards and is certified with the **Quality Standard ISO 9001 & 14001**

**For design, production, and sales of:**

**A. Cleaning and maintenance Chemicals for Marine, Aviation and Industrial use.**

**B. Detergents.**

The majority of them are manufactured under U.S. Military Specifications and most of them are approved by authorized organizations such as: The U.S. Army (QPL), Boeing, Public Power Corporation, The Greek Navy, The Greek State General Chemical Laboratory etc. and in general has all the approvals and certificates.

Eurochem's activities are expanded all over the world, supplying Shipping, Aviation and Industry Companies with its variety of products.

In 1990 **EUROCHEM** became the head of the **EUROCHEM GROUP** of Companies making a turnover of 20.000.000 U.S.D. per year.

Our Company's continuous research in the field of Chemical technology, together with our experienced professional personnel, ensures quality and reliability.

**EUROCHEM** is proud to offer its customers

**«The complete solution in Maintenance»**

**EUROCHEM S.A.**

4 RAFAILIDOU St. 177 78 TAVROS, ATHENS, GREECE  
TEL.: +30 210 48 36 321-7, FAX: +30 210 48 36 331-2  
E-mail: eur98@otenet.gr - <http://www.eurochemgr.com>

# Certificate Of Assessment International Quality Certification

hereby grants to:

**EUROCHEM S.A.**

**4 RAFAILIDI STR., TAVROS, GR-17778**

whose management system is in conformance with the standard:

**ELOT EN ISO 9001:2015**

the right to be listed in the IQC Registry for the following scope(s):

**DESIGN, DEVELOPMENT, PRODUCTION AND SALES OF:  
A. CLEANING AND MAINTENANCE CHEMICALS FOR  
MARINE, AVIATION AND INDUSTRIAL USE  
B. DETERGENTS**

Signed



CEO



on behalf of IQC

This Certificate Number **GR/035/2018-1**  
ISSUED ON **23/11/2018**  
IS VALID UNTIL **22/11/2021**





# Certificate Of Assessment International Quality Certification

hereby grants to:

**EUROCHEM S.A.**

**4 RAFAILIDI STR., TAVROS, GR-17778**

whose management system is in conformance with the standard:

**ELOT EN ISO 14001:2015**

the right to be listed in the IQC Registry for the following scope(s):

**DESIGN, DEVELOPMENT, PRODUCTION AND SALES OF:  
A. CLEANING AND MAINTENANCE CHEMICALS FOR  
MARINE, AVIATION AND INDUSTRIAL USE  
B. DETERGENTS**

Signed



CEO



on behalf of IQC

This Certificate Number **GR/035/2018-3**  
ISSUED ON **23/11/2018**  
IS VALID UNTIL **22/11/2021**



# Certificate Of Assessment International Quality Certification

hereby grants to:

**EUROCHEM S.A.**

**4 RAFAILIDI STR., TAVROS, GR-17778**

whose management system is in conformance with the standard:

**ELOT EN ISO 27001:2013**

the right to be listed in the IQC Registry for the following scope(s):

**DESIGN, DEVELOPMENT, PRODUCTION AND SALES OF:  
A. CLEANING AND MAINTENANCE CHEMICALS FOR  
MARINE, AVIATION AND INDUSTRIAL USE  
B. DETERGENTS**

Signed



CEO



on behalf of IQC

This Certificate Number **GR/035/2018-9**  
ISSUED ON **29/5/2020**  
IS VALID UNTIL **28/5/2021**



# Certificate Of Assessment International Quality Certification

hereby grants to:

**EUROCHEM S.A.**

**4 RAFAILIDI STR., TAVROS, GR-17778**

whose management system is in conformance with the standard:

**OHSAS 18001:2007 / ELOT 1801:2008**

the right to be listed in the IQC Registry for the following scope(s):

**DESIGN, DEVELOPMENT, PRODUCTION AND SALES OF:  
A. CLEANING AND MAINTENANCE CHEMICALS FOR  
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B. DETERGENTS**

Signed



CEO



on behalf of IQC

This Certificate Number **GR/035/2018-6**  
ISSUED ON **23/11/2018**  
IS VALID UNTIL **22/11/2021**

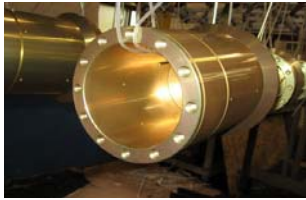






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## **METAL SURFACE TREATMENT**



**EUROCHEM offers a wide range of products for metal pre-treatment, stainless steel treatment, aluminum treatment, phosphate and protective coatings, degreasers – derusters, cleaning and passivation, acid and alkaline cleaning, etc.**

**Before making your decision as to which method you are going to use, cleaning / degreasing or something more comprehensive, your decision should be based on the type of contamination to be removed as well as the type of base in question.**

**Acidic, neutral or alkaline chemicals can be used for degreasing. These chemicals can also remove corrosion products such as mill scale and other oxides. Rinsing is necessary with acidic and alkaline cleaners.**

**Iron phosphate treatment provides very good adhesion properties and does not have side effects on the properties of the powder coatings. Iron phosphate provides good protection against low and middle class corrosion although it cannot compete with zinc phosphate.**

**Zinc phosphate forms a thicker layer than iron phosphate and securely attaches to the base material. It also has very favorable adhesive properties. Zinc phosphate provides excellent protection against high corrosion classes for pre-treatment of steel and galvanized steel.**

**Manganese phosphate forms a very thick layer therefore painting is not recommended.**

**Chromate treatment provides a series of different procedures, which depend on the type of metal or alloy, the type of object, method of manufacture and quality requirements.**

**Chromate treatment is sub-divided into:**

- **Yellow chromate treatment.**
- **Clear chromate treatment.**
- **Green chromate treatment.**
- **Chrome free treatment**

**Attached find an indicative list of treatments and products we provide for these purposes, since we have a variety of products for specific uses depending on the application.**



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## **PRODUCTS FOR THE AMMUNITION INDUSTRY**

We are a Greek company that manufactures cleaning and maintenance chemicals, especially for the Air Force, Military and Defense Systems.

In Greece we are the exclusive chemical supplier for the Hellenic Aerospace Industry and the Hellenic Defense Systems.

We mainly supply the Hellenic Defense Systems with phosphating materials, cutting fluids, paint removers, stainless steel treatment etc.

We also produce special products for degreasing, cleaning and brightening, copper bullets, cartridges, etc. in one step with a neutral product, P-KLEEN-22.

In the past for this application a Henkel product named IPRO was used but now this product is unavailable. Our product P-KLEEN-22 is equivalent and probably better than Henkel product.

Subsequently, there are PDS for P-KLEEN-22 and PHOSPHAT-Z-101 along with photo's of cartridges cleaned with P-KLEEN-22 and phosphated cartridges with PHOSPHAT-Z-101.

In addition our company manufactures a full range of products for cleaning and maintenance for the Air force, Armed forces and ammunition manufacturers. The above products are just indicatives.

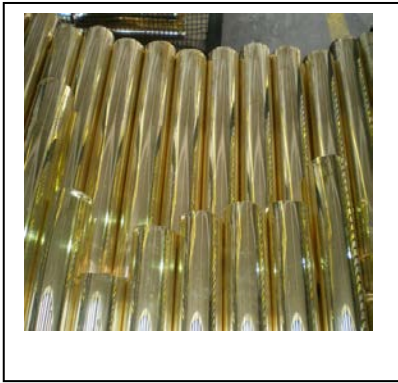
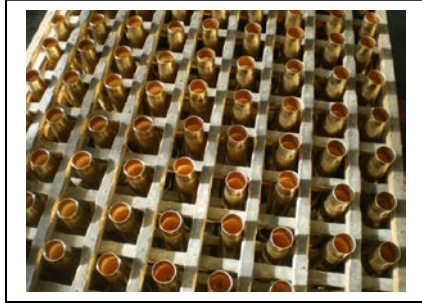
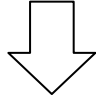
Visit our site [www.eurochemgr.com](http://www.eurochemgr.com) for more details. The categories Aviation Chemicals and Metal Treatment should be of particular interest since they are products widely used in your field.





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**Cartridges cleaned with our product P-KLEEN-22**



**Phosphated ammunition  
with our product  
PHOSPHAT -Z- 101**





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## **DEGREASERS – DE-RUSTERS – LEAK DETECTOR**

<b>KEM – 2B</b>	Hot tank alkaline cleaner for ferrous metals.
<b>PH – CLEANER - 2</b>	Non-caustic hot tank aluminum cleaner.
<b>P-KLEEN – 22</b>	Cleaner – Deoxidizer – Brightener for copper & brass alloys.
<b>ALUMICLEAN</b>	Heavy duty hot tank cleaner for aluminum.
<b>ALUMINETCH</b>	Hot tank cleaner and etchant for aluminum.
<b>RADOL – 22/22</b>	Cold tank, heavy-duty aluminum cleaner – brightener and deoxidizer.
<b>SMUT OVER</b>	Deoxidizer for aluminum alloys containing less than 6% silicon.
<b>ALUMINUM DEOXIDIZER</b>	Deoxidizer for aluminum alloys containing more than 6% silicon.
<b>SCALE – OFF</b>	Acidic liquid product for the removal of rust.
<b>ATAROL</b>	Liquid product for cleaning and removing rust. Forms a protective phosphate coating on ferrous surfaces. Also suitable for cleaning aluminum surfaces.
<b>HIBIT – 28</b>	An effective inhibitor for hydrochloric acid.
<b>KEM – BRASS</b>	Cold immersion brightener – deoxidizer for brass, bronze, copper and its alloys.
<b>RUST CONVERTER</b>	Metal treatment compound which, when applied to rusted metal, chemically changes the rust (iron oxide) into iron phosphate.
<b>BUBBLE FLUID</b>	Leak detector.

