Methyl Propyl Ketone

1 PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: Methyl Propyl Ketone
SDS Number: R-049
Revision Date: 7/11/2017
CAS Number: 107-87-9
Chemical Formula: C5H10O
Supplier Details: High Valley Products, Inc.
1134 West 850 North
Centerville, Utah 84014
Emergency: PERS: 800-633-8253
Phone: 801-295-9591
Email: sales@hvchemical.com
Web: www.hvchemical.com

2 HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS Classification in Accordance with 29 CFR 1910 (OSHA HCS):
- Physical, Flammable Liquids, 2
- Health, Skin corrosion/irritation, 2
- Health, Serious Eye Damage/Eye Irritation, 2 A
- Health, Specific target organ toxicity - Single exposure, 3
- Health, Acute toxicity, 4 Inhalation
- Health, Acute toxicity, 4 Oral

GHS Label Elements, Including Precautionary Statements

GHS Signal Word: DANGER

GHS Hazard Pictograms:

GHS Hazard Statements:
- H225 - Highly flammable liquid and vapour
- H315 - Causes skin irritation
- H319 - Causes serious eye irritation
- H336 - May cause drowsiness or dizziness
- H332 - Harmful if inhaled
- H302 - Harmful if swallowed

GHS Precautionary Statements:
- P210 - Keep away from heat/sparks/open flames/hot surfaces.
- P233 - Keep container tightly closed.
- P240 - Ground and bond container and receiving equipment.
- P241 - Use explosion-proof [electrical/ventilating/lighting/...] equipment.
- P242 - Use non-sparking tools.
- P243 - Take action to prevent static discharges.
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P332 - IF SWALLOWED: Call a POISON CENTER/ doctor/...if you feel unwell.
P303 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P330 - Rinse mouth.
P330 - Rinse mouth.
P370 + P378 - In case of fire: Use water spray, carbon dioxide, dry chemical to extinguish.

**COMPOSITION/INFORMATION OF INGREDIENTS**

<table>
<thead>
<tr>
<th>Cas#</th>
<th>%</th>
<th>Chemical Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>107-87-9</td>
<td>&gt;90%</td>
<td>Methyl propyl ketone</td>
</tr>
<tr>
<td>108-10-1</td>
<td>&lt;10%</td>
<td>Methyl isobutyl ketone</td>
</tr>
</tbody>
</table>

**FIRST AID MEASURES**

If symptoms develop, move victim to fresh air. If symptoms persist, obtain medical attention.

Inhalation:
Wash with soap and water. Get medical attention if needed.
Eye Contact:
Immediately flush eyes with large amounts of water for at least 15 minutes, lifting eyelids occasionally to facilitate irrigation.

**FIRE FIGHTING MEASURES**

Flammable liquid and vapor. USE WATER WITH CAUTION. Material will float and may ignite on surface of water. Extinguishing media:

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

**ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures:
Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions:
Do not let product enter drains.

Methods and materials for containment and cleaning up:
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

**HANDLING AND STORAGE**

Handling Precautions:
Avoid contact with eyes, skin, or clothing. Wash thoroughly after handling. Minimize exposure to air. After opening, purge container with nitrogen before reclosing. Periodically test for peroxide formation on long-term storage. Do not allow to evaporate to near dryness. Do not distill to near dryness. Addition of water or appropriate reducing materials will lessen peroxide formation.
Storage Requirements: Keep container tightly closed. Store in cool/dry area. Suitable packing materials.

**EXPOSURE CONTROLS/PERSOAL PROTECTION**

**Personal Protective Equipment:**

Methyl propyl ketone cas#: (107-87-9) [>90%]

Personal protective equipment

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Splash protection: Material: butyl-rubber Minimum layer thickness: 0.3 mm Break through time: 60 min Material tested: Butoject (KCL 897 / Aldrich Z677647, Size M) data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection: Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection: Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Methyl isobutyl ketone cas#: (108-10-1) [<10%]

Personal protective equipment

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Splash contact Material: butyl-rubber Minimum layer thickness: 0.3 mm Break through time: 212 min Material tested: Butoject (KCL 897 / Aldrich Z677647, Size M) data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

