



# Main Product Document

(Combined PDF)

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**Section 4 - - - - - Kreem Tank Rust FAQ Handout**



# 1. Kreem Fuel Tank Liner



## ***Description:***

KREEM FUEL TANK LINER is designed for use as a preventive maintenance product in metal tanks new and old; containing gasoline, gasohol, or diesel. KREEM TANK LINER has a unique formulation with extremely rapid set-up that prevents leakage from hairline cracks and seam pinholes by coating the tank's inner surface with a fuel resistant elastomer. Not for plastic tanks. KREEM is NOT compatible with all fiberglass tanks. You must spot test before use. Read the Kreem "how to" brochure for detailed application instructions.

**STORAGE & HANDLING:** Store product at 60-80 degrees for maximum storage life. High temperatures reduce normal storage life. Lower temperatures cause increased viscosity of a temporary nature. Rotate stock on a first in - first out basis.

## ***Application:***

### **SURFACE PREPARATION:**

It is critical that the inside of the tank have an oil-free surface without rust to insure proper adhesion. We recommend Kreem Tank-Prep Kit A & B, our two part system for rust removal and metal etching.

1. Wash out tank with hot soapy water. If the tank is badly rusted and has loose flaky rust add stones or nuts and bolts and agitate to remove the loose rust. For new tanks it is important to remove the oily protective coating. An industrial strength detergent, or a commercial degreaser/cleaner like KREEM's new Tank Cleaner/Degreaser, acetone, M.E.K. should be used.



2. After completing step 1, and to obtain maximum adhesion, the surface rust should be removed and the metal surface etched, this can be accomplished by using Kreem Tank Prep A & B Kit, or some other acid based rust remover that also etches metal. Repeat if necessary until all rust is removed.

3. Rinse tank with water until all traces of Tank-Prep A (acid etch) are removed. Drain out excess water. Using Tank-Prep B (acetone or M.E.K.) rinse thoroughly removing trace amounts of water. CAUTION: these chemicals are flammable. The tank is now ready for immediate coating.

## APPLICATION

1. Shake or stir well before use. Keep container tightly closed when not in use. Stop all outlets except fill spout.

2. Pour Liner into tank and coat entire inner surface by slowly rotating tank in all directions. When all surfaces have been completely coated, a generous excess should remain. Let tank stand for 8-10 minutes with spout open, then close spout and slowly rotate tank allowing excess to re-coat all surfaces. Let tank stand for an additional 8-10 minutes with spout open however, this time on a different side. Repeat this until the tank has the desired coating. Do not allow coating to drain to one area and dry. Drain off excess coating for later use.

3. Drain any excess, remove all stops and allow to air-dry in a well ventilated area for at least 24 hours. A nozzle from a low pressure air compressor blowing lightly into the fuel spout and out another opening will greatly reduce setup time.

4. For extra protection, air-dry first coat for 6 hours or longer and repeat step 2 of application process.

### ***Quantity Required***

For small tanks (1-5 gallons) use one pint LINER. For larger tanks use one quart per 20 gallon of tank capacity. If the tank contains baffles, be sure to consider the increase in surface area. For spraying or brushing thin with methyl ethyl ketone to desired consistency. Remove the tank from the vehicle, remove any valves and petcocks, and stop all outlets.

### ***Caution***

Kreem Tank Liner is not designed for use in aircraft oil tanks or tanks using a plastic component also not for tanks containing liquids above 238 degrees F.

CAUTION: Surface prep solutions may damage paint.

CONTAINS METHYL ETHYL KETONE DO NOT BREATHE FUMES



Avoid contact with eyes; keep from heat, sparks or flame. do not smoke, extinguish all flames and pilot lights and turn off stoves, heaters, electric motors and all other sources of ignition during use and until all vapors are gone. Avoid prolonged contact with skin or prolonged breathing of vapors.

FIRST AID: In case of eye contact flush thoroughly with water. If irritation persists, get medical attention. If swallowed do not induce vomiting. Get medical attention immediately. If vomiting occurs spontaneously, keep victim's head below his hips to prevent his breathing the vomit into his lungs.

KEEP OUT OF REACH OF CHILDREN

***Important Notice:***

The following is made in lieu of all warranties express or implied. Seller's and manufacturer's only obligation shall be to replace such quantity of the produce provided to be defective. Neither Seller nor manufacturer shall be liable for any injury loss or damage, direct or consequential arising out of the use or the inability to use the product. Before using user shall determine the suitability of the product for his intended use and user assumes all risk and liability whatsoever in connection therewith. The foregoing may not be altered expect by an agreement signed by the officer of seller and manufacturer - KREEM PRODUCTS.

## 2. Kreem Tank Prep



***Description:***

1 Pint Part A & 1/2 Pint Part B

Dissolves Rust – Etches Metal



KREEM Tank Prep is a two part system to prepare metal fuel tanks before coating with KREEM FUEL TANK LINER. Used as directed Tank Prep will remove rust and etch metal surface to ensure maximum adhesion.

***Application:***

1. Read warning statements on this label and on Part B label.
2. Remove the tank from the vehicle, remove any valves and petcocks and stop all outlets.
3. Wash out tank with hot soapy water. If the tank is badly rusted and has loose flaky rust add stones or nuts and bolts to agitate to remove loose rust.
4. For new tanks, it is important to remove oily protective coating before using Tank Prep. An industrial strength detergent or commercial degreaser/cleaner like KREEM's New Tank Cleaner/Degreaser or acetone should be used.
5. Pour Tank Prep A into tank and add 5 gallons of warm water. Tank Prep A works best when tank is completely full and in contact with all metal surfaces. If this is not possible you should turn the tank to different positions so that the solution has extended contact with all metal surfaces.
6. Leave Tank Prep A in the tank until all the rust is dissolved and the metal is etched to a dull gray finish. The time required will depend on the amount of rust in the tank. New tanks can be etched in 4 hours. Rusty tanks will take longer; we suggest overnight.

**ALLOW TANK TO VENT. DO NOT ALLOW PRESSURE TO BUILD UP!**

7. Drain Tank Prep A solution into a plastic container and check tank. If all rust is removed proceed to step B. If rust is still present add saved Tank Prep A solution to tank again until rust is removed.
8. Flush the tank with clean water until rinse water no longer foams and all traces of Tank Prep are removed. Remove all excess water.
9. Immediately rinse tank interior with full-strength Tank Prep B and agitate to ensure thorough treatment. Drain out all excess Tank Prep B.
10. Immediately seal the tank with KREEM FUEL TANK LINER according to label directions.

***Quantity Required:***

Tank Prep-A



Concentrated! Makes 2-1/2 Gallons

***Caution***

Tank Prep-A

Before using, user shall determine the suitability of the product for intended use, and user assumes all risk and liability whatsoever in connection herewith. The foregoing may not be altered except by an agreement signed by the offices of seller and manufacturer –  
KREEM PRODUCTS

WARNING: DANGER-MAY CAUSE BURNS – HARMFUL IS SWALLOWED

Contains phosphoric acid. Avoid contact with skin, eyes and mucous membranes. In case of contact, flush with cool water. For eyes, get prompt medical attention. If swallowed, give 1 or 2 glasses of water and call physician immediately.

KEEP OUT OF REACH OF CHILDREN

Tank Prep-B

WARNING STATEMENT: DANGER! FLAMMABLE!

CONTAINS METHYL ETHYL KETONE

Tank Prep-B solution will damage paint.

USE WITH ADEQUATE VENTILATION - DO NOT BREATH VAPORS

Avoid contact with eyes. Keep from heat, sparks or flame. Do not smoke; extinguish all flames and pilot lights and turn off stoves, heaters, electric motors and other sources of ignition during use and until all vapors are gone. Avoid prolonged contact with skin or prolonged breathing of vapors.

FIRST AID: In case of eye contact, flush thoroughly with water. If irritation persists, get medical attention. If swallowed not do not induct vomiting. Get medical attention. If vomiting occurs spontaneously, keep victim's head below his hips to prevent his breathing the vomit into his lungs.

KEEP OUT OF REACH OF CHILDREN



### 3. Kreem Tank Mask



***Description:***

Forms a protective film to protect paint.

Rinses off with water!

Before you KREEM your tank, Protect the paint with Tank Mask!

No Special Equipment needed.

KREEM TANK MASK is a water-based masking liquid designed to be brushed onto painted motorcycle gas tanks and other painted surfaces where it dries to a non-tacky film that protects surfaces against KREEM's Fuel Tank Liner and Tank Prep B. TANK MASK also traps dirt and dust under its protective film and is safe for all thoroughly cured painted surfaces.

***Application:***

1. Remove dust and dirt from all surfaces to be protected. Make sure surface is dry.
2. Use a paint brush to apply TANK MASK to the entire surface to be protected and let dry 20-30 minutes. Use two or three coats for maximum protection. Note: Drying time is affected by temperature, humidity and air movement. Apply at 70 degrees F or above. Use of heat or forced air movement will speed dry time. TANK MASK must be dry before using Tank Prep A&B and Tank Liner.
3. Remove TANK MASK by peeling or wash with warm, soapy water and sponge or soft cloth.



***Quantity Required:***

NA

***Caution:***

CONTENTS: Water, Vinyl-Acetate-Vinyl Alcohol Polymer, Glycerin

## 4. Kreem Tank Cleaner/Degreaser



***Description:***

Aftermarket New Tank Cleaner & All Purpose Degreaser

All Natural Ingredients – 16 fl. oz. (1 pint)

KREEM's New Tank Cleaner is designed to remove the protective oil film that is present on most aftermarket, new M/C gas tanks. New tanks should be thoroughly degreased prior to using KREEM's Tank Prep A & B fuel tank liner.

***Application:***

Pour contents into tank and shake tank for 5 minutes. Be sure that all internal surfaces of the tank have been rinsed with the new tank cleaner.

Drain New Tank Cleaner and rinse with water. The tank is now ready for KREEM's Tank Prep A & B and KREEM sealer.

***Quantity Required:***

DIRECTIONS FOR ALL-PURPOSE DEGREASING





KREEM New Tank Cleaner is an excellent all-purpose degreaser that can be used for all types of cleaning.

Examples & Dilution Rates:

Light grease & general cleaning dilute 1:10 with water.

Sludge, tar, paint, overspray and equipment and machinery cleanup dilute 1:4 with water.

Asphalt removal and other tough substances use full strength.

NOTE: Not for use in vapor degreasing equipment. It is not necessary to heat KREEM New Tank Cleaner for effective cleaning/degreasing.

## 5. Blue Shield



### *Description:*

An internal exhaust pipe coating that shields against pipe blueing on properly tuned engines – 16 fl. oz. (1 pint)

Blue Shield is an internal exhaust pipe sealant that is designed to prevent ‘pipe blueing’ on properly tuned motors. Since ‘pipe blueing’ is caused by excessive heat it may still occur if an engine is not in proper tune or if the carburetor is jetted too lean. Slight blueing or discoloration may occur on pipes with extremely sharp bends coming from heads.



***Application:***

NOTE: Read instructions thoroughly before applying Blue Shield. For use on new exhaust pipes only. Inside of pipes must be free from dirt and residue. Clean with alcohol or solvent.

PROVIDE ADEQUATE VENTILATION DURING USE. A DISPOSABLE FACE DUST MASK IS RECOMMENDED.

Important: If coating a pipe with muffler, special care must be taken to ensure that Blue Shield does not enter muffler baffle.

Blue Shield is designed for use on new pipes only. Inside of pipes must be clean and free from oil. If dirt and oil are present, clean with alcohol or solvent. Do not use alcohol or solvent on pipes with fiberglass baffles.

1. Shake or stir coating cement well.
2. Cover one end of pipe with duct tape. (If coating pipes with muffler, cover muffler end first.)
3. Pour contents of bottle into open end of pipe. (If coating pipes with muffler, hold pipe at an adequate angle to ensure no Blue Shield enters the muffler baffle.)
4. Cover open end of pipe with duct tape and rotate until inside of pipe is evenly coated.
5. Remove tape and drain excess Blue Shield, collecting it for reuse. Hang pipe with filler end down for 1 hour. Air dry in warm, dry area of 6-12 hours, or oven dry at 150-175 degrees for 1 hour.
6. Apply a second coat following the same steps.
7. Remove any excess Blue Shield on outside of pipe by knocking off with a blunt object.
8. Wash hands and clothing thoroughly after applying Blue Shield.
9. Install tail pipe assembly.

NOTE: Generally discoloration of chrome tail pipes occurs in the first 1-2 feet of the pipe. A uniform, dual coating in this area will minimize the potential of chrome discoloration under normal vehicle operating conditions.



***Quantity Required:***

*NA*

***Caution:***

CAUTIONS: May be irritating to skin, eyes and respiratory tract. Wear gloves to protect skin. May be harmful if inhaled or swallowed.

Wash all exposed skin areas gently with soap and warm water after handling or contacting product.

Wash work clothes separately from other clothing and rinse washing machine thoroughly after use or provide disposable clothing.

WARNING: Exposure to dried or fired material may post additional hazards.

Possible cancer hazard based on tests with laboratory animals.

Crystobalite (crystalline silica) formed at high temperatures (above 1800 degrees F) can cause sever respiratory disease.



## 6. Kreem Combo Pak



### *Description:*

Combo Includes:

- 1 - Pint Kreem Tank Liner
- 1 - Pint Part "A"
- 1 - .5 Pint Part "B"

Kreem Fuel Tank Liner is designed for use as a preventive maintenance product in metal and fiberglass tanks, new or old: containing gasoline, gasohol, or diesel. Kreem Fuel Tank Liner has a unique formulation with extremely rapid set-up, that arrests corrosion, prevents leakage from hairline cracks and seam pinholes by coating the tank's inner

surface with a fuel resistant elastomer. Kreem Fuel Tank Liner contains titanium dioxide which gives a high degree of light reflectance to aid in visual inspection of the tank's interior during application.

With the advanced formulation of Kreem, you will receive better adhesion qualities and a smoother coating with even faster set-up time. This advance formulation has been developed and tested to withstand most octane boosters. Feel confident using gasohol in your tank with Kreem Fuel Tank Liner as methyl or ethyl alcohol have no effect on the coating.

Kreem Tank Prep is a two component system. The A-Wash will remove any grease or oil film and etch the tank's inner surface. The B-Wash will aid in this step, plus remove any water still remaining in the tank. The B-Wash also acts as a primer for the Kreem Fuel Tank Liner, so begin the application process immediately.



### ***Application:***

Basics for good results when using Kreem Tank Liner & Tank Prep.

1. Tank Prep is a rust remover and metal etch, it does not remove grease! You must always use a Kreem Tank Cleaner/Degreaser on your tank prior to using Tank Prep. This is also important on new tanks which come with an oily protective coating.
  2. Remove all rust from the tank. Tank Prep will do this properly. Time varies depending on how much rust is in the tank. Visually inspect your tank and continue until tank is free of all rust.
  3. After using Tank Prep A & B do NOT dry the tank as this will cause flash rust to form. Add Kreem Tank Liner IMMEDIATELY after rinsing with Tank Prep B.
  4. Do not allow Kreem Tank Liner to puddle as this will not allow the material to dry properly. Kreem Tank Liner requires air to dry and cure properly. Keep in a well-ventilated area (i.e. outdoors).
- Cleaning Your Tank...