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## PHOSPHATE COATINGS

<b>PHOSPHAT – F</b>	Cleaning and phosphating of steel and zinc alloys. A superior cleaner produces an iron phosphate coating for paint adhesion. Inhibits re-rusting before painting.
<b>PHOSPHAT – SUPER</b>	Low temperature iron phosphate and cleaner used by dipping.
<b>PHOSPHAT – SUPER SPRAY</b>	Same product as the above. Applied by spray.
<b>SUPER – KLEEN</b>	Liquid product for de – rusting, cleaning and phosphating in one step.
<b>PHOSPHAT – Z – 101</b>	Microcrystalline zinc phosphating of steel or zinc alloys. Smooth coating reduces paint cost. Provides paint bond and corrosion protection.
<b>PHOSPHAT – M</b>	Heavy manganese anti – friction coating and foundation for oil and paint. Substantial manganese coating for moving parts; base for rust proofing.
<b>PHOSPHAT – SOLVE</b>	Iron phosphate coating solvent based no need for rinsing.
<b>KEM – BLACK</b>	Decorative, rust resistant, black finish. (black oxide)
<b>COLD BLACK FAST</b>	(Black fast) decorative rust resistant black finish (black oxide) for cold application.
<b>HIB &amp; HIBI SEAL – NC</b>	Inhibitive seal rinse aids for phosphate coatings.

## CHROMATE CONVERSION COATINGS

<b>KEMCOT</b>	Yellow chromate conversion coating on aluminum and aluminum alloys.
<b>KEMCOT CLEAR</b>	Clear conversion coating on aluminum and aluminum alloys.
<b>KEMCOT – LG</b>	Green aluminum conversion coating (free of hexavalent chromium).
<b>ALCOT-NC</b>	Chrome-free passivating agent.

## STAINLESS STEEL TREATMENT

<b>PICKLING FLUID</b>	Pickling fluid for stainless steel tanks and pipelines.
<b>PICKLING PASTE</b>	Viscous liquid for cleaning welded surfaces of stainless steel objects.
<b>PASSIVATING FLUID</b>	Passivation fluid after pickling treatment.
<b>PASSIVATING PASTE</b>	Viscous liquid for passivation of welded surfaces of stainless steel objects.

## PROTECTIVE COATINGS

<b>ADICO – L</b>	A water-based mild alkaline liquid used for the temporary protection of the metals and gives a passivating film which protects the surfaces against corrosion.
<b>ADICO – M</b>	Non toxic water based corrosion preventive suitable even for food industries.
<b>PROTECTIVE OIL No. 2</b>	Oil based, corrosion preventive compound soft film.
<b>IS – 2006 (MIL-PRF-16173E GRADE 4)</b>	Corrosion Preventive Compound transparent non-tacky film for indoor & outdoor storage.
<b>WATER DISPLACER</b>	Oil based, corrosion preventive compound, water displacing, ultra thin film.





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## CUTTING OILS

- LUBRICOOL No. 37** (Cutting oil) Full-synthetic metal working fluid coolant – lubricant – rust
- LUBRICOOL No. 26** (Cutting oil) Semi-synthetic metal working fluid coolant – lubricant – rust preventive
- LUBRICOOL No. 18** Emulsifiable cutting oil, coolant – lubricant – rust preventive

## PAINT REMOVERS

- K – 2015 – L** Acidic type, liquid tank paint remover for difficult finishes such as epoxy, polyurethane and powder coatings. Ideal for cleaning hangers in dye factories.
- S – 2055** A liquid tank type carbon and paint remover, safe on all metals, that removes carbon and paint from ferrous and non-ferrous parts safely and effectively.
- K – 2025** Thickened paint stripper which effectively strips paint including epoxy, polyurethane and similar organic coatings.

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## **KEM - 2B**

### **DESCRIPTION**

KEM - 2B is an alkaline product in a free flowing granular powder form. Is odorless and does not produce fumes during operation. The dosage is low but its cleaning efficiency is high.

### **APPLICATION**

KEM - 2B is used for cleaning and degreasing ferrous parts before painting. Removes effectively oils, greases etc.

KEM - 2B can be used also for degreasing parts before phosphatizing.

KEM - 2B is not safe for aluminum parts.

### **USAGE**

KEM - 2B is applied by soaking, diluted in water in a ratio of 5-6%. The temperature of the solution must be 70 - 80<sup>0</sup>C. The immersion time is 5-10 minutes depending on type and quantity of soils involved. Finally rinse parts with water and dry. If KEM - 2B is used just before phosphating do not dry parts.

### **PRODUCT PROPERTIES**

Appearance : White granular powder

pH (5% sol) : > 12

Corrosiveness : Is safe for all kind of metals except aluminum.

### **SAFETY**

KEM - 2B is caustic and is recommended to avoid contact with skin and eyes. In case of contact wash with plenty of water.

Special clothing, aprons, boots, face shields etc. must be worn when handling.

### **PACKAGING**

KEM - 2B is available in 25 kg plastic bags or plastic drums.

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## **PH – CLEANER –2**

**( Non – caustic mild alkaline cleaner)**

### **DESCRIPTION**

PH – CLEANER – 2 is a powder compound which readily removes identification ink, machine oils, metal chips, drawing compound, soluble oils, talc, rust preventatives and other obdurate soils.

Absorbs an unusual amount of contamination prior to losing its effectiveness ..... provides more “in service” time ..... requires less frequent tank drainage.

PH – CLEANER – 2 has extremely high sequestering properties providing effective conditioning of the hardest water.

Low foaming .... can be used to clean at production speed.

Long-lived .... easy to control. Requires only infrequent additions of compound to maintain original solution strength.

Safe on all metals including aluminum, magnesium, plated metals etc.

PH – CLEANER – 2 can be used as a still tank precleaner and buffing compound remover for all metals to be plated or phosphated. When used as a precleaner to remove heavy soils, PH – CLEANER – 2 prolongs the life and cleanliness of cleaning solutions subsequently used in electrolytic cleaning tanks.

### **USE**

PH – CLEANER - 2 is used by spray or tank immersion cleaning at concentrations of 3 – 5 % in water at temperatures of 60 – 90<sup>0</sup>C. Upon withdrawal from cleaning solution, parts should be rinsed with hot water.

### **PRECAUTIONS**

Avoid contact with skin, eyes and clothing ( see M.S.D.S. )



## **P-KLEEN-22**

### **Description**

P-KLEEN-22 is a neutral product in powder form, which is specially designed for cleaning, deoxidizing and brightening all types of cartridges in defense systems.

Also cleans copper and brass alloys, when conventional cleaners have poor results.

### **Advantages**

- Neutral product
- Safe to personnel during use.
- Safe on all metals.
- Degreases, deoxidizes and polishes in one easy step.
- Economical.
- Long tank life.

### **Application:**

P-KLEEN-22 effectively removes oil, grease, light carbon, dust, oxidation, etc. from copper, brass and its alloys while leaving a shiny surface.

It can also be used as degreaser with excellent results on aluminum, iron and generally on all metals.

### **Usage:**

P-KLEEN-22 is used diluted in water in a proportion of 4-8% by immersion for 7-15 minutes at a temperature of 60-70 degrees.

The concentration, immersion time and temperature may vary depending on the nature of the soil and the desired results. Then rinse thoroughly with water, preferably hot.

Best results are achieved by stirring the solution.

### **Approvals:**

- By the Hellenic Defense Systems SA

### **Safety:**

Avoid prolonged contact with skin. Use protective equipment such as gloves, goggles, masks, etc. For further information refer to Material Safety Data Sheet.





## **ALUMICLEAN**

**(Heavy-duty hot tank cleaner for aluminum)  
LEADS THE FIELD IN PERFORMANCE AND TANK LIFE**

### **Description :**

ALUMICLEAN is a powder compound which readily removes identification ink, machine oils, metal chips, drawing compound, soluble oils, talc, rust preventatives and other shop soils from aluminum and aluminum alloys, including sheets, tubing, extrusions and castings.

Absorbs a unusual amount of contamination prior to losing its effectiveness ..... provides more "in service" time ..... requires less frequent tank drainage.

ALUMICLEAN has extremely high sequestering properties providing effective conditioning of the hardest water.

Low foaming .... can be used to clean at production speed.

Long-lived .... easy to control. Requires only infrequent additions of compound to maintain original solution strength.

This product simultaneously cleans and etches aluminum, however the etching action is slow. The benefit of this product is that it does not create a hard residue on the tanks and has a long tank life (this product does not contain Sodium Hydroxide).

Even the etching action is not that large, the use of our product ( **RADOL – 20- 20 - PLUS** ) for deoxidizing (which etches and deoxidizes ) as a method gives perfect results.

### **Application :**

Ideally suited for cleaning of aluminum prior to chromodizing, anodizing or phosphating operation in aircraft plants, planting shops and metal-working establishments.

Excellent material for cleaning brass and other nonferrous alloys in specialty shops.

ALUMICLEAN is efficient for pre-cleaning of aluminum prior to spot welding.

### **Use :**

ALUMICLEAN is used at concentrations of 3 – 5 % in water at temperatures of 60 – 90<sup>0</sup>C. Upon withdrawal from cleaning solution, parts should be rinsed with hot water.

### **Precaution :**

Avoid contact with skin, eyes and clothing ( see M.S.D.S. )

**te : For its use in chromate conversion coating see our Technical Bulletin.**

EUROCHEM S.A.

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## **ALUMINETCH**

GIVES A BRIGHT, SILVERY, SATIN FINISH TO YOUR ALUMINUM PRODUCTS

### **Description :**

ALUMINETCH is a powder compound which provides a rapid, thorough reconditioning treatment for aluminum removing light die lines and scratches and producing a beautiful, silver – white, finely etched satin finish. It is adaptable to any aluminum alloy.

Aluminum is a very reactive metal. When exposed to the atmosphere, it quickly covers itself with an unsightly white or gray oxide film. Since aluminum is normally a bright white color, the contrast between clean and soiled or oxidized metal is intensified.

Aluminetch restores the natural finish to aluminum.

It removes oxides, corrosive salts, tenacious grease and oil films. It etches the underlying metal very uniformly. Some etchants preferentially dissolve only certain elements of the aluminum alloy, leaving a residue of insoluble elements. The result is a discolored, rough, irregularly etched surface. ALUMINETCH which consists of dipping parts into a tank of ALUMINETCH, rinsing and then bright dipping with RADOL – 20 – 20 – PLUS, produces a bright shiny surface. There is never a need for further processing, other than rinsing.

