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THE POWER OF THREE<sup>3</sup>

**PHARMCO-AAPER**

AND COMMERCIAL ALCOHOLS

Product Information (203) 740-3471 / Emergency Assistance CHEMTREC 1-800-424-9300

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**MATERIAL SAFETY DATA SHEETS**

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PRODUCT NAME: METHYL PROPYL KETONE  
MATERIAL SAFETY DATA SHEET

**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

Chemical Name: not applicable  
Molecular Formula: not applicable  
Molecular Weight: not applicable  
Product Use: solvent  
OSHA Status: hazardous

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

(Typical composition is given and it may vary. A certificate of analysis can be provided.)

Weight % Component CAS Registry Number  
94.5 methyl propyl ketone 107-87-9  
5.5 methyl isobutyl ketone 108-10-1

**3. HAZARDS IDENTIFICATION**

WARNING!

FLAMMABLE LIQUID AND VAPOR

HIGH VAPOR CONCENTRATIONS MAY CAUSE DROWSINESS AND IRRITATION OF THE EYES  
OR

RESPIRATORY TRACT

POTENTIAL PEROXIDE FORMER

HMIS Hazard Ratings: Health - 1, Flammability - 3, Chemical Reactivity - 0

NOTE: HMIS ratings involve data and interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

**4. FIRST-AID MEASURES**

Inhalation: Move to fresh air. Treat symptomatically. Get medical attention if symptoms persist.

Eyes: In case of irritation from airborne exposure, move to fresh air. If easy to do, remove contact lenses. Get medical attention if symptoms persist.

Skin: Wash with soap and water. Get medical attention if symptoms occur.

Ingestion: Seek medical advice.

## 5. FIRE FIGHTING MEASURES

Extinguishing Media: water spray, dry chemical, carbon dioxide (CO<sub>2</sub>), alcohol foam

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing. Use water spray to keep fire-exposed containers cool.

Water may be ineffective in fighting the fire.

Hazardous Combustion Products: carbon dioxide, carbon monoxide

Unusual Fire and Explosion Hazards: Flammable. Vapors may cause a flash fire or ignite explosively.

Vapors may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations. May form peroxides of unknown stability.

## 6. ACCIDENTAL RELEASE MEASURES

Use personal protective equipment. (See EXPOSURE CONTROLS/PERSONAL PROTECTION.) Eliminate all ignition sources. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste.

For Large Spills: Use water spray to disperse vapors and dilute spill to a nonflammable mixture. Prevent runoff from entering drains, sewers, or streams.

## 7. HANDLING AND STORAGE

Personal Precautionary Measures: Avoid breathing high vapor concentrations.

Use only with adequate ventilation.

Prevention of Fire and Explosion: Keep away from heat, sparks, and flame.

Keep from contact with oxidizing materials. Use only with adequate ventilation. Minimize exposure to air.

If peroxide formation is suspected, do not open or move container.

Storage: Keep container tightly closed. Keep container in a well-ventilated place. Store away from heat and light.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Country specific exposure limits have not been established or are not applicable unless listed below.

### METHYL PROPYL KETONE

US ACGIH Threshold Limit Values

Time Weighted Average (TWA): 200 ppm, 705 mg/m<sup>3</sup>

US ACGIH Threshold Limit Values

Short Term Exposure Limit (STEL): 250ppm, 881 mg/m<sup>3</sup>

### 2-PENTANONE

US NIOSH: Pocket Guide to Chemical Hazards

Recommended exposure limit (REL): 150 ppm, 530 mg/m<sup>3</sup>

US OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

PEL: 200 ppm, 700 mg/m<sup>3</sup>

US OSHA Table Z-1-A (29 CFR 1910.1000)

Time Weighted Average (TWA): 200 ppm, 700 mg/m<sup>3</sup>

US OSHA Table Z-1-A (29 CFR 1910.1000)

Short Term Exposure Limit (STEL): 250ppm, 875 mg/m<sup>3</sup>

### METHYL ISOBUTYL KETONE

US ACGIH Threshold Limit Values

Time Weighted Average (TWA): 50 ppm, 205mg/m<sup>3</sup>

US ACGIH Threshold Limit Values

Short Term Exposure Limit (STEL): 75ppm, 305 mg/m<sup>3</sup>

### HEXONE

US NIOSH: Pocket Guide to Chemical Hazards

Recommended exposure limit (REL): 50ppm, 205 mg/m<sup>3</sup>

US NIOSH: Pocket Guide to Chemical Hazards

Short Term Exposure Limit (STEL): 75ppm, 300mg/m<sup>3</sup>

US OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

PEL: 100ppm, 410 mg/m<sup>3</sup>

US OSHA Table Z-1-A (29 CFR 1910.1000)

Time Weighted Average (TWA): 50ppm, 205mg/m<sup>3</sup>

US OSHA Table Z-1-A (29 CFR 1910.1000)

Short Term Exposure Limit (STEL): 75 ppm, 300 mg/m<sup>3</sup>

Ventilation: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. Use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Respirator type: organic vapor.