Kreem Tank Prep is a unique two-part system to prepare metal fuel tanks before coating with Kreem Fuel Tank Liner. Used as directed, Tank Prep will remove rust and etch the metal surface to ensure maximum adhesion of Kreem Tank Liner.

It is absolutely critical that the inside of the fuel tank is oil-free, without rust and properly etched to insure adhesion of Kreem Tank Liner.

**CAUTION:** Read warning statements on all labels before using any of these products. Kreem Tank Prep solutions may damage paint. Tank Prep A contains acid, handle with

care using protective eyewear, rubber gloves and adequate ventilation. Tank Prep B contains methyl ethyl ketone, use only in well ventilated areas, preferably outdoors. Highly flammable, do not use near open flame.

#### **STEP 1**

Drain fuel from tank into an approved container and then remove the tank from the vehicle. Remove any valves and petcocks. Seal all openings securely so that liquid will not drain out. Small openings can be capped with rubber stoppers, threaded pipe plugs, corks or wood dowels. Larger openings can be capped with a metal or wood plate and a hand-made gasket.

#### **STEP 2**

Fill the tank about one-quarter full with warm water and add Kreem Tank Cleaner/Degreaser. If the tank is badly rusted or has rust flakes, add a handful of nuts and bolts to help loosen the rust. Shake the tank until all rust has been loosened.



New Tanks: It is important to remove the oily protective coating before using tank prep. Kreem Tank Cleaner/Degreaser should be used.

#### STEP 3

Drain off Kreem Tank Cleaner/Degreaser solution and rinse tank with clean water to remove all soap, oil and loose rust particles.

#### STEP 4

Pour Kreem Tank Prep A into the tank and add 2.5 gallons of warm water; Tank Prep A works best when the tank is completely full and in contact with all metal surfaces. If this is not possible, you should turn the tank to different positions so that the solution has extended contact with all metal surfaces.

Allow tank to vent. Do not allow pressure to build up!

Leave Tank Prep A in the tank until all rust is dissolved and the metal is etched to a dull grey finish. The time required will depend on the amount of rust in the tank. New tanks can be etched in 4 hours, rusty tanks will take longer. We suggest overnight.

Heavy Rust Deposits: Tank Prep A removes rust through a chemical process which slowly neutralizes as rust is removed. In cases where the rust is so heavy that the solution becomes neutralized before the rust is entirely removed, a second treatment of Tank Prep A is required to fully remove the rust and properly etch the metal surface.

#### STEP 5

Pour out Tank Prep A solution and save in an appropriate container as it can be used for a second application. Rinse tank thoroughly with water. Inspect tank interior for rust removal and etching of surface. If necessary, repeat Step 4. Flush the tank with clean water until the rinse water no longer foams and all traces of Tank Prep A are removed.

#### STEP 6

In a well-ventilated area, immediately rinse tank interior with full-strength Tank Prep B and agitate to ensure thorough treatment. This final rinse will remove any residual water and will prime and condition the tank for Kreem Fuel Tank Liner.

#### STEP 7

Using a funnel, carefully drain Tank Prep B back into its original container and close tightly.

You are now ready to seal your tank with Kreem Fuel Tank Liner.

Coating Your Tank...

Kreem Fuel Tank Liner is designed for use as a preventive maintenance product in new and old metal tanks containing gasoline, gasohol or diesel fuel. Kreem Tank Liner has a



unique formulation with extremely rapid set-up, that prevents leakage from hairline cracks and seam pinholes by coating the tank's inner surface with a fuel resistant elastomer. When properly installed, Kreem Tank Liner seals the inside surfaces of metal tanks from moisture and oxygen.

For small tanks (1-5 gallons), use one pint of Kreem Tank Liner. For larger tanks, use one quart per 20 gallons of tank capacity. If the tank contains baffles, be sure to consider the increase in surface area. For spraying or brushing, thin with methyl ethyl ketone to desired consistency.

**CAUTION:** Read warning statements on all labels before using any of these products. Kreem Tank Liner may damage paint. Kreem Tank Liner contains methyl ethyl ketone and the vapors can be harmful. Use only in well-ventilated areas, preferably outdoors. Highly flammable, do not use near open flame.

Kreem Tank Liner is NOT for use in plastic containers.

Kreem Tank Liner is NOT compatible with all fiberglass tanks. You must spot test to determine compatibility with Kreem Tank Liner before use.

#### STEP 1

To obtain proper adhesion, the inside surfaces of the tank must be rust-free, oil free and the metal surface etched. We strongly suggest that you use the Kreem Tank Prep Kit to remove rust and etch the metal before using Kreem Tank Liner. Read the previous section on Cleaning Your Tank.

#### STEP 2

If not already done, securely seal all tank openings per instructions from previous section.

#### STEP 3

Shake or stir Kreem Tank Liner well before use. Keep container tightly closed when not in use.

#### STEP 4

Carefully pour Kreem Tank Liner into the tank taking care not to get any on painted surfaces. Close spout and gently rotate the tank in all directions to coat entire inner surface. When all surfaces have been completely coated there should still be a generous excess left in the tank. Let tank stand 8-10 minutes with spout open. Close the spout and slowly rotate the tank to re-coat surfaces again. Let tank stand on a different side for an additional 8-10 minutes with spout open. Repeat this process until the tank has the desired coating.

**Important:** Do not allow the coating to puddle or pool and dry.



## STEP 5

Using a funnel, drain off excess coating back into the original container for later use. Remove all stops and allow to air-dry in a well-ventilated area for at least 24 hours. A nozzle from a low pressure air compressor blowing lightly into the fuel spout and out another opening will greatly reduce step time. **DO NOT USE A HAIR DRYER!**

For extra protection: Allow tank to air-dry for 6 hours or longer, re-seal openings and repeat Steps 4 and 5 of application process.

## STEP 6

Carefully trim off any excess Kreem Tank Liner around valves and petcocks and then reassemble the tank and mount.

### ***Quantity Required:***

Kreem Tank Liner

For small tanks (1-5 gallons) use one pint LINER. For larger tanks use one quart per 20 gallon of tank capacity. If the tank contains baffles, be sure to consider the increase in surface area. For spraying or brushing thin with methyl ethyl ketone to desired consistency. Remove the tank from the vehicle, remove any valves and petcocks, and stop all outlets.

Kreem Tank-Prep

Tank Prep-A

Concentrated! Makes 2-1/2 Gallons

### ***Caution:***

Kreem Tank Liner

Kreem Tank Liner is not designed for use in aircraft oil tanks or tanks using a plastic component also not for tanks containing liquids above 238 degrees F.

CAUTION: Surface prep solutions may damage paint.

CONTAINS METHYL ETHYL KETONE DO NOT BREATHE FUMES

Avoid contact with eyes; keep from heat, sparks or flame. do not smoke, extinguish all flames and pilot lights and turn off stoves, heaters, electric motors and all other sources of ignition during use and until all vapors are gone. Avoid prolonged contact with skin or prolonged breathing of vapors.





FIRST AID: In case of eye contact flush thoroughly with water. If irritation persists, get medical attention. If swallowed do not induce vomiting. Get medical attention immediately. If vomiting occurs spontaneously, keep victim's head below his hips to prevent his breathing the vomit into his lungs.

KEEP OUT OF REACH OF CHILDREN

Tank Prep-A

Before using, user shall determine the suitability of the product for intended use, and user assumes all risk and liability whatsoever in connection herewith. The foregoing may not be altered except by an agreement signed by the offices of seller and manufacturer –  
KREEM PRODUCTS

WARNING: DANGER-MAY CAUSE BURNS – HARMFUL IS SWALLOWED

Contains phosphoric acid. Avoid contact with skin, eyes and mucous membranes. In case of contact, flush with cool water. For eyes, get prompt medical attention. If swallowed, give 1 or 2 glasses of water and call physician immediately.

KEEP OUT OF REACH OF CHILDREN

Tank Prep-B

WARNING STATEMENT: DANGER! FLAMMABLE!

CONTAINS METHYL ETHYL KETONE

Tank Prep-B solution will damage paint.

USE WITH ADEQUATE VENTILATION - DO NOT BREATHE VAPORS

Avoid contact with eyes. Keep from heat, sparks or flame. Do not smoke; extinguish all flames and pilot lights and turn off stoves, heaters, electric motors and other sources of ignition during use and until all vapors are gone. Avoid prolonged contact with skin or prolonged breathing of vapors.

FIRST AID: In case of eye contact, flush thoroughly with water. If irritation persists, get medical attention. If swallowed do not induce vomiting. Get medical attention. If vomiting occurs spontaneously, keep victim's head below his hips to prevent his breathing the vomit into his lungs.

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Other Images:



**Kreem New Tank Degreaser**      **Kreem Tank Mask**      **Kreem Family of Products**  
**Tank Degreaser, Tank Mask,**  
**Tank Prep A, Tank Prep B,**  
**Kreem Tank Liner, Blue Shield**

**Kreem Products**  
P.O. Box 399 • Somis, CA 93066 USA  
Phone: (805) 386-4470 Fax: (805) 386-4472





# TANK LINER

## MATERIAL SAFETY DATA SHEET

### Product Identification

PRODUCT NAME: METHYL ETHYL KETONE, TANK SEALANT  
COMMON NAMES: METHYL ETHYL KETONE; MEK; 2-BUTANONE  
FORMULA: CH<sub>3</sub>COC<sub>2</sub>H<sub>5</sub>

CAS REGISTRATION NO. : 78-93-3

DATE ISSUED: 11/96

SUPERSEDES: 03/96

### HAZARD RATING (NFPA 325M)

HEALTH: 1  
FIRE: 3  
REACTIVITY: 0  
SPECIAL: NONE

### HAZARD RATING SCALE:

0=MINIMAL 3=SERIOUS  
1=SLIGHT 4=SEVERE  
2=MODERATE

### Hazardous Ingredients

#### EXPOSURE LIMITS:

METHYL ETHYL KETONE >99%

#### EXPOSURE LIMITS,PPM

PEL= 200 (OSHA)  
TLV= 200 (ACGIH)  
LIMIT= 300 (OTHER)

HAZARD: FLAMMABLE, IRRITANT

### Physical Properties

BOILING POINT (760 MM HG)

79.6 DEG C (175.3 DEG F)

% VOLATILE BY VOLUME (BY WT.) 100

VAPOR PRESSURE (20 DEG C) 74.9 MMHG

VAPOR DENSITY (AIR=1) 2.5

SOLUBILITY IN WATER (BY WT.) 24% AT 20C

APPEARANCE & COLOR WHITE TO TRANSLUCENT

SPECIFIC GRAVITY (H2O=1) 0.8060 AT 20/20C

EVAPORATION RATE (BU.AC.=1) 6.6

FREEZING POINT -86.6 DEG C (-123.9 DEG F)

ODOR NONE-RESIDUAL

PHYSICAL STATE LIQUID

### Fire And Explosion Hazard

FLASH POINT:

21 DEG F (-6 DEG C) TAG CLOSED CUP (ASTM D56)

22 DEG F (-5 DEG C) TAG OPEN CUP (ASTM D1310)

FLAMMABLE LIMITS AIR, % BY VOLUME: UPPER: 1.4 (@ 200 DEG F)

LOWER: 11.4 (@ 200 DEG F)

EXTINGUISHING MEDIA:

APPLY ALCOHOL-TYPE OR ALL PURPOSE-TYPE FOAMS BY MANUFACTURER'S RECOMMENDED TECHNIQUES FOR LARGE FIRES. USE CO<sub>2</sub> OR DRY CHEMICAL MEDIA FOR SMALL FIRES.

SPECIAL FIRE FIGHTING PROCEDURES:

USE WATER SPRAY TO COOL FIRE AND EXPOSED CONTAINERS AND STRUCTURES. USE WATER SPRAY TO DISPERSE VAPORS; RE-IGNITION IS POSSIBLE. USE SELF CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING.

UNUSUAL FIRE AND EXPLOSION HAZARD:

VAPORS FORM FROM THIS PRODUCT AND MAY TRAVEL OR BE MOVED BY AIR CURRENTS AND IGNITED BY PILOT LIGHTS, OTHER FLAMES, SPARKS, HEATERS, ELECTRICAL EQUIPMENT, STATIC DISCHARGES OR OTHER IGNITION SOURCES AT LOCATIONS DISTANT FROM PRODUCT HANDLING POINT. VAPORS MAY SETTLE IN LOW OR CONFINED AREAS, OR TRAVEL A LONG DISTANCE TO AN IGNITION SOURCE AND FLASH BACK EXPLOSIVELY  
THIS PRODUCT MAY PRODUCE A FLOATING FIRE HAZARD.

### Reactivity Data

STABILITY: STABLE

CONDITIONS TO AVOID: NONE

INCOMPATIBILITY (MATERIALS TO AVOID): STRONG OXIDIZING AGENTS; ALKALIS; HALOGENS; MINERAL ACIDS

HAZARDOUS DECOMPOSITION PRODUCTS:

BURNING CAN PRODUCE THE FOLLOWING COMBUSTION PRODUCTS:

CARBON MONOXIDE AND/OR CARBON DIOXIDE - CARBON MONOXIDE IS HIGHLY TOXIC IF INHALED; CARBON DIOXIDE IN SUFFICIENT CONCENTRATIONS CAN ACT AS AN ASPHYXIAN (6HC90009\*\*\*\*DOES NOT EXIST\*\*\*\*)

### Spill, Leak And Disposal Procedures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

SMALL SPILLS CAN BE FLUSHED WITH LARGE AMOUNTS OF WATER; LARGER SPILLS SHOULD BE COLLECTED FOR DISPOSAL. EXTINGUISH AND DO NOT TURN ON ANY IGNITION SOURCE UNTIL THE AREA IS DETERMINED TO BE FREE FROM FIRE OR EXPLOSION HAZARD.

**WASTE DISPOSAL METHOD:**

INCINERATE IN A FURNACE WHERE PERMITTED UNDER FEDERAL, STATE AND LOCAL REGULATIONS; AT VERY LOW CONCENTRATIONS IN WATER, THIS PRODUCT IS BIODEGRADABLE IN A BIOLOGICAL WASTE WATER TREATMENT PLANT.

**Health Hazard Data**

**TOXICITY DATA**

ACUTE ORAL TOXICITY LD50 (RAT)	=2737 MG/KG
ACUTE DERMAL TOXICITY LD50 (RABBIT)	=13 G/KG
INHALATION LCLO (RAT)	=2000 PPM/4HR
TCLO (HUMAN)	=1000 PPM/5 MIN (SYSTEMIC IRRITANT EFFECTS)

CARCINOGENICITY: THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY THE NATIONAL TOXICOLOGY PROGRAM, THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER, OR THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION. OTHER DATA: LABORATORY RATS EXPOSED BY INHALATION TO OVER 1000 PPM FOR MOST OF THEIR PREGNANCY PERIOD EXHIBITED MINOR EMBRYO TOXIC/FETOTOXIC EFFECTS. THIS CONCENTRATION OF MEK IS OVER 5 TIMES THE OSHA PEL, MEK MAY POTENTIATE THE TOXIC EFFECTS OF N-HEXANE, METHYL BUTYL KETONE, AND CARBON TETRACHLORIDE.

**PRIMARY ROUTES OF EXPOSURE:**

**INHALATION:** HIGH CONCENTRATIONS OF VAPOR MAY CAUSE NAUSEA, VOMITING, HEADACHE AND DIZZINESS. CAUSES IRRITATION OF THE RESPIRATORY TRACT, EXPERIENCED AS NASAL DISCOMFORT AND DISCHARGE WITH CHEST PAIN AND COUGHING. LOSS OF CONSCIOUSNESS MAY OCCUR.