ALUMINETCH is extremely long-lived. When oil films are observed floating at the top of the tank, the solution may be reclaimed by overflowing.

The etch rate of ALUMINETCH used at the recommended concentration and temperature, will be 0.2 to 0.25 mils per minute on most aluminum alloys.

### **Creates no sludging problems**

ALUMINETCH solves the sludging problem usually prevalent in materials of its type. The sludge created is small in quantity ... and it is very soft and non-caking. It can be easily removed from the tank bottom without chipping, scraping or scrubbing.



### **Use**

Since ALUMINETCH can be used in simple, inexpensive, mild steel tanks, installation costs are low and maintenance requirements are practically nonexistent. The material is normally used at 3 – 5% in water and at low, easy – to – maintain temperatures ( 45<sup>0</sup> – 65<sup>0</sup>C ). Upon withdrawal from cleaning solution parts should be rinsed with hot water.

If deoxidizing process is required use our product RADOL – 20 – 20 – PLUS for deoxidizing.

### **Application :**

ALUMINETCH is used wherever bright aluminum is desired. For example: aluminum window finishing, kitchen utensils, venetian blends, furniture, dishes, trays, auto distributor covers and other cast parts, lightning flash arrestors for power lines, refrigerator ice cube trays, heat reflectors, light reflectors, ornamental aluminum, and a great variety of small aluminum parts such as the stays used in permanent waving machines.

Ideal for cleaning of aluminum prior to chromodizing, anodizing or phosphating operation in aircraft plants, planting shops and metal-working establishments.

### **Caution :**

ALUMINETCH contains sodium hydroxide. Avoid contact with skin, eyes and clothing. ( see M.S.D.S. )

**Note : For its use in chromate conversion coating see our Technical Bulletin.**



## **RADOL 22 – 22**

# **1 EASY STEP**

**CLEANS,  
BRIGHTENS  
AND  
DEOXIDIZES  
ALUMINUM  
AT  
ROOM  
TEMPERATURE**

### **Description:**

RADOL 22-22 is a specially formulated liquid product for degreasing and de-oxidizing of aluminum at room temperature in one step.

When RADOL 22-22 is used in combination with KEMCOT it meets U.S. Military Specifications MIL-C-5441 D and MIL-C-81706 (CHEMICAL CONVERSION COATINGS ON ALUMINUM AND ALUMINUM ALLOYS).

### **Usage:**

RADOL 22-22 is used for the removal of oil and oxides from aluminum and aluminum surfaces before the chromate coating process (alodine) or the anodizing process in electrostatic painting facilities. RADOL 22-22 is used in room temperatures.

### **Application:**

RADOL 22-22 is used diluted in water in a proportion of 1-5% by immersion, for 5-20 minutes, the concentration and immersion time may vary, depending on the nature of the soil and the desired results. Then rinse thoroughly with water. When the bath solution weakens add RADOL 22-22 to strengthen the solution.

When aluminum alloys contain silicon in high concentrations then we recommend the use of our product ATAROL.

### **Advantages:**

RADOL 22-22 has the following advantages in comparison to old methods

- Economical cleaning of aluminum.
- It is used cold.
- Excellent results in one stage.
- Does not create sludging problems.

### **General Note:**

Tanks used with RADOL 22-22 should be constructed of stainless steel or mild steel lined with plastic capable of withstanding the exposure to this acidic material.

### **Caution:**

Contains acidic ingredients. Avoid contact with eyes, skin and clothing. For further details refer to Material Safety Data Sheet (M.S.D.S.).

### **Packaging:**

RADOL 22-22 is offered in 35-kg plastic pails.





## ATAROL

### **Description:**

ATAROL is a liquid product composed of inhibited phosphoric acid.

### **Usage:**

1. Effectively removes calcium carbonate and magnesium hydrate scales from heat exchangers, boilers, evaporators and other types of water systems.
2. ATAROL is used for the removal of rust and iron oxides from iron and brightening surfaces, removing of tarnish from brass, copper, aluminum, as a protective pre-treatment prior to painting, removal of flush rust from mild steel cargo lines and tanks and lastly as a cleaner of rust stains from painted surfaces, glass, porcelain, etc.

### **Application:**

**For rust removal:** ATAROL can be applied full strength or diluted with water in a ratio of 1:3.

It can be used by immersion, spray or swab. Allow the solution to act on ferrous surfaces for 15 – 30 minutes and then rinse with water. When ATAROL is used by immersion the tank must be stainless steel or acid proof polyester.

**As a descaler:** It is applied in a concentration of 10-50% in water. The concentration varies depending on the nature and quantity of the scale.

Cold solutions work satisfactorily. However, heating speeds its action with greatest efficiency obtained at 160°F.

To strengthen solution weakened through usage, simply add more ATAROL to restore solution to desired concentration.

ATAROL may be added directly to the water in the system.

Circulate solution hot or cold, until inspection shows that the system is free of scales. Depending on the condition of the system a circulation of 12-24 hours is sufficient.

We recommend, when system runs clean, to protect system from further corrosion, flush with water and neutralize residual acid with our product KEM-NUTRO or ALKALINITY CONTROL in a concentration of 1,5 – 3% solution.

### **Safety:**

Contains acidic ingredients. Avoid contact with skin, eyes and clothing. For further details refer to Material Safety Data Sheet (M.S.D.S.).

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## **HIBIT - 28**

### **( AN EFFECTIVE INHIBITOR FOR HYDROCHLORIC ACID )**

#### **Description :**

Hydrochloric acid is usually used as a cleaning agent in Industries, since it cleans easily, fast & economically.

The only problems caused during its use is that it causes corrosion to metals and also emits fumes which cause health problems. The above mentioned problems can be solved by using HIBIT - 28. HIBIT - 28 is a concentrated liquid product which is used as an additive to the Hydrochloric acid solution, with the following desirable properties:

1. Free from objectionable odor.
2. Flash point is greater than 100<sup>0</sup>C
3. Instant solubility in hydrochloric acid solution.
4. No precipitation in the presence of ferric ions.
5. Non-staining of metals and no deposit of film.
6. Upon use provides a thin foam blanket to prevent acid fuming and splattering.
7. Stops corrosion without minimizing its actions up to 100<sup>0</sup>C.
8. Inhibition of pitting action of hydrochloric acid on mild steel (SAE 1010), stainless 316 and 420, monel and bronze.

#### **Replenishing of Inhibitor.**

HIBIT – 28 is not used up during pickling. But there is a loss of inhibitor when metals are removed from the bath. It is suggested that as fresh acid is added to replenish the bath, HIBIT – 28 is also added to bring the inhibitor concentration to the required inhibiting level.

#### **HIBIT – 28 Test Results.**

Laboratory tests were made by exposing clean weighed coupons in 5%, 10% and 15% hydrochloric acid at various temperatures for six hours.

The effects of 0,3 % ferric chloride on the corrosion rates were also determined.

Visual observations were made for discoloration and pitting of surfaces.

#### **Metal : Monel at 175<sup>0</sup>F ( 79<sup>0</sup>C )**

<b><u>Acid</u></b> Concentration %	<b><u>% Inhibitor</u></b> based on total solution	<b><u>Corrosion Rate</u></b> Lb/ ft <sup>2</sup> / day	<b><u>Visual Inspection</u></b> <b><u>after test</u></b>
15	Control (without Inhibitor)	0.0720	<b>Black, pitting</b>
	0.10	0.0141	Bright, no pitting
	0.15	0.0114	Bright, no pitting
	0.25	0.0087	Bright, no pitting
	0.75	0.0029	Bright, no pitting
10	Control (without Inhibitor)	0.0362	Dark, slight pitting
	0.05	0.00942	Bright, no pitting
	0.08	0.0084	Bright, no pitting
	0.12	0.0069	Bright, no pitting
	0.36	0.0023	Bright, no pitting

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**Metal : Brass at 200<sup>o</sup>F ( 94<sup>o</sup>C )**

<u>Acid</u> Concentration %	<u>% Inhibitor</u> based on total solution	<u>Corrosion Rate</u> Lb/ ft <sup>2</sup> / day	<u>Visual Inspection</u> <u>after test</u>
15	Control (without Inhibitor)	0.0183	<b>Metal Stained</b>
	0.10	0.0165	Stained, no pitting
	0.15	0.0165	Stained, no pitting
	0.25	0.0114	Stained, no pitting
	0.75	0.0038	Stained, no pitting
10	Control (without Inhibitor)	0.0057	<b>Metal Stained</b>
	0.15	0.0034	Stained, no pitting
	0.24	0.0034	Stained, no pitting
	0.36	0.0024	Stained, no pitting

**Metal : Mild Steel at 200<sup>o</sup>F ( 94<sup>o</sup>C )**

<u>Acid</u> Concentration %	<u>% Inhibitor</u> based on total solution	<u>Corrosion Rate</u> Lb/ ft <sup>2</sup> / day	<u>Visual Inspection</u> <u>after test</u>
15	Control (without Inhibitor)	7.9000	<b>Disappeared in 4 hrs</b>
	0.10	0.0930	Bright, no pitting
	0.15	0.0780	Bright, no pitting
	0.25	0.0570	Bright, no pitting
	0.75	0.0190	Bright, no pitting
10	Control (without Inhibitor)	2.630	<b>Severe pitting</b>
	0.05	0.060	Bright, no pitting
	0.08	0.060	Bright, no pitting
	0.12	0.042	Bright, no pitting
	0.36	0.014	Bright, no pitting

**NOTE : More information on other metals at various temperatures and concentrations are available upon request.**

**Use:**

Used at a ratio of 0.5 – 2 % by volume on the basis of undiluted acid.

**Caution:**

Avoid contact with skin, eyes and clothing ( see M.S.D.S )

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## ***USES FOR INHIBITED HYDROCHLORIC ACID***

One of the major industrial applications for hydrochloric acid is in metal cleaning operations. In such operations, HCl is used to remove scale and foreign deposits, which have deposited on metallic surfaces. Examples of such cleaning operations are industrial boiler systems, steel processing pickling baths, refinery process equipment and cleaning and fracturing of oil wells. HCl is effective in these operations, but extreme care must be taken to prevent attack on the base metals involved. HIBIT-28 is used to prevent hydrochloric acid from attacking dilute acid storage vessels and transportation equipment.