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Methyl propyl ketone  cas#: (107-87-9) [>90%]

Components with workplace control parameters

<table>
<thead>
<tr>
<th></th>
<th>STEL</th>
<th>TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>150 ppm</td>
<td>200 ppm</td>
</tr>
<tr>
<td></td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 700 mg/m3 1910.1000</td>
</tr>
<tr>
<td></td>
<td>250 ppm</td>
<td>200 ppm</td>
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<tr>
<td></td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 875 mg/m3 1910.1000</td>
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<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants 700 mg/m3</td>
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<tr>
<td></td>
<td>150 ppm</td>
<td>USA. NIOSH Recommended Exposure Limits 530 mg/m3</td>
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Methyl isobutyl ketone  cas#: (108-10-1) [<10%]

Components with workplace control parameters

<table>
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<th>TWA</th>
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<td></td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
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<td>75 ppm</td>
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<td>USA. ACGIH Threshold Limit Values (TLV)</td>
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<td>50 ppm</td>
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<tr>
<td></td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 205 mg/m3 1910.1000</td>
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<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 300 mg/m3 1910.1000</td>
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<td></td>
<td>100 ppm</td>
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<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants 410 mg/m3</td>
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<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td>50 ppm</td>
</tr>
<tr>
<td></td>
<td>USA. NIOSH Recommended Exposure Limits 205 mg/m3</td>
</tr>
<tr>
<td></td>
<td>75 ppm</td>
</tr>
<tr>
<td></td>
<td>USA. NIOSH Recommended Exposure Limits 300 mg/m3</td>
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The value in mg/m3 is approximate.

PHYSICAL AND CHEMICAL PROPERTIES

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<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Appearance</td>
<td>Colorless.</td>
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<tr>
<td>Physical State</td>
<td>Liquid</td>
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<tr>
<td>Odor</td>
<td>Ketone</td>
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<tr>
<td>Odor Threshold</td>
<td>11 ppm</td>
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<tr>
<td>Solubility</td>
<td>Moderate</td>
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<tr>
<td>Spec Grav./Density</td>
<td>0.81 (20 ºC)</td>
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<tr>
<td>Viscosity</td>
<td>No data available</td>
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<tr>
<td>Boiling Point</td>
<td>101 ºC</td>
</tr>
<tr>
<td>Freezing/Melting Pt.</td>
<td>-78 ºC</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>log Pow: 0.857</td>
</tr>
</tbody>
</table>

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Vapor Pressure: 37 mbar (20 °C)
Vapor Density: No data available
pH: No data available
Evap. Rate: No data available
Auto-Ignition Temp: 450 °C
Decomp Temp: No data available
UFL/LFL: 8.7 %(%V) / 1.56 %(%V)

10 STABILITY AND REACTIVITY

Reactivity: No data available
Chemical Stability: Stable under recommended storage conditions. May form peroxides of unknown stability.
Conditions to Avoid: Heat, flames and sparks.
Materials to Avoid: Strong Oxidizing Agents.
Hazardous Decomposition: Carbon Dioxide Carbon oxides.

11 TOXICOLOGICAL INFORMATION

Methyl propyl ketone cas#: (107-87-9) [>90%]

Information on toxicological effects

Acute toxicity:
Oral LD50 LD50 Oral - rat - 1,600 mg/kg
Inhalation LC50 Dermal LD50 LD50 Dermal - rabbit - 6,500 mg/kg
Other information on acute toxicity no data available

Skin corrosion/irritation: Skin - rabbit - Open irritation test

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity - single exposure (Globally Harmonized System):
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (Globally Harmonized System):
no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be harmful if inhaled. Causes respiratory tract irritation. Ingestion Harmful if swallowed. Skin Harmful if absorbed through skin. Causes skin irritation. Eyes Causes eye irritation.

Signs and Symptoms of Exposure: Lowered blood pressure, Central nervous system depression, narcosis, Nausea, Dizziness, Headache, Exposure to and/or consumption of alcohol may increase toxic effects.