**SKIN:** BRIEF CONTACT MAY CAUSE SLIGHT IRRITATION WITH ITCHING AND LOCAL SKIN REDNESS. PROLONGED OR REPEATED CONTACT MAY CAUSE DEFATTING AND DRYING OF THE SKIN.

**EYE CONTACT:** CAUSES MODERATE TO SEVERE IRRITATION, EXPERIENCED AS DISCOMFORT OR PAIN, EXCESS BLINKING AND TEAR PRODUCTION, WITH MARKED EXCESS REDNESS AND SWELLING OF THE CONJUNCTIVA.

**INGESTION:** MODERATELY TOXIC. MAY CAUSE IRRITATION OF THE MOUTH, THROAT AND ESOPHAGUS WITH NAUSEA, ABDOMINAL DISCOMFORT, VOMITING DIARRHEA, DIZZINESS AND DROWSINESS. ASPIRATION INTO THE LUNGS MAY OCCUR DURING INGESTION OR VOMITING. RESULTING IN LUNG INJURY.

**EFFECTS OF OVEREXPOSURE:** NO ADVERSE EFFECTS ANTICIPATED FROM AVAILABLE INFORMATION.

**OTHER HEALTH HAZARDS:** METHYL ETHYL KETONE IS TOXIC IF ASPIRATED. IT IS KNOWN TO ENHANCE THE NEUROTOXICITY OF LINEAR 6 CARBON SOLVENTS. LOW CONCENTRATIONS OF METHYL VINYL KETONE MAY BE FORMED DURING COMBUSTION OF METHYL ETHYL KETONE. CONCENTRATIONS OF METHYL VINYL KETONE AS LOW AS 0.25 PPM MAY BE IRRITATING TO THE EYES, NOSE AND RESPIRATORY TRACT. OVEREXPOSURE TO IRRITATING CONCENTRATIONS OF VAPOR MAY RESULT IN LUNG INJURY

**MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:** SKIN CONTACT MAY AGGRAVATE AN EXISTING DERMATITIS.

**INHALATION OF MATERIAL MAY AGGRAVATE ASTHMA AND INFLAMMATORY OR FIBROTIC PULMONARY DISEASE.**

**ADDITIONAL TOXICITY INFORMATION:** IN TEST WITH LABORATORY ANIMALS, METHYL ETHYL KETONE DID NOT CAUSE ANY TERATOGENIC EFFECTS AT EXPOSURE CONCENTRATIONS WHICH DEMONSTRATED EVIDENCE OF MATERNAL TOXICITY, AND AT THE SAME TIME PRODUCED EVIDENCE OF FETOTOXICITY BUT ONLY IN THE PRESENCE OF MATERIAL TOXICITY. RESULTS OBTAINED IN THE FIRST STUDY WERE NOT REPEATABLE IN A SECOND STUDY CARRIED OUT UNDER VIRTUALLY IDENTICAL EXPERIMENTAL CONDITIONS. THUS LACKING A REPEATABLE RESPONSE. IT MUST BE CONCLUDED THAT METHYL ETHYL KETONE DOES NOT DEMONSTRATE APPRECIABLE DEVELOPMENTAL TOXIC ACTIVITY IN RATS.

OSHA STANDARD 29CFR 1910.1200 REQUIRES THAT INFORMATION BE PROVIDED TO EMPLOYEES REGARDING THE HAZARDS OF CHEMICALS BY MEANS OF A HAZARD COMMUNICATION PROGRAM INCLUDING LABELING, MATERIAL SAFETY DATA SHEETS, TRAINING AND ACCESS TO RECORDS. WE REQUEST THAT YOU, AND IT IS YOUR LEGAL DUTY TO, MAKE ALL INFORMATION IN THIS MATERIAL SAFETY DATA SHEET AVAILABLE TO YOUR EMPLOYEES.

FOR ADDITIONAL NON-EMERGENCY HEALTH, SAFETY, OR ENVIRONMENTAL INFORMATION CONTACT:

OCCIDENTAL CHEMICAL CORP (716) 286-3081, OR WRITE:  
 OCCIDENTAL CHEMICAL CORP.  
 PRODUCT STEWARDSHIP DPT  
 SUITE 400  
 360 RAINBOW BLVD. SOUTH  
 NIAGARA FALLS, NY. 14032

FOR EMERGENCIES CALL: (716) 278-7021 (24 HOURS) - OCCIDENTAL CHEMICAL CORP.  
 (800) 424-9300 - CHEMTREC, TRANSPORTATION  
 (303) 595-9048 - MEDICAL, ROCKY MTN.

**First Aid Procedures & Physicians Notes**

**EYE:** IMMEDIATELY FLUSH EYES WITH WATER AND CONTINUE WASHING FOR AT LEAST 15 MINUTES. OBTAIN MEDICAL ATTENTION WITHOUT DELAY, PREFERABLY FROM AN OPHTHAMOLOGIST.

**SKIN:** REMOVE CONTAMINATED CLOTHING. WASH SKIN WITH SOAP AND WATER. OBTAIN MEDICAL ATTENTION IF IRRITATION PERSISTS. WASH CLOTHING BEFORE REUSE.

**INHALATION:** REMOVE TO FRESH AIR. GIVE ARTIFICIAL RESPIRATION IF NOT BREATHING. IF BREATHING IS DIFFICULT, OXYGEN MAY BE GIVEN BY QUALIFIED PERSONNEL. OBTAIN MEDICAL ATTENTION.

**INGESTION:** DO NOT INDUCE VOMITING. DO NOT GIVE ANYTHING TO DRINK. OBTAIN MEDICAL ATTENTION IMMEDIATELY.

**Special Handling Information**

SPECIAL PROTECTION:



**VENTILATION REQUIREMENTS:**

GENERAL (MECHANICAL) ROOM VENTILATION IS EXPECTED TO BE SATISFACTORY WHERE THIS PRODUCT IS STORED AND HANDLED IN CLOSED EQUIPMENT. SPECIAL LOCAL VENTILATION IS NEEDED AT POINTS WHERE VAPORS CAN BE EXPECTED TO ESCAPE THE WORKPLACE AIR.

**SPECIFIC PERSONAL PROTECTIVE EQUIPMENT:**

**RESPIRATORY:**

USE SELF-CONTAINED BREATHING APPARATUS IN HIGH VAPOR CONCENTRATIONS.

**EYE:**

MONOGOGGLES.

**GLOVES:**

BUTYL.

**OTHER CLOTHING AND EQUIPMENT:**

WEAR CHEMICAL APRON. EYE WASH AND EMERGENCY SAFETY SHOWER SHOULD BE IN CLOSE PROXIMITY.

**Special Precautions And Additional Information**

**HANDLING AND STORAGE PRECAUTIONS:**

**WARNING - FLAMMABLE**

HARMFUL IF INHALED. CAUSES EYE AND SKIN IRRITATION. ASPIRATION MAY CAUSE LUNG DAMAGE. MAY CAUSE DIZZINESS AND DROWSINESS.

KEEP AWAY FROM HEAT, SPARKS AND FLAME. AVOID BREATHING VAPOR. AVOID CONTACT WITH EYES, SKIN AND CLOTHING. DO NOT SWALLOW. KEEP CONTAINER CLOSED. USE WITH ADEQUATE VENTILATION. WASH THOROUGHLY

**AFTER HANDLING:**

OTHER PRECAUTIONS: SUDDEN RELEASE OF HOT ORGANIC CHEMICAL VAPORS OR MISTS FROM PROCESS EQUIPMENT OPERATING AT ELEVATED TEMPERATURE AND PRESSURE, OR SUDDEN INGRESS OF AIR INTO VACUUM EQUIPMENT, MAY RESULT IN IGNITIONS WITHOUT THE PRESENCE OF OBVIOUS IGNITION SOURCES. PUBLISHED "AUTO IGNITION" OR "IGNITION" TEMPERATURE VALUES CANNOT BE TREATED AS SAFE OPERATING TEMPERATURES IN CHEMICAL PROCESS WITHOUT ANALYSIS OF THE ACTUAL PROCESS CONDITIONS.

TRANSFER HAZARD: VAPORS OF THIS PRODUCT MAY BE IGNITED BY STATIC SPARKS. USE PROPER BONDING AND GROUNDING DURING LIQUID TRANSFER AS DESCRIBED IN NATIONAL FIRE PROTECTION ASSOCIATION DOCUMENT NFPA 77.

**Footnotes**

**SIGNAL WORD:**

DANGER

**STATEMENTS OF HAZARDS:**

FLAMMABLE

**PRECAUTIONARY STATEMENTS:**

KEEP CONTAINER CLOSED EXCEPT AS NECESSARY WHEN TRANSFERRING MATERIAL.

INSURE ADEQUATE VENTILATION OR USE APPROVED RESPIRATOR.

DO NOT BREATHE VAPOR.

DO NOT GET IN EYES, ON SKIN, ON CLOTHING.

WASH THOROUGHLY AFTER HANDLING.

USE OF GOGGLES, BUTYL GLOVES, IS RECOMMENDED.

**Other Regulatory Information**

DO NOT DETACH THIS SECTION FROM THE MSDS AND BE SURE TO INCLUDE THIS SECTION WHEN COPYING THE MSDS.

SUPERFUND AMENDMENTS AND RE AUTHORIZATION ACT OF 1986 (SARA) TITLE III REQUIRES SUBMISSION OF ANNUAL REPORTS OF RELEASE OF TOXIC CHEMICALS THAT APPEAR IN 40 CFR 372 (FOR SARA 313). THIS INFORMATION MUST BE INCLUDED IN ALL MSDS'S THAT ARE COPIED AND DISTRIBUTED FOR THIS MATERIAL. COMPONENTS THAT ARE AT A LEVEL WHICH COULD REQUIRE REPORTING UNDER STATUTE ARE:

CHEMICAL	CAS NO.	UPPER BOUND CONCENTRATION %
METHYL ETHYL KETONE	78-93-3	100

TOXIC SUBSTANCES CONTROL ACT (TSCA) STATUS: THE INGREDIENTS OF THIS PRODUCT ARE ON THE TSCA INVENTORY

**Notice**

\*\*KREEM PRODUCTS\*\* EXPRESSLY DISCLAIMS ALL EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE PRODUCT OR INFORMATION PROVIDED HEREIN.\*\*

ALL INFORMATION APPEARING HEREIN IS BASED UPON DATA OBTAINED FROM THE MANUFACTURER AND/OR RECOGNIZED TECHNICAL SOURCES. WHILE THE INFORMATION IS BELIEVED TO BE ACCURATE, KREEM PRODUCTS MAKES NO REPRESENTATIONS AS TO ITS ACCURACY OR SUFFICIENCY. CONDITIONS OF USE ARE BEYOND KREEM PRODUCTS CONTROL AND THEREFORE USERS ARE RESPONSIBLE TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS TO DETERMINE WHETHER THE PRODUCT IS SUITABLE FOR THEIR HANDLING PARTICULAR PURPOSES AND THEY ASSUME ALL RISKS OF THEIR USE. HANDLING, AND DISPOSAL OF THE PRODUCT, OR FROM THE PUBLICATION OR USE OF, OR RELIANCE UPON, INFORMATION CONTAINED HEREIN. THIS INFORMATION RELATES ONLY TO THE PRODUCT DESIGNATED HEREIN, AND DOES NOT RELATE TO ITS USE IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY OTHER PROCESS.

**Revision**

03/96: REVISED FORMAT, CONTACT INFORMATION, ADDED SARA INFO

09/87: ADDED OTHER PERSONNEL EXPOSURE LIMITS

\*\*\*\*\*END OF MSDS\*\*\*\*\*



# TANK PREP 'A'

## MATERIAL SAFETY DATA SHEET

### Product Identification

PRODUCT NAME: PHOSPHORIC ACID TECHNICAL GRADE 75-85%  
COMMON NAMES: ORTHOPHOSPHORIC ACID  
FORMULA:  $H_3PO_4$

CAS REGISTRATION NO.: 7664-38-2

DATE ISSUED: 03/96  
SUPERSEDES: 08/89

### HAZARD RATING (NFPA 704)

HEALTH: 3  
FIRE: 0  
REACTIVITY: 1  
SPECIAL: NONE

### HAZARD RATING SCALE:

0=MINIMAL 3=SERIOUS  
1=SLIGHT 4=SEVERE  
2=MODERATE

### Hazardous Ingredients

#### EXPOSURE LIMITS

		PERCENT	
PHOSPHORIC ACID	PEL=1 MG/M <sup>3</sup> TWA	VOL	ND
	STEL=3 MG/M <sup>3</sup>	WT	85
	TLV=1 MG/M <sup>3</sup>	WT	75
WATER	PEL=NOT ESTABLISH.	VOL	ND
	TLV=NOT ESTABLISH.	WT	25

### Physical Properties

BOILING POINT 75%-135 DEG C (275 DEG F); 85%- 158 DEG C (316 DEG F)  
% VOLATILE BY VOLUME NON-VOLATILE  
MELTING POINT MINUS 17.5 DEG C FOR 75%, PLUS 21 DEG C FOR 85%  
VAPOR PRESSURE N/A  
VAPOR DENSITY/ AIR IS 1 N/A  
SOLUBILITY IN WATER 100%  
APPEARANCE & COLOR COLORLESS TO STRAW COLORED LIQUID  
SPECIFIC GRAVITY 75%- 1.573; 85%- 1.684  
PH 2 @ 10 GM/L  
FREEZING POINT 75%- 0 DEG F; 85%- 70 DEG F  
BULK DENSITY 75%- 13.1 LBS/GAL; 85%- 14.0 LBS/GAL

### Fire And Explosion Hazard

FLASH POINT: N/A  
AUTO IGNITION TEMPERATURE: N/A  
FLAMMABLE LIMITS AIR, % BY VOLUME: UPPER: N/A  
LOWER: N/A

EXTINGUISHING MEDIA: NOT COMBUSTIBLE. USE AGENTS AS MAY BE APPROPRIATE FOR MATERIALS IN SURROUNDING AREA.

#### SPECIAL FIRE FIGHTING PROCEDURES:

WEAR PROTECTIVE CLOTHING AND NIOSH/MSHA APPROVED POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS IN FIRE CONDITIONS.

#### UNUSUAL FIRE AND EXPLOSION HAZARD:

WILL LIBERATE FLAMMABLE HYDROGEN GAS UPON CONTACT WITH MANY METALS.

### Reactivity Data

CONDITIONS CONTRIBUTING TO INSTABILITY: UNDER NORMAL CONDITIONS, THIS MATERIAL IS STABLE.  
INCOMPATIBILITY: REACTS VIGOROUSLY WITH ALKALIES PRODUCING HEAT. REACTS WITH MANY METALS PRODUCING HEAT REACTS WITH MANY METALS PRODUCING HEAT AND HYDROGEN GAS  
HAZARDOUS DECOMPOSITION PRODUCTS: HEATING TO DECOMPOSITION YIELDS TOXIC FUMES OF PHOSPHOROUS PENTOXIDE.