### **REFINERY AND INDUSTRIAL CLEANING**

Hydrochloric acid is used for the removal of deposits in refinery equipment and boiler systems. As this equipment is exposed to repeated exposures of acid cleanings, it becomes imperative that efficient inhibitors are used to control corrosive effects during the process. HIBIT-28 has been shown to be a most successful material for this purpose.

### **STEEL PROCESSING**

In the manufacture of sheet and rolled steel, the removal of mill scale is of prime importance. Economics of the operation require the use of a fast acting cleaning operation such as an acid bath. Inhibitors, which function at various processing temperatures, protecting the cleaned metal against excessive metal loss and/or pitting, are utilized. HIBIT-28 gives the necessary control at various temperatures in this operation, leaving the plate free from waxy deposits which interfere with subsequent coatings.

In the fracturing and acidizing of oil wells, dilute hydrochloric acid is used to dissolve the undesirable carbonate deposits or scales which interfere with the passage of oil tubing or in the formation itself. The lines and tubing must be protected during this operation from the corrosive attack of the acid. HIBIT-28 will successfully inhibit this corrosion or pitting without interfering with the desired effects required of the acid used.



## **KEM-BRASS**

### **Description**

KEM-BRASS is an acidic liquid product suitable for contemporaneous cleaning and brightening of copper and its alloys.

### **Usage**

KEM-BRASS is used for removing corrosion (green salt deposits) and tarnishes from copper and its alloys giving a satisfactory brightening.

### **Application**

KEM-BRASS is applied in ambient temperature by dipping and in proportion up to 1 to 3 with tap water. The immersion time depends on the condition of the parts and the density of the solution. Generally a contact time of 2-5 minutes is satisfactory. Rinse finally with tap water.

**NOTE** : When the copper components are destined to be painted, instead to use KEM-BRASS we recommend another product of our company named KEM- BRASS A.

### **Safety**

Because of KEM-BRASS is an acidic product, all minimum precautions must be taken when handling (gloves, aprons, boots, glasses etc.).

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## **RUST-CONVERTER**

### **DESCRIPTION:**

RUST-CONVERTER is a thin, liquid metal treatment compound which, when applied to rusted metal, chemically changes the rust (iron oxide) into iron phosphate.

Therefore moisture and oxygen do not attack the metal. The surface produced is an inert, hard and grayish surface which will serve as a firm base for paint.

RUST-CONVERTER is a metal primer not a paint. One gallon of the product covers approximately 600 square feet.

No mixing is necessary because RUST-CONVERTER is furnished in the proper strength for use.

RUST-CONVERTER can also be used on new ferrous metal, aluminum and galvanized iron. It produces a toothed, slightly porous surface to which paint will grip and cling, forming a tight, lasting bond.

### **USAGE:**

- 1. On Rusted Surfaces:** Remove loose rust or scale. Apply by brush, dip, spray or swab and let it dry overnight then paint. A powdery grayish surface usually develops, indicating that it has reacted with the metal. Now moisture cannot penetrate to metal. Brush off any loose powder, apply primer and then finish coat.
- 2. On New Metals:** Pre-clean by removing excess oil or grease with mineral solvent or with our product, LECTROKLEEN. Apply RUST-CONVERTER by brush, dip, spray or swab. Let it dry overnight, brush off any loose powder and the surface is ready for painting.

### **APPLICABLE USE:**

RUST-CONVERTER converts rust on anything made of ferrous metals. Use it on vehicle parts, railroad cars, stockpiled castings, downspouts, stacks, tanks, building, fences, steel windows, girders, roofs, plates, pipe fittings, etc.

### **CAUTION:**

Contains phosphoric acid. Harmful when taken internally. Avoid contact with skin. In case of contact wash immediately with water (see M.S.D.S.).

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## **BUBBLE FLUID**

### **(LEAK DETECTOR)**

**BUBBLE FLUID** is a slightly viscous liquid leak detector which is designed to provide a fast, sure and easy means of detecting leaks or pin holes in welded fuel tanks and pressure tanks or vessels of every description.

**BUBBLE FLUID** mixes immediately and completely in all proportions in distilled or tap water. It is free rinsing, leaving no residues to interfere with subsequent paint adhesion and prevents corrosion since it contains corrosion inhibitors.

The application of **BUBBLE FLUID** to water results in a solution in which the surface tension is amazingly low. Consequently, very small bubbles appear on the surface when air is introduced into the solution.

#### **USE INSTRUCTIONS**

**Tank immersion** : 100 ml **BUBBLE FLUID** / 125 liters of water.

The container to be tested is submerged in the testing tank and simultaneously air under regulated low pressure is compressed in the tank being tested. If the leak is present, tiny bubbles rise to the surface, forming an isolated bubble cluster readily observable.

**Brush-on method** : 100 ml **BUBBLE FLUID** / 3 liters of water.

For brush use, agitate solution violently to obtain suds. Apply the suds to the part being tested. Upon the application of air pressure inside of the vessel leaks are shown by the disruption and bubbling of the suds film.

The **BUBBLE FLUID** solution can be water rinsed or wiped from the surface with water-wet cloths.

**BUBBLE FLUID** is also available in spray cans of 450 ml. The product in spray is used as it is.

#### **Caution:**

Avoid contact with skin and eyes, for further instructions refer to M.S.D.S.

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## **PHOSPHATE COATING**

**PHOSPHATE COATING** is the treatment of iron or steel with a dilute solution of phosphoric acid and other chemicals whereby the surface of the metal, reacting chemically with the phosphoric acid, is converted to an integral, mildly protective layer or insoluble crystalline phosphate.

The weight and crystalline structure of the coating, and the extent of penetration of the coating into the basis metal, can be controlled by the method of cleaning before treatment, the method of applying the solution, duration of treatment, and by modification of the chemical composition of the phosphating solution.

The method of applying phosphate coatings is usually determined by the size and shape of the article to be coated. Small items, such as nuts, bolts, screws and small stampings are coated in tumbling barrels immersed in the phosphating solution, whereas large fabricated articles, such as refrigerator cabinets, which are difficult to immerse, are usually spray coated with the solution while they are on conveyors. Steel sheet and strip may be passed continuously through the phosphating solution or may be sprayed.

Phosphate coatings may range in thickness from less than 0.1 mil to more than 2 mils. Coating weight (milligrams per square foot of coated area), rather than coating thickness, has been adopted as the basis for expressing the amount of coating deposited.

### *TYPES OF PHOSPHATE COATINGS*

Three principle types of phosphate coatings are in general use: zinc, iron and manganese.

Zinc phosphate coatings encompass a wide range of weights and crystal characteristics, ranging from heavy films with coarse crystals to ultra thin microcrystalline deposits.

Zinc phosphate coatings vary from light to dark gray in color. Coatings are darker as the carbon content of the underlying steel increases, and microcrystalline coatings are usually darker gray than coatings of the same weight with coarser crystals. Zinc phosphating solutions containing active oxidizers usually produce lighter colored coatings than do those solutions using milder accelerators.



Zinc phosphate coatings can be applied by spray or immersion, and may be used for any of the applications of phosphating (base for paint or oil,

aid to cold forming, increasing wear resistance or rust proofing). Spray coatings on steel surfaces range in weight from 100 to 1000 mg per sq ft; immersion coatings, from 150-4000 mg per sq. ft.

Iron phosphate coatings were the first to be used commercially. Early iron phosphating solutions produced dark gray coatings with coarse crystals. The solutions in general use today, however, produce a coating of exceedingly fine crystals (almost amorphous in texture) of an iridescent blue to bluish-brown color. These crystals are translucent thus, their color is modified by the surface on which they are deposited.

Although iron phosphate coatings sometimes are applied to steel to provide a receptive surface for the bonding of fabric wood and other material their chief application is as a base for subsequent films of paint.

Under good processing conditions iron phosphate coatings have excellent adherence and provide good resistance to flaking from impact or flexing.

Spray application of iron phosphate coatings is most commonly used, although immersion application also practical. The accepted range of coating weights is 20 to 80 mg per sq ft. Little benefit is derived from exceeding this range, and coatings of less than 20 mg per sq ft are likely to be non uniform or discontinuous.

Manganese phosphate coatings are applied chiefly to ferrous parts (internal combustion engine parts, for example) for break-in and to prevent galling. These coatings are usually black or brown-black; the degree of brownish ness depends on the amount of manganese dioxide included in the coating. However, because practically all manganese phosphate coatings are used as an oil base, and the oil intensifies the black coloring, manganese phosphate coatings are usually referred to as being black.

Manganese phosphate coatings applied only by immersion, requiring times ranging from 5 to 30 min. Controlled coating weights normally vary from 500 to 3000 mg per sq ft, but can be greater if required.



The manganese phosphate coating usually preferred is tight and fine-grained, rather than loose and coarse-grained; however, desired crystal size varies with service requirements. In many instances the crystal is refined as the result of some pretreatment of the metal surface. In general the manganese phosphate crystal is softer, and will therefore break down more readily, than the zinc phosphate crystal.





## **PHOSPHAT – F**

### **DESCRIPTION**

This specification establishes the materials and procedure for the formation of an insoluble mildly protective iron phosphate coating on ferrous surfaces, having an iridescent blue to bluish brown color. This process will produce coatings in accordance with TT-C-490 TYPE II American specification. The thickness of the coating is over 35 mgr/ft<sup>2</sup>

### **APPLICATION**

Iron phosphate coatings are applied to steel surfaces in order to protect them from corrosion but mainly are applied as a base for better paint adhesion (wet or electrostatic).

#### **1st stage : Degreasing - phosphatizing**

Product: PHOSPHAT - F  
Concentration: 5 - 6 % by immersion  
Temperature: 50 - 60 °C.  
Contact time: 5 - 7 min by immersion

#### **2nd stage : Rinsing**

Clean overflowing cool water for 1-2 minutes. Dump & refill daily.

#### **3rd stage : Passivation**

If the water of the rinsing stage is hard it is preferable to use deionized water or perform the passivation stage which increase the anti-corrosion protection of the metal.

