SAFETY DATA SHEET
THE DOW CHEMICAL COMPANY

Product name: Methyl Isobutyl Ketone

1. IDENTIFICATION

Recommended use of the chemical and restrictions on use

2. HAZARDS IDENTIFICATION

Hazard classification
GHS classification in accordance with 29 CFR 1910.1200
Flammable liquids - Category 2
Acute toxicity - Category 4 - Inhalation
Eye irritation - Category 2A
Specific target organ toxicity - single exposure - Category 3

Label elements
Hazard pictograms

Signal word: DANGER!
Hazards
Highly flammable liquid and vapour.
Causes serious eye irritation.
Harmful if inhaled.
May cause respiratory irritation.

Precautionary statements
Prevention
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/eye protection/face protection.

Response
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal
Dispose of contents/container to an approved waste disposal plant.

Other hazards
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: 4-methylpentan-2-one
This product is a substance.

<table>
<thead>
<tr>
<th>Component</th>
<th>CASRN</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl isobutyl ketone</td>
<td>108-10-1</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

Description of first aid measures

General advice:
First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin contact: Wash off with plenty of water.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist. Suitable emergency eye wash facility should be available in work area.

Ingestion: Do not induce vomiting. Call a physician and/or transport to emergency facility immediately.

Most important symptoms and effects, both acute and delayed:
Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. Because rapid absorption may occur through the lungs if aspirated and cause systemic effects, the decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Repeated excessive exposure may aggravate preexisting lung disease. Skin contact may aggravate preexisting dermatitis.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Unsuitable extinguishing media: Do not use direct water stream. Straight or direct water streams may not be effective to extinguish fire.

Special hazards arising from the substance or mixture
Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Electrically ground and bond all equipment. Flammable mixtures of this product are readily ignited even by static discharge. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Flammable mixtures may exist within the vapor space of containers at room temperature. Flammable concentrations of vapor can accumulate at temperatures above flash point; see Section 9.

Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water may not be effective in extinguishing fire. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Do not use direct water stream. May spread fire. Eliminate ignition sources. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Avoid accumulation of water. Product may be carried across water surface spreading fire or contacting an ignition source.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Keep personnel out of low areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard. Keep out of sewers. For large spills, warn public of downwind explosion hazard. Check area with combustible gas detector before reentering area. Ground and bond all containers and handling equipment. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Small spills: Absorb with materials such as: Sand. Vermiculite. Large spills: Contain spilled material if possible. Ground and bond all containers and handling equipment. Pump with explosion-proof equipment. If available, use foam to smother or suppress. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep away from heat, sparks and flame. Avoid contact with eyes. Avoid breathing vapor. Wash thoroughly after handling. Keep container closed. Use only with adequate ventilation. No smoking, open flames or sources of ignition in handling and storage area.
Ignition sources can include and are not limited to pilot lights, flames, smoking, sparks, heaters, electrical equipment, and static discharges. Electrically bond and ground all containers and equipment before transfer or use of material. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Never use air pressure for transferring product. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Minimize sources of ignition, such as static build-up, heat, spark or flame. Keep container closed. Flammable mixtures may exist within the vapor space of containers at room temperature. Avoid prolonged storage with exposure to air due to peroxide formation. Test every 12 months for the presence of peroxide.

8. EXPOSURE CONTROLS/PERSOAL PROTECTION

Control parameters
If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

<table>
<thead>
<tr>
<th>Component</th>
<th>Regulation</th>
<th>Type of listing</th>
<th>Value/Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl isobutyl ketone</td>
<td>ACGIH</td>
<td>TWA</td>
<td>20 ppm</td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>STEL</td>
<td>75 ppm</td>
</tr>
<tr>
<td></td>
<td>OSHA Z-1</td>
<td>TWA</td>
<td>410 mg/m3 100 ppm</td>
</tr>
</tbody>
</table>

Biological occupational exposure limits

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Biological specimen</th>
<th>Sampling time</th>
<th>Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl isobutyl ketone</td>
<td>108-10-1</td>
<td>methyl isobutyl ketone</td>
<td>Urine</td>
<td>End of shift (As soon as possible after exposure ceases)</td>
<td>1 mg/l</td>
<td>ACGIH BEI</td>
</tr>
</tbody>
</table>

Exposure controls

Engineering controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

Skin protection

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal
Protection, potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Wear clean, body-covering clothing.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