### Spill, Leak And Disposal Procedures

#### STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

WEAR PROTECTIVE CLOTHING. SOAK UP SMALL SPILLS WITH SAND, EARTH OR ABSORBENT. SCOOP UP AND PLACE IN CLEAN, DRY, MARKED, LINED STEEL CONTAINER. NEUTRALIZE WITH SODA ASH. FLUSH AWAY RESIDUE WITH LARGE QUANTITIES OF WATER. PUMP LARGE SPILLS INTO MARKED CONTAINERS FOR DISPOSAL OR RECLAMATION. NOTIFY AUTHORITIES IF SPILL CAN PRODUCE ADVERSE OFF-SITE EFFECTS.

#### WASTE DISPOSAL METHOD:

SUBMIT TO AN APPROVED CHEMICAL DISPOSAL SERVICE FOR DISPOSAL IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

### Health Hazard Data



TOXICITY DATA

ACUTE ORAL TOXICITY LD50 (RAT) =1530 MG/KG  
ACUTE DERMAL TOXICITY LD50 (RABBIT) =2740 MG/KG  
PRIMARY SKIN IRRITATION (RABBIT) =EXTREMELY IRRITATING (CORROSIVE)  
PRIMARY EYE IRRITATION (RABBIT) =EXTREMELY IRRITATING (CORROSIVE)

CARCINOGENICITY: THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY THE NATIONAL TOXICOLOGY PROGRAM, THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER, OR THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION.

OTHER DATA: NONE

PRIMARY ROUTES OF EXPOSURE:

INHALATION: EXPOSURE TO ACID VAPOR OR MIST MAY CAUSE IRRITATION OF RESPIRATORY TRACT.

SKIN: STRONGLY IRRITATING AND CORROSIVE TO THE SKIN.

EYE CONTACT: CONTACT WITH THE EYES MAY CAUSE IRRITATION AND SERIOUS EYE BURNS. PERMANENT DAMAGE, WHILE UNCOMMON, CAN OCCUR.

INGESTION: MAY CAUSE SEVERE IRRITATION AND BURNS TO THE MOUTH, THROAT AND DIGESTIVE TRACT. EFFECTS OF OVEREXPOSURE:

ACUTE:

STRONGLY IRRITATING AND CORROSIVE TO THE EYES, SKIN, RESPIRATORY AND DIGESTIVE TRACTS. PROMPT TREATMENT IS IMPORTANT TO MINIMIZE EFFECTS OF EXPOSURE.

CHRONIC:

NO DATA.

SECTION 311 OF THE CLEAN WATER ACT LISTS PHOSPHORIC ACID AS A HAZARDOUS SUBSTANCE WHICH, IF DISCHARGED INTO OR UPON WATER, WILL PRESENT AN IMMINENT AND SUBSTANTIAL DANGER TO PUBLIC HEALTH OR WELFARE. SPILLS OF 5000 POUNDS OR MORE MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER (800) 424-8802.

OSHA STANDARD 29CFR 1910.1200 REQUIRES THAT INFORMATION BE PROVIDED TO EMPLOYEES REGARDING THE HAZARDS OF CHEMICALS BY MEANS OF A HAZARD COMMUNICATION PROGRAM INCLUDING LABELING, MATERIAL SAFETY DATA SHEETS, TRAINING AND ACCESS TO RECORDS. WE REQUEST THAT YOU, AND IT IS YOUR LEGAL DUTY TO, MAKE ALL INFORMATION IN THIS MATERIAL SAFETY DATA SHEET AVAILABLE TO YOUR EMPLOYEES.

FOR ADDITIONAL NON-EMERGENCY HEALTH, SAFETY, OR ENVIRONMENTAL INFORMATION CONTACT:

OCCIDENTAL CHEMICAL CORP. (716) 286-3081, OR WRITE:  
OCCIDENTAL CHEMICAL CORP  
PRODUCT STEWARDSHIP DPT.  
SUITE 400  
360 RAINBOW BLVD. SOUTH  
NIAGARA FALLS, NY 14032

FOR EMERGENCIES CALL: (716) 278-7021 (24 HOURS) - OCCIDENTAL CHEMICAL CORP.  
(800) 424-9300 - CHEMTREC, TRANSPORTATION  
(303) 595-9048 - MEDICAL. ROCKY MTN.

**First Aid Procedures & Physicians Notes** -----

EYE:

OBJECT IS TO FLUSH MATERIAL OUT IMMEDIATELY THEN SEEK MEDICAL ATTENTION. IMMEDIATELY FLUSH EYES WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES FORCIBLY HOLDING LIDS APART TO ENSURE COMPLETE IRRIGATION OF ALL EYE AND LID TISSUE. WASHING EYES WITHIN ONE (1) MINUTE IS ESSENTIAL TO ACHIEVE MAXIMUM EFFECTIVENESS. SEEK MEDICAL ATTENTION IMMEDIATELY

SKIN:

GET MEDICAL ATTENTION IMMEDIATELY. FLUSH SKIN THOROUGHLY WITH COOL WATER UNDER SHOWER WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. CONTINUE TO FLUSH UNTIL MEDICAL ATTENTION ARRIVES. DISCARD NON-RUBBER SHOES. WASH CLOTHING BEFORE RE-USE

INHALATION:

REMOVE TO FRESH AIR. IF BREATHING IS DIFFICULT, HAVE TRAINED PERSON ADMINISTER OXYGEN. IF RESPIRATION STOPS, GIVE MOUTH-TO-MOUTH RESUSCITATION. IF SYMPTOMS ARE PRESENT OR DEVELOP, SEEK MEDICAL ATTENTION.

INGESTION:

NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. IF SWALLOWED. **\*\*DO NOT INDUCE VOMITING\*\*** GIVE LARGE QUANTITIES OF WATER. (IF AVAILABLE, GIVE SEVERAL GLASSES OF MILK.) IF VOMITING OCCURS SPONTANEOUSLY, KEEP AIRWAY CLEAR AND GIVE MORE WATER. SEEK MEDICAL ATTENTION IMMEDIATELY.

**Special Handling Information** -----

SPECIAL PROTECTION:

VENTILATION REQUIREMENTS:

PROVIDE GOOD GENERAL ROOM VENTILATION AND LOCAL EXHAUST VENTILATION AT POINTS OF VAPOR EMISSION.

SPECIFIC PERSONAL PROTECTIVE EQUIPMENT:

RESPIRATORY:

USE NIOSH/MSHA APPROVED RESPIRATOR FOR AREAS WHERE AIRBORNE EXPOSURE IS EXCESSIVE.

EYE:

WEAR CHEMICAL GOGGLES. WEAR FULL FACE SHIELD TO PROTECT SPLASHING WHERE APPROPRIATE.

GLOVES:

WEAR PROTECTIVE GLOVES SUCH AS RUBBER OR NEOPRENE.

OTHER CLOTHING AND EQUIPMENT:

EYE WASH AND EMERGENCY SAFETY SHOWER SHOULD BE IN CLOSE PROXIMITY. USE OF RUBBERIZED COVERALLS AND RUBBER SHOES IS SUGGESTED.

**Special Precautions And Additional Information** -----

HANDLING AND STORAGE PRECAUTIONS:

STORE AWAY FROM HEAT AND SEPARATE FROM STRONG AKALIES. WEAR PROTECTIVE EQUIPMENT DURING HANDLING. STORAGE AREA FOR DRUMMED MATERIAL SHOULD HAVE ADEQUATE DRAINAGE. STORAGE TANKS SHOULD BE VENTED AND DIKED.

**\*\*DO NOT REUSE THIS CONTAINER\*\***. CORROSIVE PRODUCT RESIDUES MAY REMAIN IN THIS CONTAINER. ALL LABELED PRECAUTIONS MUST BE OBSERVED. DISPOSE OF CONTAINER IN A MANNER MEETING GOVERNMENT REGULATIONS.

**\*\*PRODUCT DISPOSAL\*\*** PRODUCT SHOULD BE COMPLETELY REMOVED FROM THIS CONTAINER. MATERIAL THAT CANNOT BE USED OR CHEMICALLY REPROCESSED SHOULD BE DISPOSED OF IN A MANNER MEETING GOVERNMENT REGULATIONS.

**Footnotes** -----

SIGNAL WORD:

DANGER

STATEMENTS OF HAZARDS:

ACID CORROSIVE.

STRONGLY CORROSIVE AND IRRITATING TO EYES, SKIN, RESPIRATORY AND DIGESTIVE TRACTS.

PRECAUTIONARY STATEMENTS:

KEEP CONTAINER CLOSED EXCEPT AS NECESSARY WHEN TRANSFERRING MATERIAL.

INSURE ADEQUATE VENTILATION OR USE APPROVED RESPIRATOR.

DO NOT BREATHE VAPOR.

DO NOT GET IN EYES, ON SKIN, ON CLOTHING.

WASH THOROUGHLY AFTER HANDLING.

USE OF GOGGLES, RUBBER GLOVES, RUBBER SHOES IS RECOMMENDED.

MATERIAL IN CONTACT WITH METALS MAY LIBERATE FLAMMABLE GASSES.

DO NOT ALLOW ENTRY INTO SEWERS OR WATERWAYS.

**Other Regulatory Information** -----

**DO NOT DETACH THIS SECTION FROM THE MSDS AND BE SURE TO INCLUDE THIS SECTION WHEN COPYING THE MSDS.**

THIS PRODUCT IS A TOXIC CHEMICAL SUBJECT TO THE REPORTING REQUIREMENTS OF THIS SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND RE AUTHORIZATION ACT OF 1986 AND 40 CFR PART 372.

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) CONSIDERED BY THE STATE OF CALIFORNIA'S SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 (PROPOSITION 65) AS CAUSING CANCER OR REPRODUCTIVE TOXICITY AND FOR WHICH WARNINGS ARE NOW REQUIRED.

CHEMICAL	CAS NO.
ARSENIC	7440-38-2
CADMIUM	7440-43-9
LEAD	7439-92-1

**Notice** -----

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**Revision** -----

03/96:	REVISED FORMAT AND CONTACT INFORMATION
08/89:	CHANGED HEADING AND CONTACT INFORMATION
12/88	ADDED OTHER REGULATORY INFORMATION

\*\*\*\*\*END OF MSDS\*\*\*\*\*



# TANK PREP 'B'

## MATERIAL SAFETY DATA SHEET

### Product Identification

PRODUCT NAME: METHYL ETHYL KETONE  
COMMON NAMES: METHYL ETHYL KETONE; MEK; 2-BUTANONE  
FORMULA: CH<sub>3</sub>COC<sub>2</sub>H<sub>5</sub>

CAS REGISTRATION NO. : 78-93-3

DATE ISSUED: 03/96

SUPERSEDES: 09/87

HAZARD RATING (NFPA 325M)

HEALTH: 1  
FIRE: 3  
REACTIVITY: 0  
SPECIAL: NONE

HAZARD RATING SCALE:

0=MINIMAL 3=SERIOUS  
1=SLIGHT 4=SEVERE  
2=MODERATE

### Hazardous Ingredients

EXPOSURE LIMITS:

METHYL ETHYL KETONE >99%

EXPOSURE LIMITS,PPM

PEL= 200 (OSHA)

TLV= 200 (ACGIH)

LIMIT= 300 (OTHER)

HAZARD: FLAMMABLE, IRRITANT

### Physical Properties

BOILING POINT (760 MM HG) 79.6 DEG C (175.3 DEG F)  
% VOLATILE BY VOLUME (BY WT.) 100  
VAPOR PRESSURE (20 DEG C) 74.9 MMHG  
VAPOR DENSITY (AIR=1) 2.5  
SOLUBILITY IN WATER (BY WT.) 24% AT 20C  
APPEARANCE & COLOR TRANSPARENT COLORLESS  
SPECIFIC GRAVITY (H2O=1) 0.8060 AT 20/20C  
EVAPORATION RATE (BU.AC.=1) 6.6  
FREEZING POINT -86.6 DEG C (-123.9 DEG F)  
ODOR NONE-RESIDUAL  
PHYSICAL STATE LIQUID

### Fire And Explosion Hazard

FLASH POINT: 21 DEG F (-6 DEG C) TAG CLOSED CUP (ASTM D56)  
22 DEG F (-5 DEG C) TAG OPEN CUP (ASTM D1310)  
FLAMMABLE LIMITS AIR, % BY VOLUME: UPPER: 1.4 (@ 200 DEG F)  
LOWER: 11.4 (@ 200 DEG F)

EXTINGUISHING MEDIA:

APPLY ALCOHOL-TYPE OR ALL PURPOSE-TYPE FOAMS BY MANUFACTURER'S RECOMMENDED TECHNIQUES FOR LARGE FIRES. USE CO<sub>2</sub> OR DRY CHEMICAL MEDIA FOR SMALL FIRES.

SPECIAL FIRE FIGHTING PROCEDURES:

USE WATER SPRAY TO COOL FIRE AND EXPOSED CONTAINERS AND STRUCTURES. USE WATER SPRAY TO DISPERSE VAPORS; RE-IGNITION IS POSSIBLE. USE SELF CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING.

UNUSUAL FIRE AND EXPLOSION HAZARD:

VAPORS FORM FROM THIS PRODUCT AND MAY TRAVEL OR BE MOVED BY AIR CURRENTS AND IGNITED BY PILOT LIGHTS, OTHER FLAMES, SPARKS, HEATERS, ELECTRICAL EQUIPMENT, STATIC DISCHARGES OR OTHER IGNITION SOURCES AT LOCATIONS DISTANT FROM PRODUCT HANDLING POINT. VAPORS MAY SETTLE IN LOW OR CONFINED AREAS, OR TRAVEL A LONG DISTANCE TO AN IGNITION SOURCE AND FLASH BACK EXPLOSIVELY.  
THIS PRODUCT MAY PRODUCE A FLOATING FIRE HAZARD.

### Reactivity Data

STABILITY: STABLE CONDITIONS TO AVOID: NONE  
INCOMPATIBILITY (MATERIALS TO AVOID): STRONG OXIDIZING AGENTS; ALKALIS; HALOGENS; MINERAL ACIDS  
HAZARDOUS DECOMPOSITION PRODUCTS:

BURNING CAN PRODUCE THE FOLLOWING COMBUSTION PRODUCTS:

CARBON MONOXIDE AND/OR CARBON DIOXIDE - CARBON MONOXIDE IS HIGHLY TOXIC IF INHALED; CARBON DIOXIDE IN SUFFICIENT CONCENTRATIONS CAN ACT AS AN ASPHYXIANT. (6HC90009\*\*\*\*DOES NOT EXIST\*\*\*\*\*)

### Spill, Leak And Disposal Procedures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

SMALL SPILLS CAN BE FLUSHED WITH LARGE AMOUNTS OF WATER; LARGER SPILLS SHOULD BE COLLECTED FOR DISPOSAL. EXTINGUISH AND DO NOT TURN ON ANY IGNITION SOURCE UNTIL THE AREA IS DETERMINED TO BE FREE FROM FIRE OR EXPLOSION HAZARD.

**WASTE DISPOSAL METHOD:**

INCINERATE IN A FURNACE WHERE PERMITTED UNDER FEDERAL, STATE AND LOCAL REGULATIONS; AT VERY LOW CONCENTRATIONS IN WATER, THIS PRODUCT IS BIODEGRADABLE IN A BIOLOGICAL WASTE WATER TREATMENT PLANT.