Product: HIB  
Concentration: 2 ‰ by immersion or spray.  
Temperature: 50 - 60 °C.  
Contact time: 30 sec.

In some cases the second or the third step may be omitted.

### **GENERAL INFORMATION**

The tanks or the spray equipment could be made from stainless or mild steel. Depending on the production the PHOSPHAT - F solution must be changed every month.

The solution of the passivation stage must be changed every 2 - 4 days. If the second step is omitted the HIB solution should be changed daily.

### **CAUTION/SAFETY**

It contains acidic constituents. Avoid contact with skin, eyes etc.



## **PHOSPHAT-SUPER & PHOSPHAT-SUPER SPRAY** **LIQUID CLEANER/IRON PHOSPHATE**

### **DESCRIPTION**

PHOSPHAT is liquid containing a high concentration of liquid solvent type detergents and mild acidic chemical phosphating compounds. PHOSPHAT is a heavy duty cleaner and iron phosphating compound for use in dip tanks. The primary advantage of PHOSPHAT is its superior cleaning ability, PHOSPHAT provides a more uniform and consistent iridescent phosphate conversion coating on steel and zinc surfaces, and also assures excellent post rush inhibition.

PHOSPHAT-SUPER is used in DIP TANK APPLICATION and PHOSPHAT- SUPER-SPRAY is a low foaming product used in spray application.

### **APPLICABLE GOVERNMENT SPECIFICATION**

Meets TT-C-490, Type II Requirement for Iron Phosphate Coatings.

### **ADVANTAGES**

PHOSPHAT provides the following product features :

1. COMBINES CLEANING AND PHOSPHATING IN ONE STEP, to reduce operational costs.
2. PROVIDES EXCELLENT CLEANING, normally superior to powdered cleaner/iron phosphate compounds.
3. ASSURES LONG TANK LIFE and AMORPHOUS PHOSPHATE COATING for optimum paint adhesion.

### **HOW TO USE PHOSPHAT**

#### **DIP TANK APPLICATION**

##### 1. CLEAN/PHOSPHATE

PHOSPHAT-SUPER at 5-10 % at 20-60 °C for about 5 minutes.

##### 2. RINSE

Clean overflowing cool water for 1-2 minutes. Dump & refill daily.

##### 3. INHIBITIVE RINSE

HIB or HIBI SEAL-NC, 2 ‰ at 20-80 °C for 1 minute.

Dump and recharge weekly.

#### **SPRAY APPLICATION**

PHOSPHAT-SUPER-SPRAY at 1,5-3 % at 20-60 °C for about 2 minutes.

Clean overflowing cool water for 1-2 minutes. Dump & refill daily.

HIB or HIBI SEAL-NC , 2 ‰ at 20-80 °C for 1 minute.

Dump and recharge weekly.

**CAUTION** : PHOSPHAT contains acidic constituents. Avoid contact with skin, eyes etc.

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## **SUPER KLEEN** **Liquid Cleaner / Iron Phosphate**

### **Description:**

**SUPER KLEEN** is a greenish liquid that contains a high concentration of liquid solvent type detergents and acidic chemical phosphating compounds.

### **Usage:**

**SUPER KLEEN** is a heavy duty cleaner and iron phosphating compound used in dip tanks. The primary advantage of **SUPER KLEEN** is its superior cleaning ability as compared with powdered iron phosphating cleaning compounds. Because of its superior cleaning ability, **SUPER KLEEN** provides a more uniform and consistent iridescent phosphate conversion coating on steel and zinc surfaces, and also assures excellent post rush inhibition.

**SUPER KLEEN** is used for contemporaneous degreasing, de-rusting and phosphating of ferrous parts before painting. Can also be used for cleaning aluminum and aluminum alloys.

### **Applicable Government Specifications:**

Meets TT-C-490, Type II Requirement for Iron Phosphate Coatings.

### **Advantages:**

**SUPER KLEEN** provides the following product features:

- COMBINES CLEANING AND PHOSPHATING IN ONE STEP, to reduce operational costs.
- PROVIDES EXCELLENT CLEANING, normally superior to powdered cleaner/iron phosphate compounds.
- ASSURES LONG TANK LIFE and AMORPHOUS PHOSPHATE COATING for optimum paint adhesion.

### **Usage:**

**SUPER KLEEN** is applied at room temperature by dipping and is diluted in water in a ratio of 1: 4. The immersion time is 10-20 minutes. Finally, rinse parts with water preferably hot.

**SUPER KLEEN** can be used as received for removing rust from ferrous parts.

### **Note:**

All tanks containing **SUPER KLEEN** should be equipped with overflow in order to remove easily the floating oil.

The rinse water must be changed daily.

### **Product Properties:**

Appearance: Deep green color

Specific gravity: 1,25 ± 0,05

### **Safety:**

Acidic material. Avoid contact with skin and eyes, in case of contact rinse thoroughly with water. For further instructions refer to Material Safety Data Sheet (MSDS).

### **Packaging:**

**SUPER KLEEN** is available in 260 kg drums or plastic pails.

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## **PHOSPHAT Z – 101** MICROCRYSTALLINE ZINC PHOSPHATE

### **Description:**

**PHOSPHAT Z-101** is an emerald green liquid concentrate of mildly acidic metal phosphates that already contain the necessary catalysts and crystal refining toners required to produce optimum corrosion protection and appearance of the surface finish.

### **Advantages:**

- Provides microcrystalline zinc phosphate coatings that are extremely fine and compact.
- Paint adhesion is improved due to refined crystalline matrix of coating.
- Cost of paint is reduced since the extremely fine-grained phosphate coating allows greater coverage.
- Corrosion protection is increased because of improved paint bond.
- Appearance of paint finish is improved because of smoother microcrystalline finish.
- Saves in operational costs, because of compactness of microcrystalline coating tends to restrict formation of excessively heavy coatings.
- Simplifies process control because of built-in catalysts and toners.

### **Application:**

**PHOSPHAT Z-101** is a chemical concentrate that is specifically formulated to provide smooth, compact, microcrystalline zinc phosphate coatings to steel, zinc and cadmium surfaces. **PHOSPHAT Z-101** coatings provide increased protection from corrosion as well as improved paint adhesion. Because of the compact coating, paint consumption is vastly reduced, and improved luster is obtained.

**PHOSPHAT Z-101** conforms to U.S. Military Specification **MIL-P-16232, Type Z** and **TT-C-490, Type I**.

### **Usage:**

**Precleaning** – Prior to phosphating, parts must be free of all grease, rust, soil, and loose scale. Cleaned parts must be water-break-free after rinsing with clean cold water.

**Phosphating** – The **PHOSPHAT Z-101** is made up by adding 2-3% by volume of the concentrate to fresh water, raising the temperature of the solution to its operational range, and adjusting the composition of the bath to within the control limits.

The bath should be tested and adjusted to operational limits

**Rinse** – 130°F or lower, dump and refill daily.

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**Inhibitive Rinse – HIB** is a non-chromate rinse aid that may be used to replace chromic acid type rinse inhibitors. For best results a clean, fresh water rinse should follow the **HIB** rinse. This can be done by adding **HIB** to the rinse immediately, following the phosphate bath and use clean, hot water in the final rinse.

**HIB** is used 2-3 ‰ in hot water to provide post rust inhibition. Maintain the pH of **HIB** at pH of 3.0 – 4.0 by additions of small amounts of phosphoric acid. Drain tank and recharge daily.

If a chromate type inhibitive rinse is required because of government specifications use **HIBI SEAL-NC** 2-5 ‰ in hot water (140-160°C) and adjust the pH of the solution to pH 3.0-4.0 by the addition of small amounts of phosphoric acid. Drain tank and recharge daily.

#### **Acceleration of Baths :**

Excellent zinc phosphate coatings are normally provided by **ACCEL** baths when operated within the recommended control range. Should lower temperatures or shorter contact time be unavoidable, the bath can be accelerated by **ACCEL** to encourage heavier, more corrosion resistant coatings. **ACCEL** is used by dissolving 1-2 lbs. in 10 gallons of water, and slowly running the solution into the **PHOSPHAT Z-101** bath during production use.

#### **Other Applications:**

**PHOSPHAT Z-101** coatings can also be oiled or impregnated with corrosion inhibitors to provide additional corrosion protection.

The dark gray matte finish provided by **PHOSPHAT Z-101** is attractive, and this coating can be used for a decorative finish.

#### **Equipment:**

**TANK:** Heavy gauge, mild steel or stainless.

**PUMP:** Stainless steel.

**HEATING:** Stainless steel steam coils, internal gas tubes or gas burners.

**DRYING:** Hot chamber, warm air blast.

#### **Caution:**

**PHOSPHAT Z-101** contains acidic ingredients. Avoid contact with skin and eyes.





## **PHOSPHAT – M** **MANGANESE PHOSPHATE**

### **Usage**

Dip phosphating of iron and steel where heavy coating are required, suitable for impregnation with oils, or other lubricants, for friction resistance, and to assist in “break in” of bearing surfaces. **Phosphat – M** is particularly suited to production of such coating on high carbon and hard alloy steels.

### **GOVERNMENT SPECIFICATIONS APPLICABLE**

**Phosphat – M** conforms to the following specifications:

**MIL – P – 16232 B, Type M, Classes 1,2,3**

**MIL – P 50002, Type I, Composition B**

### **Application**

**Preparation of Steel Surface:** Surfaces may be cleaned by abrasive blasting prior to the use of **Phosphat – M**, except for those cases where blasting may be deemed detrimental by the contracting officer, or is waived for other reasons by proper authority. In any event, the metal surface must be subjected to such non – detrimental cleaning and conditioning procedures as are necessary to insure satisfactory phosphating.

When alkaline cleaners are to be used, we recommend our product KEM-2B at a concentration of 4 to 6 oz / gallon and a temperature of 160 – 190°F. Cleaning must be such that no water break is observed when parts are held under running water. Parts must be thoroughly rinsed in clean water after each liquid cleaning or conditioning operation. Water rinses must be kept pure by steady overflow into weir troughs. Rinse tanks are to be dumped and refilled daily.

Where rust and /or scale are to be removed by chemical means, we recommend our product ATAROL a phosphoric acid type conditioner, otherwise sandblasting is recommended.