Eye Protection: It is a good industrial hygiene practice to minimize eye contact.

Skin Protection: It is a good industrial hygiene practice to minimize skin contact.

Recommended Decontamination Facilities: eye bath, washing facilities.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: liquid

Color: colorless

Odor: ketone

Odor Threshold: 11 ppm

Specific Gravity: 0.81 (20 deg C)

Vapor Pressure: 20 deg C; 37.0 mbar

Vapor Density: 2.9

Freezing Point: -78 deg C

Boiling Point: 101 Deg C

Evaporation Rate: 2.3 (n-butyl acetate = 1)

Solubility in Water: moderate

Flash Point: 8 deg C (Tag closed Cup)

Autoignition Temperature: 449 deg C (ASTM D2155)

Thermal Decomposition Temperature: (DTA) No exotherm to 500 deg C

## 10. STABILITY AND REACTIVITY

Stability: Stable. On long-term storage, materials containing similar

Functional groups form peroxides of unknown stability.

Incompatibility: Material reacts violently with strong bases, strong oxidizing agents, strong reducing agents.

## 11. TOXICOLOGICAL INFORMATION

General: Based on animal data and structure-activity relationships, this product is NOT expected to cause nervous system damage.

Toxicity data are not available unless listed below.

Oral LD-50 (rat): 3.73 mg/kg

Inhalation LC-50 (rat): 4h: >2000

Dermal LD-50 (rabbit): 8 mg/kg

Skin irritation (guinea pig): slight

Eye irritation (rabbit): slight

## 12. ECOLOGICAL INFORMATION

Oxygen Demand Data:

BOD-5: 1,380 mg/g

BOD-20: 1,800 mg/g

COD: 1,800 mg/g

ThOD: 2,600 mg/g

Acute Aquatic Effects Data:

96-h LC-50 (fathead minnow): >1000 microliter(s)/l

96-h LC-50 (snail): >1000 microliter(s)/l  
96-h LC-50 (daphnid): >1000 microliter(s)/l

### 13. DISPOSAL CONSIDERATIONS

Discharge, treatment, or disposal may be subject to national, state, or local laws. Mix with compatible chemical which is less flammable and incinerate. Since emptied containers retain product residue, follow label warnings even after container is emptied. Residual vapors may explode on ignition; do not cut, drill, grind, or weld on or near this container.

### 14. TRANSPORT INFORMATION

Marine pollutant components: none unless listed below:  
DOT (USA): Class 3, packing group II  
ICAO Status: Class 3, Packing group II  
Class 3, packing group II  
IMDG Status: Class 3, packing group II

### 15. REGULATORY INFORMATION

WHMIS (Canada) Status: controlled  
WHMIS (Canada) Hazard Classification: B/2  
SARA 311-312 Hazard Classification(s):  
Immediate (acute) health hazard  
Fire hazard  
SARA 313: none, unless listed below  
Methyl isobutyl ketone  
Carcinogenicity Classification (components present at 0.1% or more): none,  
Unless listed below.  
TSCA (US Toxic Substances Control Act): All components of this product are  
Listed on the TSCA inventory. Any impurities present in this product are  
Exempt from listing.  
DSL (Canadian Domestic Substances List) and CEPA (Canadian Environmental  
Protection Act): This product is listed on the DSL. Any impurities present  
In this product are exempt from listing.  
EINECS (European Inventory of Existing Commercial Chemical Substances): All  
Components of this product are listed on EINECS.  
AICS/NICNAS (Australian Inventory of Chemical Substances and National  
Industrial Chemicals Notification and Assessment Scheme): All components  
Of this product are listed on AICS or otherwise comply with NICNAS.  
MITI (Japanese Handbook of Existing and New Chemical Substances): All  
Components of this product are listed in the Handbook or have been approved  
In Japan by new substance notification.  
This document has been prepared in accordance with the  
MSDS requirements of  
the OSHA Hazard Communication Standard 29 CFR 1910.1200.  
**Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA):** No  
chemicals ion this material with known CAS numbers are subject to the reporting requirements of  
CERCLA

### 16. OTHER INFORMATION

The information contained herein is based on data considered to be accurate based on the material as packaged. However, no warranty is expressed regarding the accuracy of these data or the results to be obtained from the use thereof. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It is the user's obligation to determine the conditions of safe use of the product. While this MSDS is based on technical data judged to be reliable, PHARMCO-AAPER assumes not responsibility for the completeness or accuracy of the information contained herein.