**Health Hazard Data**

**TOXICITY DATA**

ACUTE ORAL TOXICITY LD50 (RAT)	=2737 MG/KG
ACUTE DERMAL TOXICITY LD50 (RABBIT)	=13 G/KG
INHALATION LCLO (RAT)	=2000 PPM/4HR
TCLO (HUMAN)	=1000 PPM/5 MIN (SYSTEMIC IRRITANT EFFECTS)

CARCINOGENICITY: THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY THE NATIONAL TOXICOLOGY PROGRAM, THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER, OR THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION. OTHER DATA: LABORATORY RATS EXPOSED BY INHALATION TO OVER 1000 PPM FOR MOST OF THEIR PREGNANCY PERIOD EXHIBITED MINOR EMBRYO TOXIC/FETOTOXIC EFFECTS. THIS CONCENTRATION OF MEK IS OVER 5 TIMES THE OSHA PEL. MEK MAY POTENTIATE THE TOXIC EFFECTS OF N-HEXANE, METHYL BUTYL KETONE, AND CARBON TETRACHLORIDE.

**PRIMARY ROUTES OF EXPOSURE:**

**INHALATION:** HIGH CONCENTRATIONS OF VAPOR MAY CAUSE NAUSEA, VOMITING, HEADACHE, AND DIZZINESS. CAUSES IRRITATION OF THE RESPIRATORY TRACT, EXPERIENCED AS NASAL DISCOMFORT AND DISCHARGE WITH CHEST PAIN AND COUGHING. LOSS OF CONSCIOUSNESS MAY OCCUR.

**SKIN:** BRIEF CONTACT MAY CAUSE SLIGHT IRRITATION WITH ITCHING AND LOCAL SKIN REDNESS. PROLONGED OR REPEATED CONTACT MAY CAUSE DEFATTING AND DRYING OF THE SKIN.

**EYE CONTACT:** CAUSES MODERATE TO SEVERE IRRITATION, EXPERIENCED AS DISCOMFORT OR PAIN, EXCESS BLINKING AND TEAR PRODUCTION, WITH MARKED EXCESS REDNESS AND SWELLING OF THE CONJUNCTIVA.

**INGESTION:** MODERATELY TOXIC. MAY CAUSE IRRITATION OF THE MOUTH, THROAT AND ESOPHAGUS WITH NAUSEA, ABDOMINAL DISCOMFORT, VOMITING DIARRHEA, DIZZINESS AND DROWSINESS. ASPIRATION INTO THE LUNGS MAY OCCUR DURING INGESTION OR VOMITING, RESULTING IN LUNG INJURY.

**EFFECTS OF OVEREXPOSURE:** NO ADVERSE EFFECTS ANTICIPATED FROM AVAILABLE INFORMATION.

**OTHER HEALTH HAZARDS:** METHYL ETHYL KETONE IS TOXIC IF ASPIRATED. IT IS KNOWN TO ENHANCE THE NEUROTOXICITY OF LINEAR 6 CARBON SOLVENTS. LOW CONCENTRATIONS OF METHYL VINYL KETONE MAY BE FORMED DURING COMBUSTION OF METHYL ETHYL KETONE. CONCENTRATIONS OF METHYL VINYL KETONE AS LOW AS 0.25 PPM MAY BE IRRITATING TO THE EYES, NOSE AND RESPIRATORY TRACT. OVEREXPOSURE TO IRRITATING CONCENTRATIONS OF VAPOR MAY RESULT IN LUNG INJURY MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: SKIN CONTACT MAY AGGRAVATE AN EXISTING DERMATITIS.

**INHALATION OF MATERIAL MAY AGGRAVATE ASTHMA AND INFLAMMATORY OR FIBROTIC PULMONARY DISEASE.**

**ADDITIONAL TOXICITY INFORMATION:** IN TEST WITH LABORATORY ANIMALS, METHYL ETHYL KETONE DID NOT CAUSE ANY TERATOGENIC EFFECTS AT EXPOSURE CONCENTRATIONS WHICH DEMONSTRATED EVIDENCE OF MATERNAL TOXICITY, AND AT THE SAME TIME PRODUCED EVIDENCE OF FETOTOXICITY BUT ONLY IN THE PRESENCE OF MATERIAL TOXICITY. RESULTS OBTAINED IN THE FIRST STUDY WERE NOT REPEATABLE IN A SECOND STUDY CARRIED OUT UNDER VIRTUALLY IDENTICAL EXPERIMENTAL CONDITIONS. THUS LACKING A REPEATABLE RESPONSE, IT MUST BE CONCLUDED THAT METHYL ETHYL KETONE DOES NOT DEMONSTRATE APPRECIABLE DEVELOPMENTAL TOXIC ACTIVITY IN RATS.

OSHA STANDARD 29CFR 1910.1200 REQUIRES THAT INFORMATION BE PROVIDED TO EMPLOYEES REGARDING THE HAZARDS OF CHEMICALS BY MEANS OF A HAZARD COMMUNICATION PROGRAM INCLUDING LABELING, MATERIAL SAFETY DATA SHEETS, TRAINING AND ACCESS TO RECORDS. WE REQUEST THAT YOU, AND IT IS YOUR LEGAL DUTY TO, MAKE ALL INFORMATION IN THIS MATERIAL SAFETY DATA SHEET AVAILABLE TO YOUR EMPLOYEES.

FOR ADDITIONAL NON-EMERGENCY HEALTH, SAFETY, OR ENVIRONMENTAL INFORMATION CONTACT:

OCCIDENTAL CHEMICAL CORP. (716) 286-3081, OR WRITE:  
 OCCIDENTAL CHEMICAL CORP.  
 PRODUCT STEWARDSHIP DPT.  
 SUITE 400  
 360 RAINBOW BLVD. SOUTH  
 NIAGARA FALLS, NY 14032

FOR EMERGENCIES CALL: (716) 278-7021 (24 HOURS) - OCCIDENTAL CHEMICAL CORP  
 (800) 424-9300 - CHEMTREC, TRANSPORTATION  
 (303) 595-9048 - MEDICAL, ROCKY MTN.

**First Aid Procedures & Physicians Notes**

**EYE:**

IMMEDIATELY FLUSH EYES WITH WATER AND CONTINUE WASHING FOR AT LEAST 15 MINUTES. OBTAIN MEDICAL ATTENTION WITHOUT DELAY, PREFERABLY FROM AN OPHTHAMOLOGIST

**SKIN:**

REMOVE CONTAMINATED CLOTHING. WASH SKIN WITH SOAP AND WATER. OBTAIN MEDICAL ATTENTION IF IRRITATION PERSISTS. WASH CLOTHING BEFORE REUSE.

**INHALATION:**

REMOVE TO FRESH AIR. GIVE ARTIFICIAL RESPIRATION IF NOT BREATHING. IF BREATHING IS DIFFICULT, OXYGEN MAY BE GIVEN BY QUALIFIED PERSONNEL. OBTAIN MEDICAL ATTENTION.

**INGESTION:**

DO NOT INDUCE VOMITING. DO NOT GIVE ANYTHING TO DRINK. OBTAIN MEDICAL ATTENTION IMMEDIATELY

**Special Handling Information**

SPECIAL PROTECTION:

VENTILATION REQUIREMENTS:

GENERAL (MECHANICAL) ROOM VENTILATION IS EXPECTED TO BE SATISFACTORY WHERE THIS PRODUCT IS STORED AND HANDLED IN CLOSED EQUIPMENT. SPECIAL LOCAL VENTILATION IS NEEDED AT POINTS WHERE VAPORS CAN BE EXPECTED TO ESCAPE THE WORKPLACE AIR.

SPECIFIC PERSONAL PROTECTIVE EQUIPMENT:

RESPIRATORY:

USE SELF CONTAINED BREATHING APPARATUS IN HIGH VAPOR CONCENTRATIONS..

EYE:

MONOGOGGLES.

GLOVES:

BUTYL.

OTHER CLOTHING AND EQUIPMENT:

WEAR CHEMICAL APRON. EYE WASH AND EMERGENCY SAFETY SHOWER SHOULD BE IN CLOSE PROXIMITY

**Special Precautions And Additional Information**

HANDLING AND STORAGE PRECAUTIONS:

**WARNING - FLAMMABLE**

HARMFUL IF INHALED. CAUSES EYE AND SKIN IRRITATION. ASPIRATION MAY CAUSE LUNG DAMAGE. MAY CAUSE DIZZINESS AND DROWSINESS.

KEEP AWAY FROM HEAT, SPARKS AND FLAME. AVOID BREATHING VAPOR. AVOID CONTACT WITH EYES, SKIN AND CLOTHING. DO NOT SWALLOW. KEEP CONTAINER CLOSED. USE WITH ADEQUATE VENTILATION. WASH THOROUGHLY

AFTER HANDLING.

OTHER PRECAUTIONS: SUDDEN RELEASE OF HOT ORGANIC CHEMICAL VAPORS OR MISTS FROM PROCESS EQUIPMENT OPERATING AT ELEVATED TEMPERATURE AND PRESSURE, OR SUDDEN INGRESS OF AIR INTO VACUUM EQUIPMENT, MAY RESULT IN IGNITIONS WITHOUT THE PRESENCE OF OBVIOUS IGNITION SOURCES. PUBLISHED "AUTO IGNITION" OR "IGNITION" TEMPERATURE VALUES CANNOT BE TREATED AS SAFE OPERATING TEMPERATURES IN CHEMICAL PROCESS WITHOUT ANALYSIS OF THE ACTUAL PROCESS CONDITIONS.

TRANSFER HAZARD: VAPORS OF THIS PRODUCT MAY BE IGNITED BY STATIC SPARKS. USE PROPER BONDING AND GROUNDING DURING LIQUID TRANSFER AS DESCRIBED IN NATIONAL FIRE PROTECTION ASSOCIATION DOCUMENT NFPA 77

**Footnotes**

SIGNAL WORD:

DANGER

STATEMENTS OF HAZARDS:

FLAMMABLE

PRECAUTIONARY STATEMENTS:

KEEP CONTAINER CLOSED EXCEPT AS NECESSARY WHEN TRANSFERRING MATERIAL.

INSURE ADEQUATE VENTILATION OR USE APPROVED RESPIRATOR.

DO NOT BREATHE VAPOR.

DO NOT GET IN EYES, ON SKIN, ON CLOTHING.

WASH THOROUGHLY AFTER HANDLING

USE OF GOGGLES, BUTYL GLOVES, IS RECOMMENDED.

**Other Regulatory Information**

DO NOT DETACH THIS SECTION FROM THE MSDS AND BE SURE TO INCLUDE THIS SECTION WHEN COPYING THE MSDS.

SUPERFUND AMENDMENTS AND RE AUTHORIZATION ACT OF 1986 (SARA) TITLE III REQUIRES SUBMISSION OF ANNUAL REPORTS OF RELEASE OF TOXIC CHEMICALS THAT APPEAR IN 40 CFR 372 (FOR SARA 31 3). THIS INFORMATION MUST BE INCLUDED IN ALL MSDS'S THAT ARE COPIED AND DISTRIBUTED FOR THIS MATERIAL. COMPONENTS THAT ARE AT A LEVEL WHICH COULD REQUIRE REPORTING UNDER STATUTE ARE:

CHEMICAL	CAS NO.	UPPER BOUND CONCENTRATIO %
METHYL ETHYL KETONE	78-93-3	100

TOXIC SUBSTANCES CONTROL ACT (TSCA) STATUS: THE INGREDIENTS OF THIS PRODUCT ARE ON THE TSCA INVENTORY

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**Revision**

- 11/96: REVISED APPEARANCE, WAS CLEAR
- 03/96: REVISED FORMAT ,CONTACT INFORMATION, ADDED SARA INFO

\*\*\*\*\*END OF MSDS\*\*\*\*\*



# TANK MASK

## MATERIAL SAFETY DATA SHEET

### Product Identification

PRODUCT NAME: TANK MASK  
COMMON NAMES: OVERSPRAY MASKING LIQUID DRY

DATE ISSUED: 10/02/97  
SUPERSEDES: -

### Ingredients

	CAS REGISTRATION NO:
WATER	7732-18-5
VINYL ACETATE-VINYL ALCOHOL POLYMER	25213-24-5
GLYCERIN	56-81-5
METHYL ALCOHOL	67-56-1
ALCOHOL ETHOXYLATES	68439-46-3

THIS PRODUCT CONTAINS THE FOLLOWING TOXIC CHEMICAL OR CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1996 AND 40 CFR PART 372.

### Physical Properties

BOILING POINT (760 MM HG)	212 DEG. F
% VOLATILE BY VOLUME	85-90%
MELTING POINT	32 DEG. F
VAPOR PRESSURE (20 DEG C)	17.53 MM HG
VAPOR DENSITY (AIR=1)	1.2
SOLUBILITY IN WATER	COMPLETE
APPEARANCE & COLOR	LIQUID, RED, ALCOHOL ODOR
SPECIFIC GRAVITY	1.02 WATER=1
EVAPORATION RATE	NOT DETERMINED
VISCOSITY	40 CENTIPOISE

### Fire And Explosion Hazard

FLASH POINT:	< 200 DEG. F
FLAMMABLE LIMITS AIR, % V/V:	LEL - NOT DETERMINED UEL - NOT DETERMINED
AUTOIGNITION TEMPERATURE:	NOT DETERMINED

### EXTINGUISHING MEDIA:

WATER SPRAY, CARBON DIOXIDE, DRY CHEMICAL, ALCOHOL-TYPE FOAM.

### SPECIAL FIRE FIGHTING PROCEDURES:

THE USE OF SELF CONTAINED BREATHING APPARATUS IS RECOMMENDED FOR FIREFIGHTERS.

### UNUSUAL FIRE AND EXPLOSION HAZARD:

CLOSED CONTAINERS EXPOSED TO HEAT FROM FIRE MAY BUILD PRESSURE AND EXPLODE.

N.F.P.A. HAZARD CODES: HEALTH: = 1 FIRE: = 1 REACTIVITY: = 0  
UNUSUAL REACTION HAZARD: NONE

### Reactivity Data

STABILITY: STABLE.

INCOMPATIBILITY (MATERIALS TO AVOID): STRONG ACIDS; STRONG BASES; STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONOXIDE AND CARBON DIOXIDE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

### Spill, Leak And Disposal Procedures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

IMMEDIATELY WIPE, MOP OR PICK UP MECHANICALLY AND FLUSH AREA WITH WATER. OBSERVE PRECAUTIONS FROM OTHER SECTIONS.

WASTE DISPOSAL METHOD:

SEWER ONLY IN ACCORDANCE WITH LOCAL REGULATIONS. INCINERATION OF WASTE PRODUCT IS THE PREFERRED METHOD.