**Phosphating:** The phosphating bath is made up by addition of 7 to 10 gallons **Phosphat – M** to each 100 gallons clean water. To shorten break-in period, add several pads of steel wool for each 100 gallons bath; this break-in substance is to be used at the start only. Stir, and then heat to operating temperature range.

Immerse the clean parts in the bath at 200-210°F. for a sufficient length of time to produce the coating required by the specifications. Ordinarily this will be for not less than 10 minutes, or more than 30 minutes.

Water is to be replaced as it evaporates from the bath. Most of sludge should be removed from tank at one week to ten-day periods. The bath need be discarded seldom, if ever, provided it is properly cared for and closely as provided below.

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**Water Rinse After Phosphating:** The phosphating parts are to be immediately rinsed in cold or lukewarm clean, overflowing water bath, for not less than 60 seconds.

**Final Chemical Rinse:** As a final processing step immediately before dry-off, the parts are rinsed for not less than 30 or more than 60 seconds in a bath made up with our product HIB, 2- 3 ‰ in water and used at temperature 140 – 180 °F. This rinse must be carefully maintained and controlled according to the Phosphat standard chromic rinse control instructions, copy attached.



## **PHOSPHAT – SOLVE**

### **DESCRIPTION:**

PHOSPHAT-SOLVE is a liquid product that contains solvents and creates a phosphate coating on metallic surfaces, which provides good adhesion of the paint and increased protection against corrosion to the metal.

### **APPLICATION:**

PHOSPHAT-SOLVE is used for the removal of oil, grease etc. Lightly phosphates surfaces and deems them suitable for painting. It has great cleaning abilities, it is fast and easy to use and does not require expensive operational costs.

### **USAGE:**

PHOSPHAT-SOLVE is used as is by sponge, cloth, dipping or spray. The objects are left to dry and afterwards are ready to be painted.

### **NOTE:**

PHOSPHAT-SOLVE is offered in 2 types. PHOSPHAT-SOLVE-S, which is used by dipping and PHOSPHAT-SOLVE-Q, which is fast evaporating and applied by sponge or spray.

### **CAUTION:**

PHOSPHAT-SOLVE is flammable and therefore during its use all safety precautions should be applied. Avoid contact with eyes and skin and do not breathe the vapors (for further instructions refer to MSDS).

### **PACKAGING:**

This product is available in 30-liter pails and 210-liter drums.

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## **HIB & HIBI SEAL – NC** **INHIBITIVE SEAL RINSE AIDS FOR PHOSPHATE COATINGS**

<b>HIBI SEAL – NC</b>	<b>HIB</b>
(Non Chromated)	(Chromated)

### **Purpose**

INHIBITIVE SEAL RINSES are required after iron, zinc, or manganese phosphating processes to assure maximum corrosion resistance and paint adhesion of the phosphate coatings. Since inhibitors are usually affective at very low concentrations will provide the optimum surface passivation required for these phosphate coatings.

### **Description**

<b>HIBI SEAL – NC</b>	<b>HIB</b>
An amber liquid concentrate of Non Chromated inhibitors.	A red liquid concentrate of <b>Chromate and Phosphate inhibitors</b>

### **Use conditions**

<b>HIBI SEAL – NC</b>	<b>HIB</b>
2 – 5 / 00	2 – 3 / 00
20 – 80 C	20 – 80
pH : 3.5 – 6.0	PH : 3.0 – 5.0
Time : 30 – 60 sec.	Time : 30 – 60 sec.

### **Concentration and pH control**

Since it is imperative that these final rinses be as clean as possible, these final inhibitive seal rinse solutions should be made up fresh each day. After charging the inhibitive rinse aid to the fresh water, adjust the pH of the solutions using phosphoric acid when necessary to lower the pH. To extend the effectiveness of these inhibitive rinse solutions for prolonged daily operations, just add 0,5 – 1 KG per tone of rinse aid during each additional 8 hour shift and readjust the pH when necessary.



### **Selecting the proper inhibitive rinse aid**

All two of the above Inhibitive Rinse Aids are affective for use with iron, zinc, or manganese phosphate coatings. Chromate inhibitors generally provide the best post rust inhibition, and should be used whenever chromates can be tolerated.

HIBI SEAL – NC has the distinct advantage of being non - chromated, which is important when waste disposal problems are encountered.

### **Caution**

Refer to individual product labels for precautionary and safe handling information. HIB contains chromic acid. Avoid contact with skin, eyes and clothing. Keep containers well closed.



## **KEMCOT** **ALUMINUM CONVERSION COATING**

### **Description:**

Immersion or spray process for providing aluminum with a golden iridescent chemical film or coating of the surface conversion type, for protection against corrosion and improvement of paint adhesion.

KEMCOT meets the requirements of MIL-DTL-81706A Class 1A Type II.

### **Pre-Cleaning:**

Before immersion in the KEMCOT tank, surfaces must be free from grease, soils and oxides. RANTOL 20-20 (5% in the water at room temperature) is recommended for cleaning and deoxidizing. Parts must thoroughly be rinsed with clean water after cleaning. Rinse tanks should be kept pure and refilled daily.

### **Usage:**

KEMCOT is normally used diluted with water in a concentration of 0,5 – 1%. Mix until all solids are dissolved and ascertain the pH 1,5 – 2,1 by adding small amounts of ammonium hydroxide or nitric acid. The pH will probably be within the correct operating range without additions. The clean aluminum parts are immersed in the KEMCOT bath at room temperatures of about 30 seconds to 5 minutes depending on the aluminum alloy and the condition of the solution. For spray operations the contact time is 15-30 seconds. After treatment the parts should be rinsed thoroughly with water. First in water at ambient temperature and then with deionized water. The final dry-off may be accomplished by conventional methods; however, temperature during drying should not exceed 50°C.

### **Product properties:**

Appearance : Brown powder  
pH (1% sol) : 1,5 – 2,1

### **Safety:**

KEMCOT is caustic. Avoid contact with skin and eyes. Rinse with plenty of water in case of contact. Wear protective clothing when handling.

### **Packaging:**

KEMCOT is available in plastic pails or plastic bags of 25 kg.

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## **CHROMATE CONVERSION COATING (ALODINE) ON ALUMINUM AND ALUMINUM ALLOYS**

Chromate Conversion Coating “ALODINE” is produced in aluminum and its alloys by a chemical treatment using our product, **KEMCOT**. This treatment converts the metal surface to a superficial layer containing a complex mixture of chromium compounds. The coating is usually applied by immersion or spray and meets the requirements of MIL-C-5541 and MIL-C-81706. The appearance of the chromate film can be modified from a clear thin iridescent to the heaviest yellow-brown depending on the composition of the aluminum base material, the thickness of the film and the solution age.

### **Properties & uses:**

**Corrosion Prevention:** Chromate Conversion Coating can provide exceptionally good corrosion resistance depending on the aluminum base material and the film thickness.

**Bonding of Organic Finishes:** The bonding of paint and organic finishes to Chromate Conversion Coatings is excellent due to very good paint adhesion.

**Electrical Resistance:** The contact resistance of articles that have been protected with Chromate Conversion Coating is much lower than that of an unprotected article so a chromate coated article can be used as an electrical ground.

### **PROCESS**

#### **A) METHOD USING HOT TANK FOR DEGREASING.**

	<b>PRODUCT CONCENTRATION</b>	<b>TEMPERATURE</b>	<b>IMMERSION TIME</b>
Clean	ALUMICLEAN 3-5 % Or ALUMINETCH 3-5 %	60 - 90 °C  45 – 65 °C	3-5 minutes  3-5 minutes
Rinse	Clean overflowing hot water. Two water rinses are recommended for better results.		
Desmutting - Deoxidizing	RANTOL 22-22 2-3%	Room	3-5 minutes
Rinse	Clean overflowing cool water.		
Chromate conversion Coating	KEMCOT 0,5-1 %	Room	30 sec – 5 minutes
Rinse	Clean overflowing cool water.		
Rinse	Clean overflowing deionized water. Then followed by drying.		

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**B) ALTERNATIVE METHOD USING ONE COLD BATH FOR  
SIMULTANEOUS DEGREASING AND DEOXIDIZING.**

	<b>PRODUCT CONCENTRATION</b>	<b>TEMPERATURE</b>	<b>IMMERSION TIME</b>
Cleaning-Deoxidizing	RANTOL-22-22 F 2-5 %	Room	5-10 minutes
Rinse	Clean overflowing cold water. Two water rinses are recommended for better results.		
Chromate conversion Coating	KEMCOT 0,5-1 %	Room	30 sec – 5 minutes
Rinse	Clean overflowing cool water.		
Rinse	Clean overflowing deionized water. Then followed by drying.		

**Processing equipment:**

Tanks for RANTOL-22-22, RANTOL-22-22F, KEMCOT must be made from acid resistant material and must be of type 316 stainless steel or of mild steel if lined with polyvinyl chloride.



## **KEMCOT-LG** **GREEN - ALUMINUM CONVERSION COATING** (Free of hexavalent chromium)

### **Description:**

KEMCOT-LG is a special liquid product for providing aluminum with a green chemical film or coating of the surface conversion type, for protection against corrosion and improvement of paint adhesion.

### **Pre-Cleaning:**

Before using KEMCOT-LG surfaces must be free from grease, soils and oxides. RANTOL 20-20 (5% in the water at room temperature) is recommended for cleaning and deoxidizing. Parts must thoroughly be rinsed with clean water after cleaning. Rinse tanks should be kept pure and refilled daily.

### **Application:**

Use KEMCOT-LG is usually used diluted with water in a concentration 10 % by adding small amounts of ammonium hydroxide or nitric acid if necessary. The clean aluminum parts are immersed in the KEMCOT-LG bath at room temperatures of about 3 minutes to 5 minutes depending on the aluminum alloy and the condition of the solution. For spray operations the contact time is 1-2 minutes.

After treatment the parts should be thoroughly rinsed with water. First in water at ambient temperature and then with deionized water.

The final dry-off may be accomplished by conventional methods; however, temperature during drying should not exceed 50°C.

### **Usage:**

The conversion coating on aluminum does not contain hexavalent chromium but trivalent chromium and is used where hexavalent chromium is not permitted.

