

## 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

PHOSPHORIC ACID

PEL=1 MG/M<sup>3</sup>, TWA

STEL=3 MG/M<sup>3</sup>

TLV=1 MG/M<sup>3</sup>

WATER

PEL=NOT ESTABLISH.

TLV=NOT ESTABLISH.

##### PERCENT

VOL ND

WT 85

WT 75

VOL ND

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 ALKALIES. 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 GASES.

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**

**\*\*KREEM PRODUCTS\*\* EXPRESSLY DISCLAIMS ALL EXPRESS OR IMPLIED WARRANTIES OF MERCHANT ABILITY 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 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:  $\text{CH}_3\text{COC}_2\text{H}_5$

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  $\text{CO}_2$  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 ASPHYXANT. (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**

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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**

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

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