Synergistic effects: no data available

Additional Information:

SDS Number: R-049
Methyl isobutyl ketone  cas#: (108-10-1) [<10%]

Information on toxicological effects

Acute toxicity:
Oral LD50 LD50 Oral - rat - 2,080 mg/kg
Inhalation LC50 LC50 Inhalation - rat - 4 h - 8.2 - 16.4 mg/m3
Dermal LD50 LD50 Dermal - rabbit - > 16,000 mg/kg
Other information on acute toxicity no data available

Skin corrosion/irritation: Skin - rabbit - Mild skin irritation - 24 h

Serious eye damage/eye irritation: Eyes - rabbit - Moderate eye irritation - 24 h

Respiratory or skin sensitisation: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:
IARC: 2B - Group 2B: Possibly carcinogenic to humans (4-Methylpentan-2-one)
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: Developmental Toxicity - mouse - Inhalation:
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death.

Developmental Toxicity - mouse - Inhalation:
Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Cardiovascular (circulatory) system.

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System):
May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (Globally Harmonized System):
no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be harmful if inhaled. Causes respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. Causes skin irritation. Eyes Causes eye irritation.

Signs and Symptoms of Exposure: Blurred vision, Dermatitis, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects: no data available

Additional Information:

RTECS: SA9275000

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Methyl propyl ketone  cas#: (107-87-9) [>90%]

Information on ecological effects

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ECOLOGICAL INFORMATION

Methyl propyl ketone  cas#: (107-87-9) [>90%]

Information on ecological effects
Toxicity:
Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 1,240 mg/l - 96 h.

Persistence and degradability: no data available

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: no data available

Methyl isobutyl ketone cas#: (108-10-1) [<10%]

Information on ecological effects

Toxicity:
Toxicity to fish LC0 - Leuciscus idus melanotus - 480 mg/l - 48 h.
Toxicity to daphnia EC50 - Daphnia magna (Water flea) - 1,550 - 3,623 mg/l - 24 h.
and other aquatic invertebrates
Toxicity to algae EC50 - Desmodesmus subspicatus (green algae) - 980 - 2,000 mg/l - 48 h.

Persistence and degradability: Biodegradability Biotic/Aerobic

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: no data available

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13 **DISPOSAL CONSIDERATIONS**

Dispose of in accordance with local regulations.

14 **TRANSPORT INFORMATION**

UN1224, Ketones, liquid, n.o.s., 3, PGII, (methyl propyl ketone, methyl isobutyl ketone)

15 **REGULATORY INFORMATION**

Component (CAS#) [%] - CODES

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl propyl ketone (107-87-9)</td>
<td>&gt;90%</td>
<td>MASS, OSHAWAC, PA, TSCA, TXAIR</td>
</tr>
<tr>
<td>Methyl isobutyl ketone (108-10-1)</td>
<td>&lt;10%</td>
<td>CERCLA, HAP, MASS, NJHS, OSHAWAC, PA, SARA313, TOXICRCRA, TSCA, TXAIR, TXHWL</td>
</tr>
</tbody>
</table>

Regulatory CODE Descriptions

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASS</td>
<td>MA Massachusetts Hazardous Substances List</td>
</tr>
<tr>
<td>OSHAWAC</td>
<td>OSHA Workplace Air Contaminants</td>
</tr>
<tr>
<td>PA</td>
<td>PA Right-To-Know List of Hazardous Substances</td>
</tr>
<tr>
<td>TSCA</td>
<td>Toxic Substances Control Act</td>
</tr>
<tr>
<td>TXAIR</td>
<td>TX Air Contaminants with Health Effects Screening Level</td>
</tr>
<tr>
<td>CERCLA</td>
<td>Superfund clean up substance</td>
</tr>
</tbody>
</table>

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HAP = Hazardous Air Pollutants
NJHS = NJ Right-to-Know Hazardous Substances
SARASARA313 = SARA 313 Title III Toxic Chemicals
STOICOCRRA = RCRA Toxic Hazardous Wastes (U-List)
TXHWL = TX Hazardous Waste List

16 OTHER INFORMATION

NFPA:  Health = 2, Fire = 3, Reactivity = 1, Specific Hazard = n/a
HMIS III: Health = 2, Fire = 3, Physical Hazard = 1

Disclaimer:
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representations as to the accuracy or completeness of the information contained herein, and assume no responsibility
regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual
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