### **Composition of Green coating:**

$\text{CrPO}_4 \cdot 6\text{H}_2\text{O}$	75-90 %
$\text{Al}_2\text{O}_3 \cdot 3\text{H}_2\text{O}$	10-25 %

### **Safety:**

Avoid contact with skin and eyes. Rinse with plenty of water in case of contact. Wear protective clothing when handling. For further information refer to Material Safety Data Sheet (MSDS).

### **Packaging:**

KEMCOT-LG is available in 20 liter pails or 210 liter drums.



## ALCOT NC Chrome-free passivating agent

### Description:

ALCOT NC is a chrome-free pretreatment process for aluminum and its alloys. It is based on zirconium and titanium components and it is suitable for immersion and spray application.

ALCOT NC provides a colorless chemical conversion coating to the surface which enhances adhesion and corrosion resistance.

### Advantages:

- Environmentally friendly.
- It contains no heavy metal ions.
- Used at ambient temperature.
- Easy to handle-reduced amount of sludge.
- Excellent corrosion resistance and paint adhesion.
- Safe in use -improves workers safety.

### Usage-Typical procedure:

1.	2.	3.	4.	5.	6.	7.(Optional)
Cleaning	Rinse	Pickling	Rinse	DI-Rinse	ALCOT NC	DI-Rinse

### Operation parameters:

Bath make up concentration	7-10 g/l (no rinse)
	20-30 g/l (rinse)
Bath temperature	20-40 °C
pH range	2,8-3,8
Bath conductivity	500-2000 μS
DI water conductivity	< 15
Treatment time	30-60 seconds
Air dry	60-130 °C
Coating weight	3-20 mg/m <sup>2</sup> Ti
	3-20 mg/m <sup>2</sup> Zr

### Safety

Avoid contact with skin and eyes. For further information refer to M.S.D.S.



## **CLEANING AND PASSIVATION**

### **OF STAINLESS STEEL**

A standard and essential practice in order to prevent corrosion on stainless steel surfaces is to clean and passivate these surfaces prior to commissioning. This kind of treatment is done on cargo tanks, storage tanks, piping systems etc.

This work is carried out in accordance with the ASTM A 380 procedure.

The general procedure to be followed consists of the below described steps:

- **precleaning, degreasing, pickling, passivating, disinfecting.**

#### **Precleaning**

It is performed in order to remove all solid matter and to prevent damages to pumps and cleaning equipment.

#### **Degreasing**

With this step all oil, grease and dirt are removed.

A solution of our product ARR-SAFETY LIQUID (non caustic alkaline cleaner) will give you the best results.

#### **Pickling**

In this step using our product PICKLING FLUID neat, will remove all scales and oxide residues.

The time for pickling may vary 1-4 hrs and depends on the discoloration of stainless steels, the welding seams and the temperature of the solution. The recommended solution temperature is approximately 20 °C for efficient pickling. Drain the system and rinse thoroughly with water. After rinsing, if required passivation should follow immediately.

#### **Passivating**

In this step a new oxide layer forms by using our product PASSIVATING FLUID neat.

Drain the system and rinse thoroughly, preferably with demineralised water.

**Our company offers also the method and the reagents required in order to test out and confirm the well done of the passivation on the stainless steel surfaces.**

#### **Disinfecting**

This step is required only if food is to be stored or transported in the tanks concerned.

Our product BELCAN gives the appropriate disinfection.

**Cautions:** Both pickling and passivating fluid are strong acidic products. Avoid contact with skin, eyes and clothing.

Use in ventilated areas.

**Hazardous Indications** : R : 26/27/28 R : 34/35.

Wear suitable protective clothing and gloves. In case of contact with eyes rinse immediately with plenty of water and seek medical advice. In case of an accident or if you feel unwell seek medical advice and show the label or this sheet to the doctor.

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## **PICKLING FLUID** **FLUID FOR PICKLING** **AUSTENITIC STAINLESS STEEL**

### **Description:**

PICKLING FLUID may be used only on austenitic stainless steel as it corrodes other materials.

It removes weld slag, annealing scale, grinding dust and iron parts etc., which prevent a proper passivation of the stainless steel.

### **Applications:**

PICKLING FLUID is used mainly for pickling installations and tanks. It may be used by circulation, spray or in immersion baths.

### **Usage:**

**Pretreatment:** Before commencing, clean and degrease the surfaces to be pickled, this will give the basis for uniform pickling. Use ARR-SAFETY LIQUID for degreasing small metal surfaces. To degrease tanks etc. we advise the use of a 1-5% solution of ARR-SAFETY LIQUID in warm water. After pickling rinse thoroughly with a jet of water.

**Circulation Method:** This method is used mainly for pipe systems. Fill the system with cold undiluted PICKLING FLUID. Pickling will take 2 to 6 hours depending on the degree of soiling and on the kind of austenitic steel. Do not pickle longer than necessary. Drain the system and rinse carefully, preferably, with demineralized water. After rinsing if required passivation should follow immediately.

**Spraying:** Used mainly for very large surfaces and tanks. Use equipment not susceptible to acids. Duration of spray method depending on the amount of soil, 2-6 hours. Afterwards rinse with plenty of clean water. After rinsing the surfaces need to be passivated. Use our product PASSIVATING FLUID.

**Immersion Bath Method:** Fill a plastic or plastic lined bath with undiluted PICKLING FLUID. Place the articles to be pickled into the bath and leave them to soak for 1 to 6 hours depending on the degree of soiling and the kind of austenitic steel. Remove the articles from the bath and spray them with a powerful water jet. Demineralized water should preferably be used for this purpose. Passivation should follow immediately after spraying.

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**Passivation:**

A protective oxide layer will form on the austenitic stainless steel only if oxidizing conditions are present. For example during long-term rinsing in oxygen rich water or during storage in the open air. In these circumstances the steel automatically passivates. Because this passive layer takes a long time to develop to the correct thickness we recommend passivating with PASSIVATING FLUID particularly if the stainless steel is exposed to corrosive conditions soon after the pickling treatment. Good results are obtained if the object is sprayed / brushed with PASSIVATING FLUID immediately after it has been rinsed. For further information refer to Product Data Sheet of PASSIVATING FLUID.

**Caution :**

Avoid contact with skin and eyes. For further instructions refer to Material Safety Data Sheet.



## **PASSIVATING FLUID** **FLUID FOR PASSIVATING** **AUSTENITIC STAINLESS STEEL**

### **Description:**

PASSIVATING FLUID creates a protective oxide layer on stainless steel surface after activation (PICKLING).

Passivates the surface as described.

Dissolves chloride remains from fresh water.

Does not create toxic air in tanks.

No further processing is needed.

PASSIVATING FLUID is used insoluble only on stainless steel. It can be used diluted as an aluminum cleaner.

### **Applications:**

PASSIVATING FLUID is used mainly for stainless steel structures and tanks after activation (PICKLING).

It is used by two methods: 1) By recirculation

2) By spray.

### **Usage:**

Passivating process with PASSIVATING FLUID is used only if stainless steel is activated earlier with PICKLING FLUID.

#### **Circulation Method:**

This method is used mainly for pipe systems. Fill the system with cold undiluted PASSIVATING FLUID. Time of processing is about 2 hours. Drain the system and rinse with water.

#### **Spraying Method:**

Used mainly for tanks with tank cleaning machines that are acid resistant. PASSIVATING FLUID is used neat by spray for 15 minutes. Afterwards rinse with plenty of clean water.

Small parts can be passivated by dipping approximately for 1 hour.

#### **Aluminum cleaning:**

For cleaning aluminum use PASSIVATING FLUID diluted 1:1 with water. Time of cleaning is about 2 hours. Rinse with plenty of clean water.

### **Caution :**

Avoid contact with skin, eyes and clothing. For further instructions refer to Material Safety Data Sheet.

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## **ADICO - L**

### **DESCRIPTION**

ADICO - L is a mild alkaline liquid, which contains inhibitors, anti-oxidant agents and other special substances.

It is odorless and non-fuming.

### **APPLICATION**

ADICO - L is used for the temporary protection of the metals and gives also a passivate film which protects the surfaces against corrosion.

### **DIRECTIONS OF USE**

ADICO - L is used diluted in water in a ratio of 2 - 5 % depending of the hardness of the water and the desired results. For special purposes can be used as it is without dilution.

ADICO - L can be used by immersion, spray or swab and for better results we suggest the immersion method.

When ADICO - L is diluted in hot water (60 - 80 °C) the results are much better because the surface dries faster.

When ADICO - L is used after the rust removing from the surfaces, all parts must be rinsed very well with water prior to apply ADICO - L.

### **CAUTION/SAFETY**

ADICO - L is safe during its using.

#### **Attention :**

Do not mix ADICO - L with acids and oxidizers.

#### **Note :**

ADICO - L is also available in a powder - form.



## **ANTICORROSIVE-225**

**(Non chromate, non nitrite product)**

### **DESCRIPTION**

ANTICORROSIVE-225 is a mild alkaline liquid which contains inhibitors, anti-oxidant agents and other special substances.

It is odorless, non fuming, non-toxic and may be used on metals that come in contact with food stuff.

### **APPLICATION**

ANTICORROSIVE-225 is used for the temporary protection of all metals and gives also a passivate film which protects the surfaces against corrosion.

### **DIRECTIONS OF USE**

ANTICORROSIVE-225 is used diluted in water in a ratio of 2 - 5 % depending of the hardness of the water and the desired results. For special purposes ANTICORROSIVE – 225 can be used neat without dilution.

ANTICORROSIVE-225 can be used by immersion, spray or swab but for better results we suggest the immersion method.

When ANTICORROSIVE-225 is diluted in hot water (60 - 80 °C) the results are much better because the surface dries faster.

When ANTICORROSIVE-225 is used after the removal of rust from surfaces, all parts must be rinsed very well with water prior to apply ANTICORROSIVE-225 .

### **CAUTION/SAFETY**

ANTICORROSIVE-225 is safe during its use but, contact with eyes and skin should be avoided.