The following should be effective types of air-purifying respirators: Organic vapor cartridge.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Characteristic</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No test data available</td>
</tr>
<tr>
<td>pH</td>
<td>No test data available</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>-84 °C (-119 °F) Literature</td>
</tr>
<tr>
<td>Freezing point</td>
<td>-84 °C (-119 °F) Literature</td>
</tr>
<tr>
<td>Boiling point (760 mmHg)</td>
<td>116.1 °C (241.0 °F) Literature</td>
</tr>
<tr>
<td>Flash point</td>
<td>closed cup &gt;15 °C (59 °F) ASTM D 56</td>
</tr>
<tr>
<td>Evaporation Rate (Butyl Acetate = 1)</td>
<td>1.6 Literature</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>1.2 % vol Literature</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>8.0 % vol Literature</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>2.64 kPa at 25 °C (77 °F) Literature</td>
</tr>
<tr>
<td>Relative Vapor Density (air = 1)</td>
<td>3.5 Literature</td>
</tr>
<tr>
<td>Relative Density (water = 1)</td>
<td>0.801 at 20 °C (68 °F) / 20 °C Literature</td>
</tr>
<tr>
<td>Water solubility</td>
<td>14.1 g/L at 20 °C (68 °F) at 1 atm Literature</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>log Pow: 1.9 Calculated.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>448 - 460 °C (838 - 860 °F) Literature</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No test data available</td>
</tr>
<tr>
<td>Dynamic Viscosity</td>
<td>0.585 cP at 20 °C (68 °F) Literature</td>
</tr>
<tr>
<td>Kinematic Viscosity</td>
<td>0.73 mm2/s at 20 °C (68 °F) Literature</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>100.16 g/mol Calculated.</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>CH3COCH2CH(CH3)2</td>
</tr>
</tbody>
</table>
NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical stability: Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Avoid prolonged exposure to air to reduce formation of explosive peroxides. Exposure to elevated temperatures can cause product to decompose. Avoid static discharge.


Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity
Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

LD50, Rat, 2,080 mg/kg OECD 401 or equivalent

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

LD50, Rat, male and female, > 2,000 mg/kg OECD Test Guideline 402 No deaths occurred at this concentration.

Acute inhalation toxicity
Vapor concentrations are attainable which could be hazardous on single exposure. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

LC50, Rat, male, 4 Hour, vapour, 8.2 - 16.4 mg/l OECD Test Guideline 403

Skin corrosion/irritation
Prolonged contact may cause slight skin irritation with local redness. May cause drying and flaking of the skin.

Serious eye damage/eye irritation
May cause moderate eye irritation.  
May cause slight corneal injury.  
Vapor may cause eye irritation experienced as mild discomfort and redness.

**Sensitization**  
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:  
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**  
May cause respiratory irritation.  
Route of Exposure: Inhalation  
Target Organs: Respiratory system

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**  
Excessive exposure to methyl isobutyl ketone may cause respiratory irritation, gastrointestinal distress, anesthesia, kidney and liver effects.

**Carcinogenicity**  
Has caused cancer in some laboratory animals. However, the relevance of this to humans is unknown. Kidney effects and/or tumors have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans.

**Teratogenicity**  
Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

**Reproductive toxicity**  
In animal studies, did not interfere with reproduction.

**Mutagenicity**  
In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were negative.

**Aspiration Hazard**  
May be harmful if swallowed and enters airways.

### Carcinogenicity

<table>
<thead>
<tr>
<th>Component</th>
<th>List</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl isobutyl ketone</td>
<td>IARC</td>
<td>Group 2B: Possibly carcinogenic to humans</td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>A3: Confirmed animal carcinogen with unknown relevance to humans</td>
</tr>
</tbody>
</table>

## 12. ECOLOGICAL INFORMATION

*Ecotoxicological information appears in this section when such data is available.*

**Toxicity**  
Acute toxicity to fish
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50, Danio rerio (zebra fish), static test, 96 Hour, > 179 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**
EC50, Daphnia magna (Water flea), 48 Hour, > 200 mg/l, OECD Test Guideline 202 or Equivalent

**Acute toxicity to algae/aquatic plants**
EC50, Pseudokirchneriella subcapitata (green algae), static test, 96 Hour, Growth rate inhibition, 400 mg/l, OECD Test Guideline 201 or Equivalent

EC50, Lemna minor (duckweed), semi-static test, 7 d, Growth rate inhibition, > 146 mg/l, OECD 221.