## Health Hazard Data

### EXPOSURE LIMITS:

INGREDIENT	VALUE	UNIT	TYPE	AUTH	SKIN*
WATER	NONE	NONE	NONE	NONE	
ETHYL ALCOHOL	1000	PPM	TWA	ACGIH	
ETHYL ALCOHOL	1000	PPM	TWA	OSHA	
VINYL ACETATE-VINYL ALCOHOL POLYMER	NONE	NONE	NONE	NONE	
GLYCERIN	10	MG/M3	TWA	ACGIH	
GLYCERIN AS MIST					
GLYCERIN AS MIST	10	MG/M3	TWA	OSHA	
ISOPROPYL ALCOHOL	400	PPM	TWA	ACGIH	
ISOPROPYL ALCOHOL	500	PPM	STEL	ACGIH	
ISOPROPYL ALCOHOL	400	PPM	TWA	OSHA	
ISOPROPYL ALCOHOL	500	PPM	STEL	OSHA	
METHYL ALCOHOL	200	PPM	TWA	ACGIH	Y
METHYL ALCOHOL	250	PPM	STEL	ACGIH	Y
METHYL ALCOHOL	200	PPM	TWA	OSHA	Y
METHYL ALCOHOL	250	PPM	STEL	OSHA	Y

\* SKIN NOTATION: LISTED SUBSTANCES INDICATED WITH "Y" UNDER SKIN REFER TO THE POTENTIAL CONTRIBUTION TO THE OVERALL EXPOSURE BY THE CUTANEOUS ROUTE INCLUDING MUCOUS MEMBRANE AND EYE, EITHER BY AIRBORNE OR, MORE PARTICULARLY, BY DIRECT CONTACT WITH THE SUBSTANCE. VEHICLES CAN ALTER SKIN ABSORPTION.

### SOURCE OF EXPOSURE LIMIT DATA:

ACGIH: AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS  
OSHA: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

### EYE CONTACT:

MILD EYE IRRITATION: SIGNS / SYMPTOMS CAN INCLUDE REDNESS, SWELLING, PAIN, AND TEARING.

### SKIN CONTACT:

MILD SKIN IRRITATION (AFTER PROLONGED OR REPEATED CONTACT: SIGNS/SYMPTOMS CAN INCLUDE REDNESS, SWELLING, AND ITCHING.

### INHALATION:

IRRITATION (UPPER RESPIRATORY); SIGNS/ SYMPTOMS CAN INCLUDE SORENESS OF THE NOSE AND THROAT, COUGHING AND SNEEZING.

### IF SWALLOWED:

GASTROINTESTINAL EFFECTS: SIGNS/SYMPTOMS GENERALLY WILL INCLUDE ABDOMINAL PAIN.

## First Aid Procedures & Physicians Notes

### EYE CONTACT:

IMMEDIATELY FLUSH EYES WITH LARGE AMOUNTS OF WATER. GET IMMEDIATE MEDICAL ATTENTION.

### SKIN CONTACT:

FLUSH SKIN WITH LARGE AMOUNTS OF WATER. IF IRRITATION PERSISTS, GET MEDICAL ATTENTION.

### INHALATION:

REMOVE PERSON TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GET IMMEDIATE MEDICAL ATTENTION.

### IF SWALLOWED:

DO NOT INDUCE VOMITING. DRINK TWO GLASSES OF WATER. CALL PHYSICIAN.

## Special Handling Information

### SPECIAL PROTECTION:

EYE PROTECTION: AVOID CONTACT.

SKIN PROTECTION: AVOID SKIN CONTACT. WEAR APPROPRIATE GLOVES WHEN HANDLING THIS MATERIAL.

RECOMMENDED VENTILATION: USE WITH APPROPRIATE LOCAL EXHAUST VENTILATION.

RESPIRATORY PROTECTION: AVOID BREATHING OF VAPORS, MIST OR SPRAY

PREVENTION OF ACCIDENTAL INGESTION: WASH HANDS AFTER HANDLING AND BEFORE EATING.

RECOMMENDED STORAGE: STORE AWAY FROM HEAT

FIRE AND EXPLOSION AVOIDANCE: KEEP AWAY FROM HEAT, SPARKS, OPEN FLAME, AND OR OTHER SOURCES OF IGNITION.

OTHER PRECAUTIONARY INFORMATION: TO PREVENT SLIPPING, RINSE FLOOR AFTER USING AND IMMEDIATELY AFTER SPILL.

## Footnotes

NONE.

**Other Regulatory Information** -----

VOLATILE ORGANIC COMPOUNDS: 0.04 LB/GAL CALCULATED PER SCAMND RULE 443.1

VOLATILE ORGANIC COMPOUNDS: 5GMS/LITER EPA METHOD 24.

VOC LESS H2O AND EXEMPT SOLVENTS: 48 GMS/LITER EPA METHOD 24.

SINCE REGULATIONS VARY, CONSULT APPLICABLE REGULATIONS OR AUTHORITIES BEFORE DISPOSAL.

EPCRA HAZARD CLASS:

FIRE HAZARD: YES PRESSURE: NO REACTIVITY: NO ACUTE: YES CHRONIC: YES.

**Notice** -----

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**Revision** -----

10/97: CREATED.

\*\*\*\*\*END MSDS\*\*\*\*\*





# NEW TANK DEGREASER

## MATERIAL SAFETY DATA SHEET

### Product Identification

PRODUCT NAME: NEW TANK DEGREASER  
COMMON NAMES: D-LIMONENE  
CHEMICAL FAMILY NAME: CITRUS DISTILLATE

DATE ISSUED: 10/02/97  
SUPERSEDES: -

### Hazardous Ingredients

<u>HAZARDOUS INGREDIENTS:</u>	<u>CAS REGISTRATION NO.:</u>
ALPHA-PINENE	80-56-8
SABINENE	3387-41-5
MYRCENE	123.35-3
D-LIMONENE	5989-27-5
GAMA-TERPINENE	99-85-4
OCTANAL	124-13-0
DECANAL	112-31-2
LINALOOL	78-70-6

### Physical Properties

BOILING POINT (760 MM HG) 311-333 DEG. F  
% VOLATILE BY VOLUME 99.8  
MELTING POINT -90 DEG. F TO -100 DEG. F

VAPOR PRESSURE (20 DEG C) 3 MM HG @ 25 DEG. C  
VAPOR DENSITY (AIR=1) 4.7  
SOLUBILITY IN WATER INSOLUBLE  
APPEARANCE & COLOR LIGHT YELLOW TO COLORLESS LIQUID, ORANGE PEEL AROMA  
SPECIFIC GRAVITY 0.841 @ (25 DEG. / 25 DEG. C)  
EVAPORATION RATE (BU.AC.=1) 0.25

### Fire And Explosion Hazard

FLASH POINT: 120 DEG. F TO 130 DEG. F (CLOSED CUP)

FLAMMABLE LIMITS AIR, % V/V: LEL - 0.7  
UEL - 6.5

#### EXTINGUISHING MEDIA:

EXTINGUISHER FOR CLASS "B" FIRES: FOAM, CO<sub>2</sub> OR DRY COMPOUND. AVOID DIRECT CONTACT WITH WATER.

#### SPECIAL FIRE FIGHTING PROCEDURES:

IF CONFINED TO A CONTAINER, USE WATER-SPRAY TO COOL IT EXTERIOR.

#### UNUSUAL FIRE AND EXPLOSION HAZARD:

PRODUCT MAY PRODUCE DENSE BLACK SMOKE: STAY UPWIND OF THE FIRE

N.F.P.A. HEALTH HAZARD RATING = 0

### Reactivity Data

STABILITY: STABLE.

CONDITIONS TO AVOID: IN TYPICAL USES, NO CONTACT WITH FLAMMABLE OR EXPLOSIVE CHEMICALS.

INCOMPATIBILITY (MATERIALS TO AVOID FOR PURPOSES OF TRANSPORT, HANDLING OR STORAGE): STRONG OXIDANTS; INORGANIC ACIDS; PEROXIDES; HALOGENS; VINYL CHLORIDE, AND IODINE PENTAFLUORIDE.

HAZARDOUS DECOMPOSITION PRODUCTS: NONE.

HAZARDOUS POLYMERIZATION: AVOID HIGH TEMPERATURE CONTACT WITH REACTIVE MONOMERS (I.E., METHACRYLATES OR VINYL CHLORIDE).

### Spill, Leak And Disposal Procedures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

SHUT OFF SOURCE IF POSSIBLE TO DO SO WITHOUT HAZARD. KEEP OPEN FLAMES AND SPARK SOURCES AWAY. DO NOT ALLOW LIQUID TO ENTER MUNICIPAL SEWAGE SYSTEM.

#### WASTE DISPOSAL METHOD:

CONTAIN AND ABSORB SPILLED LIQUID WITH SAND OR EARTH. REMOVE SPENT ABSORBENT TO LANDFILL, IN CONFORMANCE TO LOCAL DISPOSAL CODES.

## Health Hazard Data

THRESHOLD LIMIT VALUE: 150 PPM

### EFFECTS OF OVEREXPOSURE:

ACUTE: VAPOR IRRITATES EYES AND MUCOUS MEMBRANES. SKIN CONTACT WITH LIQUID MAY CAUSE LOCALIZED ITCHING.

CHRONIC: FREQUENT EXPOSURE MAY INDUCE DERMATITIS IN SENSITIVE INDIVIDUALS. PROLONGED CONTACT HAS CAUSED PHOTOSENSITIVITY IN SOME CASES.

FOR ADDITIONAL NON-EMERGENCY HEALTH, SAFETY, OR ENVIRONMENTAL INFORMATION CONTACT:

SUNKIST GROWERS, INC. (714) 983-9811, OR WRITE:  
SUNKIST GROWERS, INC.  
720 E. SUNKIST ST  
ONTARIO, CA 91761

FOR EMERGENCIES CALL: (714) 983-9811 - SUNKIST GROWERS, INC.  
(800) 424-9300 - CHEMTREC, TRANSPORTATION

## First Aid Procedures & Physicians Notes

### EYE:

FLUSH WITH WATER FOR AT LEAST 15 MINUTES; SEEK MEDICAL HELP.

### SKIN:

FLOOD WITH COPIOUS WATER, REMOVE SOLID CLOTHING.

## Special Handling Information

### SPECIAL PROTECTION:

#### VENTILATION REQUIREMENTS:

LOCAL EXHAUST: FACE VELOCITY > 60 FPM IN CONFINED SPACE.

SPECIAL: NOT REQUIRED.

MECHANICAL (GENERAL): EXPLOSION-PROOF MOTORS IN FANS.

OTHER: NO OPEN FLAMES, SMOKING OR UNSHIELDED LIGHTS.

### SPECIFIC PERSONAL PROTECTIVE EQUIPMENT:

#### RESPIRATORY:

NOT GENERALLY REQUIRED. AIR-SUPPLIED MASK, IF USED IN AIRTIGHT SPACES.

#### EYE:

CHEMICAL SPLASH GOGGLES OR FACE SHIELD.

#### GLOVES:

CHEMICALLY RESISTANT.

#### OTHER CLOTHING AND EQUIPMENT:

CHEMICALLY RESISTANT APRON AND BOOTS FOR SPILLS.

## Special Precautions And Additional Information

### HANDLING AND STORAGE PRECAUTIONS:

STORE IN COOL, WELL VENTILATED PLACE AWAY FROM REACTIVE CHEMICALS, SPARK SOURCES, OR OPEN FLAMES. CONTAINER SHOULD BE KEPT CLOSED AND PLAINLY LABELED.

### OTHER PRECAUTIONS:

NONE.

## Footnotes

NONE.

## Other Regulatory Information

NONE.

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## Revision

10/97: CREATED.

\*\*\*\*\*END MSDS\*\*\*\*\*



# MATERIAL SAFETY DATA SHEET

24-HOUR EMERGENCY ASSISTANCE	GENERAL ASSISTANCE	NFPA FIRE HAZARD SYMBOL*
BP America (In Ohio): 800-362-8059 (Outside Ohio): 800-321-8642 CHEMTREC Asslst: 800-424-9300	716-278-2183	<p>4-Extreme 3-High 2-Moderate 1-Slight 0-Insignificant *See Text</p>
MSDS Number > 3312/M0090		

MANUFACTURER/SUPPLIER: **KREEM PRODUCTS**  
ADDRESS: • P.O. Box 399 • Somis, CA 93066 • (805) 386-4470 • FAX: (805) 386-4472

## PRODUCT IDENTIFICATION

TRADE NAME:  
**KREEM BLUE-SHIELD**

CAS NUMBER: MIXTURE  
SYNONYM(S): CERAMIC FIBER; REFRACTORY FIBER; MMVF; REFRACTORY  
CERAMIC FIBER; RCF  
CHEMICAL FAMILY: VITREOUS ALUMINOSILICATE FIBERS  
MOLECULAR FORMULA:  $Al_2O_3 \cdot SiO_2$  (Amorphous)  
MOLECULAR WEIGHT: NA  
PRODUCT CODE: NA HIERARCHY: NA

## PRODUCT HAZARD SUMMARY

HEALTH CAUTION!  
MAY BE HARMFUL IF SWALLOWED  
MAY BE IRRITATING TO THE SKIN, EYES AND RESPIRATORY TRACT

FLAMMABILITY NON-COMBUSTIBLE

REACTIVITY STABLE

## PRODUCT HEALTH HAZARD INFORMATION

INGESTION:  
Ingestion is unlikely. If ingested in sufficient quantity, may cause gastrointestinal disturbances. Symptoms may include irritation, nausea, vomiting, abdominal pain and diarrhea.

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**SKIN:**

SLIGHTLY TO MODERATELY IRRITATING. May cause irritation, inflammation and rash.

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**EYE:**

SLIGHTLY TO MODERATELY IRRITATING. Abrasive action may cause damage to the outer surface of the eye.

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**INHALATION:**

May cause respiratory tract irritation. Pre-existing medical conditions may be aggravated by exposure; specifically, bronchial hyper-reactivity and chronic bronchial or lung disease.

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**SPECIAL TOXIC EFFECTS:**

Normal conditions of use and application are not expected to release respirable particulates of airborne fibers. Removal of the "used" product, sanding, scraping or otherwise destroying the integrity of the dried product may result in the release of particulates and fibers. During such operations where fibers could possibly be liberated, appropriate respiratory protection should be provided as discussed elsewhere in the section on "Respiratory Protection".

The existing toxicology and epidemiology data bases for RCF's are still preliminary. Carborundum is continuing to support the necessary investigations and will make all data available to all interested parties. Information will be updated as studies are completed and reviewed. The following is a review of the results to date:

**EPIDEMIOLOGY**  
-----

At this time there are no known published reports demonstrating negative health outcomes of workers exposed to refractory ceramic fiber (RCF). Epidemiologic investigations of RCF production workers are ongoing.

The preliminary evidence, obtained from employees in RCF manufacturing facilities, is as follows:

- 1) There is no evidence of any fibrotic lung disease (interstitial fibrosis) whatsoever on X-ray.
- 2) There is no evidence of any lung disease among those employees exposed to RCF that had never smoked.
- 3) A statistical "trend" was observed in the exposed population between the duration of exposure to RCF and a decrease in some measures of pulmonary function. These observations are clinically insignificant. In other words, if these observations were made on an individual employee, the results would be interpreted as being within the normal range.
- 4) Pleural plaques (thickening along the chest wall) have been observed in a small number of employees who had a long duration of employment. There are several occupational and non-occupational causes for pleural plaque. It should be noted that plaques are not "pre-cancer" nor are they associated with any measurable effect on lung function.

**TOXICOLOGY**  
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A number of studies on the health effects of inhalation exposure of rats and hamsters are now reaching completion. In a lifetime nose-only inhalation study, rats exposed to the Maximum Tolerated Dose of 30 mg/m<sup>3</sup> (200 fibers/cc) developed progressive lung damage (interstitial fibrosis) and cancers of the lung and of the pleura (lining of the chest

wall and lung). In contrast, hamsters similarly exposed developed interstitial fibrosis and pleural cancer, but no lung cancer. Cancer of the pleura is called mesothelioma.