## **PROTECTIVE OIL N° 4**

### **Corrosion Preventive Compound Soft Film**

#### **Protects Metals Against Rust and Corrosion for Indoor Storage**

##### **Description:**

**PROTECTIVE OIL N° 4** is a corrosion preventive compound specially designed to protect metals against rust and corrosion for indoor storage, semi-sheltered outdoor storage and shipment. When used as recommended **PROTECTIVE OIL N° 4** is easy and economical to apply and remove and provides a durable, long lasting, soft coating suitable for protecting metal surfaces against the elements of corrosive environment.

##### **Advantages:**

Forms a corrosion resistant and salt water resistant protective film.

Stops grinding by penetrating deep and lubricating, hinges, locks, mechanisms, threads, etc.

After its application surfaces remain lubricated.

Meets corrosion requirements of U.S. Military Specification MIL-C-16173E Type II soft film.

##### **Product Characteristics:**

Flash point:	>200°C
Pour point:	<-5°C
Viscosity (40°C):	>25° cst
Specific gravity:	0.9 ± 0.01 gr/cm <sup>3</sup>

##### **Intended Usage:**

a) For extended indoor protection of interior or exterior surfaces of machinery, instruments, bearings or materials with or without use of supplementary barrier materials.

b) For outdoor protection of material for limited periods where metal temperatures do not reach levels that produce prohibitive flow of the corrosion preventive film.

##### **Alternative Usage:**

**PROTECTIVE OIL N° 4** can also be used for electric motors, outboard engines, distributors, spark plugs, relays, etc.

##### **Directions for Use:**

**PROTECTIVE OIL N° 4** is used in full strength by spray, immersion or swab. Allow **PROTECTIVE OIL N° 4** to dry to form a protective anti-corrosive film.

##### **Product Removal:**

**PROTECTIVE OIL N° 4** is easily removed from parts by solvent wiping, steam gun cleaning or alkaline hot tank immersion.

##### **Caution:**

Avoid contact with skin and eyes. For further information refer to Material Safety Data Sheet (MSDS).

##### **Packaging:**

**PROTECTIVE OIL N° 4** is offered in 4, 13, 20 and 30 liter pails or 210 liter drums.

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**WATER DISPLACER**  
***CORROSION PREVENTIVE COMPOUND,***  
***WATER DISPLACING,***  
***ULTRA-THIN FILM***

**MIL-C-81309, TYPE III, SOFT FILM (AVIONIC GRADE)**

**Description:**

A fast acting water and moisture displacer fluid that quickly dries out machines and electrical equipment.

It is rust preventive (ultra thin film) and protects the surfaces from rust and corrosion.

It allows quick starting of wet ignition systems and electric motors and equipment without disassembly or removal.

It eliminates moisture from the electrical systems of various machines.

Penetrates existing rust and forms a film to prevent further corrosion.

Cleans and lubricates the surfaces it is applied.

**Applications:**

- Wet ignition systems on cars, trucks, ships, etc.
- Wet electric motors and starters in power plants, factories, shipboard, etc.
- Cutting tools, hand tools, micrometers and measurement instruments.
- Seagoing equipment and Outboard engines.
- Pumps and valves.
- Aviation equipment.
- Cleaning compound for bore of small arms and automatic aircraft weapons.

**Specification:**

**This product meets the following U.S. Military Specification:**

**a) MIL-C-81309E TYPE III, SOFT FILM (AVIONIC GRADE)  
(CORROSION PREVENTIVE COMPOUND, WATER DISPLACING ULTRA  
THIN FILM)**

**Usage:**

Spray uniformly. Do not wipe off the surface. As the solvent evaporates it leaves a protective soft film on the surface with the above advantages.

**Caution:**

Avoid contact with skin and eyes. For further information refer to Material Safety Data Sheet.

**Packaging:**

The product is available in 450 ml aerosol spray and 20 liter pails.





## **LUBRICOOL N<sup>o</sup> 18** **EMULSIFIABLE CUTTING OIL** **COOLANT – LUBRICANT – RUST PREVENTIVE**

**Description:**

Emulsifiable oil machining lubricant which contains lubricant additives, rust inhibitors, emulsion stabilizer and bacteriostats to assure effective cutting tool lubrication and prolonged service life.

**Purpose:**

**LUBRICOOL N<sup>o</sup> 18** is an Emulsifiable Oil base coolant used for machining and cutting operations. When mixed with water it forms a milky oil in water emulsion that provides effective lubrication and rust protection.

**Advantages:**

**LUBRICOOL N<sup>o</sup> 18** provides the following product features:

- Oil base assures optimum lubrication
- Water dilution provides maximum cooling efficiency
- Inhibited to provide effective rust protection
- Long in service life maintained by effective bacteriostats
- Non-odorous due to careful selecting of petroleum derivatives
- Biodegradable to permit safe and inexpensive disposal

**Application:**

Concentrations of **LUBRICOOL N<sup>o</sup> 18** will vary depending on the hardness of the metal, severity of the cut, machine speed and type of cutting tool. A general guide for use of **LUBRICOOL N<sup>o</sup> 18** is:

OPERATION	CONCENTRATION IN WATER
Grinding	3 – 7 %
Turning	
Drilling	
Milling	
Gear Cutting	5 – 10 %
Tapping	
Broaching	
Reaming	

**NOTE: When used on aluminum the concentration should be increased.**

**Caution:**

If swallowed seek medical advice. For further information refer to Material Safety Data Sheet

**Packaging:**

The product is available in 4 Lt or 31 Lt pails and 210 Lt drums.



## **K-2015-L & K-2015-LS**

### **Description**

K-2015 is a very strong acid activated paint stripper, tank-type in liquid form with two-layers.

### **Application**

K-2015 is especially designed for removing powder coatings.

It is excellent for the removal of all types of paint coatings such as polyurethane, epoxies, nitrocellulose etc.

K-2015 is offered in two types:

- a) K-2015-LS. It is generally safe on all metals except magnesium and magnesium alloys.
- b) K-2015-L. It is stronger than the above but except the magnesium the upper layer could also affect the aluminum.

### **Usage**

K-2015 is used only cold and by immersion. The parts to be stripped must be totally immersed in the lower layer. Most paint schemes will be removed fairly readily but the very resistant types may require several hours soaking.

After soaking parts must be rinsed with water under pressure.

### **Product properties**

Appearance: Liquid with two-layers.

pH (upper layer) : < 3.

### **General information**

Polyethylene or stainless steel are recommended for tank construction.

The upper layer is an aqueous solution containing anti-corrosion agents, special additives etc.

The aqueous solution of upper layer prevents the evaporation of the lower layer, which is the drastic one.

Add water in order to minimize the drag-out loss of the upper layer.

### **Safety**

K-2015 is an acidic product containing chlorinated solvents and phenolic bodies. Avoid contact with skin, eyes and clothing. Gloves, goggles, face shields are recommended when handling. For further information refer to Material Safety Data Sheet (M.S.D.S.).

### **Packaging**

K-2015 is available in 55 gallons drums.

**NOTE:** Use these products only when the results of our product S-2055 are not satisfactory.

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## **S - 2055**

### **(CARBON AND PAINT REMOVER)**

#### **Description**

S-2055 is a two layers phenolic type, liquid product, which meets the requirements of MIL-C-19853 Type I, class 2 as a carbon remover and MIL-R-83936 A Type I, class II, and Type II, class II as a paint remover.

Also meets the requirements of BOEING DOCUMENT D6-17487.

#### **Application**

S-2055 is applied for removing paint coatings from the landing gear wheels of aircrafts and for removing carbon deposits, oils, greasers etc. from the components of reciprocating and "jet" engines of the aircrafts.

It is safe on aluminum, ferrous, magnesium etc. Doesn't attack the anodize coatings.

#### **Usage**

S-2055 is used cold and only by immersion.

The parts to be cleaned must be totally immersed in the lower layer and should be positioned in baskets so that minimum drag-out occurs.

Paints and lacquers are usually softened in about 30 - 45 minutes and sludge of carbon/burnt oil will require a soak of about 1 - 3 hours. Hard carbon and very resistant types of paint may necessitate an overnight soak to affect removal. The paint and carbon can be removed after softening has taken place by high pressure water rinsing.

#### **Product properties**

Appearance : Two - layers liquid.  
pH (lower layer) : >10  
Corrosiveness : Doesn't corrode metals.  
May swell rubbers.

#### **General information**

Mild steel or stainless steel tanks are suitable for operating baths.

The upper layer is an aqueous solution which contains catalysts and corrosion inhibitors. Prevents also the evaporation of the lower layer.

In time to time an addition of water is necessary in order to minimize the drag-out of the upper layer.

#### **Safety**

Contains phenols and chlorinated hydrocarbons. Avoid contact with skin and eyes. Wear protective clothes when handling.

#### **Packaging**

It is available in 55 gallons drums.



## **K – 2025** **(EPOXY & POLYURETHANE PAINT REMOVER)**

### **Description**

**K-2025** is a very effective, thickened paint stripper, which meets the requirements of MIL-R-81294D Class 1.

### **Application**

**K-2025** is especially designed for removing epoxy and polyurethane paints as well as other difficult to remove organic coatings from the metal surfaces of the aircrafts. It is safe for all type of metals.

### **Advantages**

- Safe to all metals.
- Very effective, normally removes more than one coating of paint.
- Non-flammable.
- Easily rinsed with cold water.
- Can be applied by brush or non-atomizing spray methods.
- Used as received. No mixing or dilution required.
- Used at room temperature.

### **Usage**

**K-2025** can be applied as received by brush or spray. Because it is thick it is ideal for vertical surfaces.

Allow **K-2025** sufficient dwell time for thorough loosening or blistering of the paint. When paint is loose, thoroughly agitate all areas with a stiff bristle brush. The complete removal of the paint residues is accomplished with high pressure, high volume, cold water or with a steam cleaning machine.

Normally a coat of **K-2025** is sufficient to remove more than one coating of paint.

Where multicoat systems have to be removed, it may be necessary to use more than one application of **K-2025**.

### **Safety**

**K-2025** contains chlorinated hydrocarbons and phenolic bodies. Avoid contact with skin, eyes and clothing. Gloves, goggles, face shields are recommended when handling. For further information refer to Material Safety Data Sheet.

### **Packaging**

**K-2025** is available in 55 gallons.



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