**Chronic aquatic toxicity**

**Chronic toxicity to fish**
NOEC, Pimephales promelas (fathead minnow), 31 d, weight, 57 mg/l

LOEC, Pimephales promelas (fathead minnow), 31 d, weight, 105 mg/l

MATC (Maximum Acceptable Toxicant Level), Pimephales promelas (fathead minnow), 31 d, weight, 77.4 mg/l

NOEC, Pimephales promelas (fathead minnow), 31 d, weight, 57 mg/l

**Chronic toxicity to aquatic invertebrates**
NOEC, Daphnia magna (Water flea), 21 d, 30 mg/l

**Persistence and degradability**

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass

**Biodegradation:** 83 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301F or Equivalent

**Theoretical Oxygen Demand:** 2.72 mg/mg

**Photodegradation**

**Test Type:** Half-life (indirect photolysis)

**Sensitization:** OH radicals

**Atmospheric half-life:** 14.5 Hour

**Method:** Estimated.

**Bioaccumulative potential**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient:** n-octanol/water(log Pow): 1.9 Calculated.

**Mobility in soil**
Potential for mobility in soil is high (Koc between 50 and 150).

**Partition coefficient (Koc):** 101 Estimated.
13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

14. TRANSPORT INFORMATION

DOT

<table>
<thead>
<tr>
<th>Proper shipping name</th>
<th>Methyl isobutyl ketone</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>UN 1245</td>
</tr>
<tr>
<td>Class</td>
<td>3</td>
</tr>
<tr>
<td>Packing group</td>
<td>II</td>
</tr>
<tr>
<td>Reportable Quantity</td>
<td>Methyl isobutyl ketone</td>
</tr>
</tbody>
</table>

Classification for SEA transport (IMO-IMDG):

<table>
<thead>
<tr>
<th>Proper shipping name</th>
<th>METHYL ISOBUTYL KETONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>UN 1245</td>
</tr>
<tr>
<td>Class</td>
<td>3</td>
</tr>
<tr>
<td>Packing group</td>
<td>II</td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>No</td>
</tr>
<tr>
<td>Transport in bulk</td>
<td>Consult IMO regulations before transporting ocean bulk</td>
</tr>
</tbody>
</table>
| according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code

Classification for AIR transport (IATA/ICAO):

<table>
<thead>
<tr>
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<th>Methyl isobutyl ketone</th>
</tr>
</thead>
<tbody>
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<td>UN number</td>
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</tr>
<tr>
<td>Class</td>
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</tr>
<tr>
<td>Packing group</td>
<td>II</td>
</tr>
</tbody>
</table>

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.
15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Flammable (gases, aerosols, liquids, or solids)
Serious eye damage or eye irritation
Specific target organ toxicity (single or repeated exposure)
Acute toxicity (any route of exposure)

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
<thead>
<tr>
<th>Components</th>
<th>CASRN</th>
<th>RQ (RCRA Code)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl isobutyl ketone</td>
<td>108-10-1</td>
<td>5000 lbs RQ</td>
</tr>
<tr>
<td>Methyl isobutyl ketone</td>
<td>108-10-1</td>
<td>100 lbs RQ (F003)</td>
</tr>
</tbody>
</table>

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

<table>
<thead>
<tr>
<th>Components</th>
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</tr>
<tr>
<td>Methyl isobutyl ketone</td>
<td>108-10-1</td>
<td>100 lbs RQ (F003)</td>
</tr>
</tbody>
</table>

Pennsylvania Worker and Community Right-To-Know Act:
The following chemicals are listed because of the additional requirements of Pennsylvania law:

<table>
<thead>
<tr>
<th>Components</th>
<th>CASRN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl isobutyl ketone</td>
<td>108-10-1</td>
</tr>
</tbody>
</table>

California Prop. 65
WARNING: This product can expose you to chemicals including Methyl isobutyl ketone, which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

United States TSCA Inventory (TSCA)
All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Revision
Identification Number: 166512 / A001 / Issue Date: 06/08/2018 / Version: 11.1
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

<table>
<thead>
<tr>
<th>ACGIH</th>
<th>USA. ACGIH Threshold Limit Values (TLV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH BEI</td>
<td>ACGIH - Biological Exposure Indices (BEI)</td>
</tr>
</tbody>
</table>
Methyl Isobutyl Ketone

OSHA Z-1 | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
STEL | Short-term exposure limit
TWA | 8-hour, time-weighted average

Full text of other abbreviations
AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50% of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

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