A multiple dose study (3, 9, 16 mg/m<sup>3</sup>; 25, 75, 150 fibers/cc, respectively) is currently ongoing in rats. After 24 months of exposure, only reversible cellular changes have been seen in the low dose group. At 9 mg/m<sup>3</sup> (75 fibers/cc), areas of lung fibrosis are barely discernible and at 16 mg/m<sup>3</sup> (150 fibers/cc) both lung and pleural fibrosis are present. At this time, no lung or pleural cancer has been seen in the multiple dose study. This information will be updated once the study is completed.

The International Agency for Research on Cancer (IARC) reviewed the carcinogenicity data on man-made vitreous fibers (including ceramic fiber, glasswool, rockwool, and slagwool) in 1987. IARC classified ceramic fiber, fibrous glasswool and mineral wool (rockwool and slagwool) as possible human carcinogens (Group 2B).

## FIRST AID

### INGESTION:

Ingestion is unlikely. If ingested, the preferred method of elimination is through natural gastrointestinal elimination. Drink extra water. Get medical attention if gastrointestinal symptoms develop, for example, irritation, nausea, vomiting, abdominal pain and diarrhea.

### SKIN CONTACT:

Remove contaminated clothing. Wash area of contact thoroughly with soap and water. Do not rub or scratch exposed skin. Using a skin cream or lotion after washing may be helpful. Get medical attention if irritation persists.

### EYE CONTACT:

Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Do not rub eyes. Get medical attention if irritation persists.

### INHALATION:

Remove exposed person from source of exposure to fresh air. Some people may be sensitive to a fiber induced irritation of the respiratory tract. If symptoms such as shortness of breath, cough, wheezing or chest pain develop, seek medical attention. If person experiences continued breathing difficulties, administer oxygen until medical assistance can be rendered.

## NOTES TO PHYSICIAN

Thermal decomposition of inorganic binder during first heat of product may release hydrocarbons, including small amounts of formaldehyde and oxides of carbon.

## PERSONAL PROTECTION INFORMATION

The following personal protective guidelines should be followed. However, when the material has been exposed to temperatures greater than 1800 F, more extensive precautions are required as outlined in the "Special Precautions/Supplemental Information" section.

### EYE PROTECTION:

Wear safety glasses or chemical goggles to prevent eye contact. Contact lenses should not be worn unless chemical goggles are also used and care is taken not to touch the eyes with

contaminated body parts or materials. Have eye washing facilities readily available where eye contact can occur.

#### SKIN PROTECTION:

Wear gloves, hats and full body covering to prevent skin irritation as necessary (see Special Precautions/Supplemental Information Section).

#### RESPIRATORY PROTECTION:

Properly designed and operated engineering controls are the most effective methods for minimizing airborne dust and fiber. If exposures exceed our Recommended Exposure Guideline of 1 fiber/cc of air (8-hour TWA) and engineering controls are not feasible, respiratory protection (as described below) must be used. Respiratory protection must also be used if irritation is experienced, when airborne concentrations are unknown, or the material has been exposed to temperatures greater than 1800 F (see Special Precautions/Supplemental Information Section). When handling RCF products in monitored areas, Carborundum recommends that NIOSH/MSHA approved respirators be worn as outlined in the following table:

Concentration (8-hour TWA)	Minimum Acceptable Respirator Type
0 - 1 fiber/cc	Optional disposable dust respirator (e.g. 3M 9970 or equivalent).
1 - 5 fibers/cc	Half-face, air-purifying respirator equipped with high-efficiency particulate air (HEPA) filter cartridges (e.g. 3M 6000 series with 2040 filter or equivalent).
5 - 25 fibers/cc	Full face, air-purifying respirator with high-efficiency particulate air (HEPA) filter cartridges (e.g. 3M 7800S with 7255 filters or equivalent) or powered air-purifying respirator (PAPR) equipped with HEPA filter cartridges (e.g. 3M W3265S with W3267 filters or equivalent).
Greater than 25 fibers/cc	Full face, positive pressure supplied air respirator (e.g. 3M 7800S with W9435 hose and W3196 low pressure regulator kit or W3061 high pressure regulator kit connected to clean air supply or equivalent).

If airborne fiber levels are not known, as minimum protection, use half-mask air-purifying respirator equipped with high-efficiency particulate air (HEPA) filter cartridges (e.g. 3M 6000 series or equivalent). If respiratory protection is used, employees must be given instruction and training as described in 29 CFR 1910.134.

#### PHYSICAL PROPERTIES

BOILING POINT:	NA
SPECIFIC GRAVITY:	ND
MELTING POINT:	ND
% VOLATILE:	NA
VAPOR PRESSURE:	NA
EVAPORATION RATE (WATER=1):	NA
VAPOR DENSITY (AIR=1):	NA
VISCOSITY:	NA
% SOLUBILITY IN WATER:	NA

ND = No Data  
NA = Not Applicable

OCTANOL/WATER PARTITION COEFFICIENT: ND  
POUR POINT: NA  
pH: NA  
APPEARANCE/ODOR: ND

#### FIRE AND EXPLOSION DATA

FLASH POINT: NONE  
AUTOIGNITION TEMPERATURE: NONE  
FLAMMABILITY LIMITS IN AIR (% BY VOL.) LOWER:  
FLAMMABILITY LIMITS IN AIR (% BY VOL.) UPPER:

#### BASIC FIREFIGHTING PROCEDURES:

Use extinguishing agent suitable for type of surrounding fire.

#### UNUSUAL FIRE AND EXPLOSION HAZARDS:

Fires involving unused/inventoried product may give off hydrocarbons, including small amounts of formaldehyde and oxides of carbon.

#### REACTIVITY DATA

#### STABILITY/INCOMPATIBILITY:

Stable under normal conditions of use. Soluble in hydrofluoric acid, phosphoric acid and concentrated alkali.

#### HAZARDOUS REACTIONS/DECOMPOSITION PRODUCTS:

Thermal decomposition of the binder from fires or first heat of product may release hydrocarbons, including small amounts of formaldehyde and oxides of carbon. Oxides of silica will also be formed. Use adequate ventilation or other precautions to eliminate exposure to vapors resulting from thermal decomposition of binder.

#### ENVIRONMENTAL INFORMATION

#### Spill or Leak Procedure:

Do not walk through spilled material. Shovel into a container for later disposal. Avoid cleanup procedures that may result in water pollution.

#### WASTE DISPOSAL:

This substance, when discarded or disposed of, is not specifically listed as a hazardous waste in Federal regulations; however it could be characteristically hazardous if it is considered toxic, corrosive, ignitable, or reactive according to Federal definitions (40 CFR 261). Additionally, it could be designated as hazardous according to state regulations. This substance could also become a hazardous waste if it is mixed with or comes in contact with a hazardous waste. Check 40 CFR 261 to determine whether it is a hazardous waste. If it is a hazardous waste, regulations at 40 CFR 262, 263, 264, 268 and 270 apply. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate.

The transportation, storage, treatment, and disposal of this waste material must be conducted in compliance with all applicable Federal, state, and local regulations, and in such a manner as to assure no discharge to a source of drinking water.

#### SARA TITLE III INFORMATION:

ND = No Data  
NA = Not Applicable

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Listed below are the hazard categories for the Superfund Amendments and Reauthorization Act (SARA) Section 311/312 (40 CFR 370):

Immediate Hazard: - Delayed Hazard:  Fire Hazard: - Pressure Hazard: - Reactivity Hazard: -

The product does not contain any toxic chemical(s) subject to the reporting requirements of the Superfund Amendments and Reauthorization Act (SARA) Section 313 (40 CFR 372).

#### ADDITIONAL ENVIRONMENTAL REGULATORY INFORMATION:

There may be specific regulations at the local, regional or state level that pertain to this material.

#### REGULATORY INFORMATION

A component of this product has been registered as a trade secret in Canada. The date of registration is 88/11/08 and the registration number is 1026-002.

This product contains ingredients with the following New Jersey Trade Secret Registry numbers:

80100144-5003

Consult OSHA's Formaldehyde Standard 29 CFR 1910.1048 for provisions on training, monitoring and medical surveillance, etc.

All components of this product are listed on the TSCA inventory. All components of this product are listed on the Canadian DSL Inventory.

This product contains the following substance(s) listed by the State of California on Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986:

- ceramic fibers (airborne particles of respirable size)

The following Canadian Workplace Hazardous Materials Information System (WHMIS) categories apply to this product:

Compressed Gas	-	Flammable/Combustible	-	Oxidizer	-	Acutely Toxic	-
Other Toxic Effects	x	BioHazardous	-	Corrosive	-	Dangerously Reactive	-

#### SPECIAL PRECAUTIONS/SUPPLEMENTAL INFORMATION

##### HANDLING/STORAGE:

Thermal decomposition of the binder from fires or first heat of product may release hydrocarbons, including small amounts of formaldehyde and oxides of carbon. Oxides of silica will also be formed. Use adequate ventilation or other precautions to eliminate exposure to vapors resulting from thermal decomposition of binder.

The toxicologic data indicate that ceramic fiber should be handled with caution. The handling practices described in this MSDS must be strictly followed (see section on Personal Protection Information). In particular, when handling refractory ceramic fiber in any application, special caution should be taken to avoid unnecessary cutting and tearing of the material to minimize generation of airborne dust.

It is recommended that full body clothing should be worn to reduce the possibility of skin irritation. Washable or disposable clothing may be used. Do not take unwashed work clothing home. Work clothes should be washed separately from other clothing. Rinse



washing machine thoroughly after use. If clothing is to be laundered by someone else, inform launderer of proper procedure. Work clothes and street clothes should be kept separate to prevent contamination.

Product which has been in service at elevated temperatures (greater than 1800 F) may undergo partial conversion to cristobalite, a form of crystalline silica. This reaction occurs at the furnace lining hot face. As a consequence, this material becomes more friable; special caution must be taken to minimize generation of airborne dust. The amount of cristobalite present will depend on the temperature and length in service.

IARC has recently reviewed the animal, human and other relevant experimental data on silica in order to critically evaluate and classify the cancer causing potential. Based on its review, IARC classified crystalline silica as a group 2A carcinogen (probable human carcinogen).

The OSHA permissible exposure limit (PEL) for cristobalite is 0.05 mg/M3 (respirable dust). The ACGIH threshold limit value (TLV) for cristobalite is 0.05 mg/M3 (respirable dust) (ACGIH 1991-92). Use NIOSH or MSHA approved equipment when airborne exposure limits may be exceeded. Minimal acceptable respirators recommended for given airborne cristobalite concentrations are:

Concentration	Minimum Acceptable Respirator Type
Up to 5 fibers/cc or up to 10 times the OSHA PEL for cristobalite	Half face, air-purifying respirator equipped with high-efficiency particulate air (HEPA) filter cartridges (e.g. 3M 6000 series with 2040 filter or equivalent).
Up to 25 fibers/cc or 50 times the OSHA PEL for cristobalite (2.5 mg/m3)	Full face, air-purifying respirator with high-efficiency particulate air (HEPA) filter cartridges (e.g. 3M 7800S with 7255 filters or equivalent) or powered air-purifying respirator (PAPR) equipped with HEPA filter cartridges (e.g. 3M W3265S with W3267 filters or equivalent).
Greater than 25 fibers/cc or 50 times the OSHA PEL for cristobalite (2.5 mg/m3)	Full face, positive pressure supplied air respirator (e.g. 3M 7800S with W9435 hose and W3196 low pressure regulator kit or W3061 high pressure regulator kit connected to clean air supply or equivalent).

If airborne fiber or cristobalite concentrations are not known, as minimum protection, use NIOSH/MSHA approved half face, air-purifying respirator with HEPA filter cartridges.

Insulation surfaces should be lightly sprayed with water before removal to suppress airborne dust. As water evaporates during removal, additional water should be sprayed on surfaces as needed. Only enough water should be sprayed to suppress dust so that water does not run onto the floor of the work area. To aid the wetting process, a surfactant can be used.

After RCF removal is completed, dust-suppressing cleaning methods, such as wet sweeping or vacuuming, should be used to clean the work area. If dry vacuuming is used, the vacuum must be equipped with a HEPA filter. Air blowing or dry sweeping should not be used. Dust-suppressing components can be used to clean up light dust.

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#### EMPTY CONTAINERS:

Product packaging may contain product residue. Do not reuse.

## TRANSPORTATION REQUIREMENTS

D.O.T. PROPER SHIPPING NAME (49 CFR 172.101): NA  
 D.O.T. HAZARD CLASS (49 CFR 172.101): NA  
 UN/NA CODE (49 CFR 172.101): NA  
 BILL OF LADING DESCRIPTION (49 CFR 172.202): PRODUCT NAME  
 D.O.T. LABELS REQUIRED (49 CFR 172.101): NA  
 D.O.T. PLACARDS REQUIRED (49 CFR 172.504): NA

## INGREDIENTS/HEALTH HAZARD INFORMATION

COMPONENT	CAS NO.	%	EXPOSURE LIMITS - REF.
Aluminosilicate (vitreous)	NA	30-70	1 fiber/cc 8-hr. TWA (Carborundum) *
Silicon dioxide (amorphous)	7631-86-9	10-30	10 mg/M3 (total) TLV (ACGIH) 6 mg/M3 PEL (OSHA)
Water	7732-18-5	20-60	None established
Remaining components not determined hazardous and/or hazardous components present at less than 1.0% (0.1% for carcinogens).	NA	Trace	NA

\*No OSHA or ACGIH exposure limits have been established for these materials. Pending the results of long-term health effects studies, airborne exposures should be controlled at or below the Carborundum Recommended Exposure Guidelines listed above.

REVISION DATE: 29-mar-1992      REPLACES SHEET DATED: 10-jan-1991  
 COMPLETED BY: KREEM PRODUCTS

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However, no warranty or representation, express or implied, is made as to the accuracy or completeness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.




U.S. TESTING LAB INDEPENDENT TEST REPORT:

**United States Testing Company, Inc.**  
**California Division**  
 8568 TELEGRAPH ROAD • LOS ANGELES, CALIFORNIA 90040 • 213-722-0808 • 723-7181

**NUMBER**  
LA 10629  
4/14/81

**REPORT OF TEST**

 **CLIENT:** Belpoint Company, Inc., dba Kream Corp.  
 4825 Calle Alto  
 Camarillo, CA 93010

**SUBJECT:** Flexibility and Solvent Resistance Testing

**REFERENCE:**  
 Tests and charges were authorized by Mr. Dan Kaufman in letter dated March 16, 1981 and Purchase Order Number G513 dated March 26, 1981.

**SAMPLE DESCRIPTION:**  
 One sample of "Tank Prep" cleaner and one sample of "Kream" vinyl plastic coating material were provided and identified by the Client.

**REQUEST:**  
 Test the low temperature flexibility and the solvent resistance of steel shim specimens coated with "Kream" as outlined in 3M Product Specification 776.

**METHOD:**  
 Three mil steel shim was cut into 1"x6" strips for the flexibility tests and into 3"x6" strips for the solvent resistance tests. They were cleaned with "Tank Prep" and coated with "Kream" as outlined by the Client.  
 For the low temperature flexibility test, the coated samples were soaked in leaded gasoline for 48 hours at 100°F. They were then removed from the gasoline and held at -65°F for two hours. Following this, they were bent around a three inch mandrel at -65°F and examined for cracking or loss of adhesion.  
 For the solvent resistance tests, coated 3"x6" steel shim specimens were immersed in the solvent or solvent and salt water combinations listed below and held at 100°F for seven days. The specimens were then removed from the solvents and examined for softening, cracking, loss of adhesion or corrosion of the metal.

**SIGNED FOR THE COMPANY**  
 BY *Rita Boggs, Ph.D.*  
 Rita Boggs, Ph.D.

Page 1 of 2  
 Chemist: *Ann Wagner*  
 Ann Wagner

Laboratories in: New York • Chicago • Los Angeles • Tulsa • Memphis • Reading • Richmond  
 UNITED STATES TESTING COMPANY, INC. REPORTS AND TESTS ARE FOR THE EXCLUSIVE USE OF THE CLIENT TO WHOM THEY ARE ADDRESSED AND THEY AND THE WORK OF THE UNITED STATES TESTING COMPANY, INC. OR ITS AFFILIATES OR INDENTURES ARE NOT TO BE USED UNDER ANY CIRCUMSTANCES IN CONNECTION WITH ANY LITIGATION, PUBLIC AND PRIVATE, OR IN CONNECTION WITH ANY OTHER MATTER WITHOUT THE WRITTEN APPROVAL OF THE UNITED STATES TESTING COMPANY, INC. THE UNITED STATES TESTING COMPANY, INC. MUST BE ADVISED OF ANY SUCH USE IN WRITING. SUCH APPROVAL DOES NOT IMPLY THAT THE UNITED STATES TESTING COMPANY, INC. IS RESPONSIBLE FOR THE RESULTS OF ANY SUCH USE OR THAT THE UNITED STATES TESTING COMPANY, INC. IS NOT PROVIDING ANY SERVICE TO THE CLIENT BY SUCH USE. THE UNITED STATES TESTING COMPANY, INC. SHALL BE HELD TO STRICTLY ENFORCE ITS POLICY OF NOT PROVIDING ANY SERVICE TO THE CLIENT BY SUCH USE. THE UNITED STATES TESTING COMPANY, INC. SHALL BE HELD TO STRICTLY ENFORCE ITS POLICY OF NOT PROVIDING ANY SERVICE TO THE CLIENT BY SUCH USE. THE UNITED STATES TESTING COMPANY, INC. SHALL BE HELD TO STRICTLY ENFORCE ITS POLICY OF NOT PROVIDING ANY SERVICE TO THE CLIENT BY SUCH USE.

CLIENT: Belpart Co., Inc.  
United States Testing Company, Inc.

Number  
LA 10629  
Amended  
4/27/81

RESULTS:

Low Temperature Flexibility - No cracking, checking or  
loss of adhesion was observed.

Solvent Resistance

Solvent  
Leaded gasoline/3% salt water

Observations

Coating turned brown.  
Corrosion on edges where  
exposed to salt water.

Unleaded gasoline/3% salt  
water

Coating turned brown.  
Corrosion on edges where  
exposed to salt water.

Gaschol (Leaded gasoline,  
10% Ethanol)

Coating turned slightly  
brown.

Ethanol

No changes observed.  
No changes observed.

Methanol

Corrosion from edges where  
exposed to salt water.

Diesel fuel/3% salt water

No changes observed.

Hydraulic fluid (Sta-Lube  
Jack oil SAE 10-20W)

No softening, blistering, leaching or loss of adhesion of  
the coatings was observed on any of the specimens. No  
corrosion was observed on any of the specimens where in  
contact with the hydrocarbon test fluids.

\*\*\*\*\*

How to  
Eliminate and  
Prevent

# TANK RUST





# Why You Need To Coat Your Tank...

Does your motorcycle sometimes leave puddles of gasoline when you park? Does it occasionally run as if the choke was stuck on? Does your mileage take a big drop now and then?

If you answer 'yes' to any of these, you probably have a rust problem in your fuel tank.

Actually, rust in fuel tanks is a much more common problem than you might guess. In fact, most motorcycle fuel tanks will have visible rust within a year or two.

Even though the mild steel that is used to form fuel tanks corrodes rather easily, most motorcycle manufacturers don't bother to coat the inside of their fuel tanks on the theory that there won't be enough oxygen available to cause rust.

In the real world, though, moisture and oxygen are constantly getting into your tank. Every time you wash your bike, or it rains, moisture is getting in and settling

down to the bottom and into the corners where it starts to rust. Each time you shut your motorcycle off the cooling fuel draws moist air and oxygen in through the breather where it attaches to the sides and top and starts to rust.

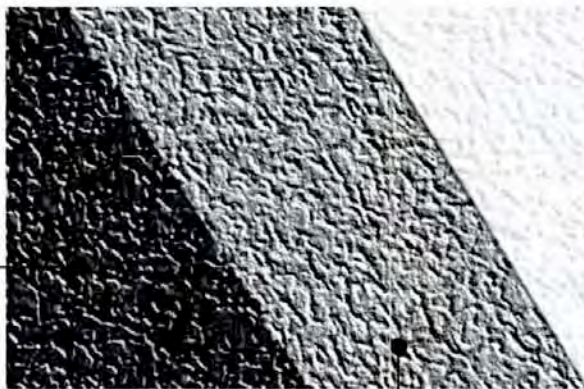
If you can see rust when you look into the filler hole, you can be sure there is even more up on top and in the corners where you can't see it!

Fortunately, there is an easy and inexpensive solution to fuel tank rust...

KREEM TANK PREP to clean out the old rust. KREEM TANK LINER to protect against rust.

KREEM Tank Liner is a specially formulated elastomer material that coats the inside of your fuel tank with a thick, fuel-resistant coating that bonds onto properly prepared metal to lock out moisture, impurities and oxygen.

Uncoated fuel tanks can build up thick, flaking coats of problem-causing rust.



KREEM Tank Liner is a tough, white elastomer coating that bonds to the tank's metal interior, sealing it against moisture and oxygen.

After using KREEM Tank Prep, rust is removed and the metal is properly etched to accept KREEM Tank Liner.



## Formula for Success

Basics for good results when using Kreem Tank Liner & Tank Prep.

- 1 – **Tank Prep is a rust remover and metal etch, it does not remove grease!** You must always use a separate degreaser on your tank prior to using Tank Prep. This is also important on new tanks which come with an oily protective coating.
- 2 – Remove all rust from the tank. Tank Prep will do this properly. Time varies depending on how much rust is in the tank. Visually inspect your tank and continue until tank is free of all rust.
- 3 – After using Tank Prep A & B do NOT dry the tank as this will cause flash rust to form. Add Kreem Tank Liner IMMEDIATELY after rinsing with Tank Prep B.
- 4 – Do not allow Kreem Tank Liner to puddle as this will not allow the material to dry properly. Kreem Tank Liner requires air to dry and cure properly. Keep in a well ventilated area (i.e. outdoors).

## Cleaning Your Tank...

KREEM Tank Prep is a unique two-part system to prepare metal fuel tanks before coating with KREEM Fuel Tank Liner. Used as directed, Tank Prep will remove rust and etch the metal surface to ensure maximum adhesion of KREEM Tank Liner.

It is absolutely critical that the inside of the fuel tank is oil-free, without rust and properly etched to insure adhesion of KREEM Tank Liner.

**CAUTION:** Read warning statements on all labels before using any of these products. KREEM Tank Prep solutions may damage paint. TANK PREP A contains acid, handle with care using protective eyewear, rubber gloves and adequate ventilation. TANK PREP B contains Methyl ethyl ketone, use only in well ventilated areas, preferably outdoors. Highly flammable, do not use near open flame.

- STEP 1 Drain fuel from tank into an approved container and then remove the tank from the vehicle. Remove any valves and petcocks. Seal all openings securely so that liquid will not drain out. Small openings can be capped with rubber stoppers, threaded pipe plugs, corks or wood dowels. Larger openings can be capped with a metal or wood plate and a hand-made gasket.
  - STEP 2 Fill the tank about one-quarter full with hot water and add a tablespoon of strong dish soap. If the tank is badly rusted or has rust flakes, add a handful of nuts and bolts to help loosen the rust. Shake the tank until all rust has been loosened.
- New Tanks:** It is important to remove the oily protective coating before using tank prep. KREEM NEW TANK CLEANER can be used for this. An industrial strength detergent may also be used.
- STEP 3 Drain off soapy solution and rinse tank with clean water to remove all soap, oil and loose rust particles.

- STEP 4 Pour KREEM Tank Prep A into the tank and add 2.5 gallons of warm water. TANK PREP A works best when the tank is completely full and in contact with all metal surfaces. If this is not possible, you should turn the tank to different positions so that the solution has extended contact with all metal surfaces.

NOTE: ALLOW TANK TO VENT. DO NOT ALLOW PRESSURE TO BUILD UP.

Leave Tank Prep A in the tank until all rust is dissolved and the metal is etched to a dull grey finish. The time required will depend on the amount of rust in the tank. New tanks can be etched in 4 hours, rusty tanks will take longer; we suggest overnight.

**Heavy Rust Deposits:** Tank Prep A removes rust through a chemical process which slowly neutralizes as rust is removed. In cases where the rust is so heavy that the solution becomes neutralized before the rust is entirely removed, a second treatment of Tank Prep A is required to fully remove the rust and properly etch the metal surface.

- STEP 5 Pour out Tank Prep A solution and save in an appropriate container as it can be used for a second application. Rinse tank thoroughly with water. Inspect tank interior for rust removal and etching of surface. If necessary, repeat Step 4. Flush the tank with clean water until the rinse water no longer foams and all traces of Tank Prep A are removed.
- STEP 7 In a well ventilated area, immediately rinse tank interior with full-strength Tank Prep B and agitate to ensure thorough treatment. This final rinse will remove any residual water and will prime and condition the tank for KREEM Fuel Tank Liner.
- STEP 8 Using a funnel, carefully drain Tank Prep B back into its original container and close tightly.

You are now ready to seal your tank with KREEM Fuel Tank Liner.

## Coating Your Tank...

KREEM FUEL TANK LINER is designed for use as a preventive maintenance product in new and old metal tanks containing gasoline, gasohol or diesel fuel. KREEM TANK LINER has a unique formulation with extremely rapid set-up, that prevents leakage from hairline cracks and seam pinholes by coating the tank's inner surface with a fuel resistant elastomer. When properly installed, KREEM Tank Liner seals the inside surfaces of metal tanks from moisture and oxygen.

For small tanks (1-5 gallons), use one pint of KREEM Tank Liner. For larger tanks, use one quart per 20 gallons of tank capacity. If the tank contains baffles, be sure to consider the increase in surface area. For spraying or brushing, thin with Methyl ethyl ketone to desired consistency.

**CAUTION:** Read warning statements on all labels before using any of these products. KREEM Tank Liner may damage paint. KREEM



Tank Liner contains Methyl ethyl keytone and the vapors can be harmful, use only in well ventilated areas, preferably outdoors. Highly flammable, do not use near open flame.

KREEM Tank Liner is NOT for use in plastic tanks. KREEM Tank Liner is NOT compatible with all fiberglass tanks. You must spot test to determine compatibility with KREEM Tank Liner before use.

- STEP 1** To obtain proper adhesion, the inside surfaces of the tank must be rust-free, oil free and the metal surface etched. We strongly suggest that you use the KREEM Tank Prep Kit to remove rust and etch the metal before using KREEM Tank Liner. Read the previous section on *Cleaning Your Tank*.
- STEP 2** If not already done, securely seal all tank openings per instructions in previous section.
- STEP 3** Shake or stir KREEM Tank Liner well before use. Keep container tightly closed when not in use.
- STEP 4** Carefully pour KREEM Tank Liner into the tank taking care not to get any on painted surfaces. Close spout and gently rotate the tank in all directions to coat entire inner surface. When all surfaces have been completely coated there should still be a generous excess left in the tank. Let tank stand for 8-10 minutes with spout open. Close the spout and slowly rotate the tank to re-coat all surfaces again. Let tank stand on a different side for an additional 8-10 minutes with spout open. Repeat this process until the tank has the desired coating.

**IMPORTANT:** Do not allow the coating to puddle or pool and dry.

- STEP 5** Using a funnel, drain off excess coating back into the original container for later use. Remove all stops and allow to air-dry in a well-ventilated area for at least 24 hours. A nozzle from a low pressure air compressor blowing lightly into the fuel spout and out another opening will greatly reduce setup time. **DO NOT USE A HAIR DRIER!**

**For extra protection:** Allow tank to air-dry for 6 hours or longer; re-seal openings and repeat Steps 4 and 5 of application process.

- STEP 6** Carefully trim off any excess KREEM Tank Liner around valves and petcocks and then reassemble the tank and mount.

## Helpful Hints

### How can I remove old Kreem?

Acetone or Methyl ethyl keytone (available at most paint stores) will re-dissolve Kreem. Fill about half full, seal the tank and leave for about 24 hours with periodic agitation. Drain into a container and inspect tank. If Kreem remains, pour solution back into tank, reseal and repeat until all Kreem is removed.

### Can I seal over old Kreem Tank Liner after gasoline has been in the tank?

Yes. Visually inspect the tank interior for good adhesion. If there is no peeling you may wash tank out with a degreaser such as warm dish washing solution. Next, rinse tank for 2 minutes using a small amount (1 pint) of acetone or Methyl ethyl keytone. Re-coat the tank with Kreem Tank Liner (**do NOT use Tank Prep A**).

If coating is peeling, remove as described above and re-apply after using Tank Prep A & B.

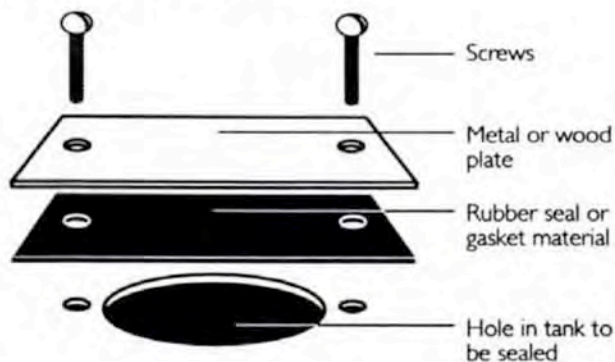
Do NOT coat over other manufacturers' coatings as we cannot be sure other coatings are compatible with Kreem. Both Harley-Davidson and BMW factory coat their tanks. Do NOT use Tank Prep A on coated tanks until old coating has been removed.

### What types of fuel is Kreem compatible with?

We have had Kreem independently tested with ethanol, methanol, alcohol based oxygenated fuels, diesel and hydraulic fluids. Reports are available upon request.

### How do I thin Kreem Tank Liner?

Use Methyl ethyl keytone or acetone.



### What can I use to plug small threaded openings?

Use threaded pipe plugs, rubber stoppers, small wooden dowels, silicone caulking. **DO NOT USE** duck tape, it doesn't work.

### How do I cover large openings, sending units, petcocks, etc.?

Referring to the above illustration, use a piece of wood or metal large enough to cover the opening. Drill holes to allow the plate to be bolted or screwed onto the tank. Fabricate a gasket out of rubber or gasket material and sandwich between the tank and the plate. Secure to the tank with screws or bolts.



KREEM PRODUCTS

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## **IMPORTANT NOTICE TO PURCHASER**

The following is made in lieu of all warranties, express or implied: Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use or inability to use the suitability of the product. Before using, user shall determine the suitability of the product for his intended use, and user assumes all risk and liability whatsoever in connection therewith. The foregoing may not be altered except by an agreement signed by the officers of seller and manufacturer – KREEM PRODUCTS.



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