SAFETY DATA SHEET

Eastman(TM) MIPK (Methyl Isopropyl Ketone)

SECTION 1. IDENTIFICATION

Product name : Eastman(TM) MIPK (Methyl Isopropyl Ketone)
Product code : 03107-00, P0310700, P0310702, E0310701, P0310705, E0310703, P0310706

Manufacturer or supplier's details
Company name of supplier : Eastman Chemical Company
Address : 200 South Wilcox Drive
           Kingsport TN 37660-5280
Telephone : (423) 229-2000
Emergency telephone : CHEMTREC: +1-800-424-9300, +1-703-527-3887 CCN7321

Recommended use of the chemical and restrictions on use
Recommended use : Solvent
Restrictions on use : None known.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200
Flammable liquids : Category 2
Acute toxicity (Inhalation) : Category 4
Specific target organ systemic toxicity - single exposure : Category 3 (Central nervous system)

GHS label elements
Hazard pictograms : [Flame, Exclamation]
Signal Word : Danger
Hazard Statements : H225 Highly flammable liquid and vapor.
                   H332 Harmful if inhaled.
                   H336 May cause drowsiness or dizziness.
Precautionary Statements : Prevention:
                           P210 Keep away from heat/sparks/open flames/hot surfaces.
No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ eye protection/ face protection.

Response:
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>methyl isopropyl ketone</td>
<td>563-80-4</td>
<td>100</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

If inhaled: Move to fresh air.
Treat symptomatically.
If symptoms persist, call a physician.

In case of skin contact: Wash off with soap and water.
If symptoms persist, call a physician.

In case of eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

If swallowed: Seek medical advice.
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Most important symptoms and effects, both acute and delayed: None known. Harmful if inhaled. May cause drowsiness or dizziness.

Notes to physician: Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Alcohol-resistant foam
Carbon dioxide (CO2)
Dry chemical
Water spray

Unsuitable extinguishing media: Water spray jet

Specific hazards during fire fighting: Water may be ineffective. The product will float on water and can be rekindled on surface water.

Hazardous combustion products: No hazardous combustion products are known

Further information: Use water spray to cool unopened containers.

Special protective equipment for fire-fighters: Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Wear appropriate personal protective equipment. Local authorities should be advised if significant spillages cannot be contained.

Environmental precautions: Avoid release to the environment.

Methods and materials for containment and cleaning up: Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). After cleaning, flush away traces with water. Eliminate all ignition sources if safe to do so.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion: None known.

Advice on safe handling: Avoid inhalation of vapor or mist. Do not swallow. Ensure adequate ventilation.
Wash thoroughly after handling.
Keep away from fire (No Smoking).
Keep away from fire, sparks and heated surfaces.
Do not use sparking tools.

Conditions for safe storage: Keep container closed when not in use.
Store locked up.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>methyl isopropyl ketone</td>
<td>563-80-4</td>
<td>TWA</td>
<td>20 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>200 ppm</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>705 mg/m&lt;sup&gt;3&lt;/sup&gt;</td>
<td>OSHA P0</td>
</tr>
</tbody>
</table>

Engineering measures: Good general ventilation (typically 10 air changes per hour) should be sufficient to control airborne levels. Ensure adequate ventilation.

Personal protective equipment

Respiratory protection: Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Hand protection

Remarks: Wear suitable gloves.

Eye protection: Safety glasses

Protective measures: Remove respiratory and skin/eye protection only after vapors have been cleared from the area. Ensure that eye flushing systems and safety showers are located close to the working place. Use personal protective equipment as required.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: liquid

Color: colorless
Odor: sweet, alcohol-like

Odor Threshold: not determined

pH: not determined

Melting point/freezing point: -137.9 °F / -94.4 °C

Boiling point/boiling range: 201.6 °F / 94.2 °C

Flash point: 36 °F / 2 °C

Method: Seta closed cup

Evaporation rate: not determined

Flammability (solid, gas): Not applicable

Self-ignition: 838 °F / 448 °C

Method: ASTM E659

Upper explosion limit / Upper flammability limit: 8.2 % (V)

Vapor pressure: 7,028 Pa (77 °F / 25 °C)

Relative vapor density: 3

Relative density: 0.8037 (68 °F / 20 °C)

Solubility (ies)

Water solubility: 42.25 - 66.09 g/l completely soluble (77 °F / 25 °C)

Partition coefficient: n-octanol/water: log Pow: 0.56 - 0.72 (77 °F / 25 °C)

Autoignition temperature: not determined

Decomposition temperature: Method: HPDTA

No exotherm to 400°C

Viscosity

Viscosity, dynamic: 0.454 mPa.s (77 °F / 25 °C)

Viscosity, kinematic: 0.565 mm²/s (77 °F / 25 °C)

Method: estimated

Explosive properties: Not classified

Oxidizing properties: Not classified

Surface tension: 24.3 mN/m, 72 °F / 22 °C
SECTION 10. STABILITY AND REACTIVITY

Reactivity : Stable

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Stable
Hazardous decomposition products formed under fire conditions.

Conditions to avoid : Heat, flames and sparks.

Incompatible materials : Oxidizing agents

Hazardous decomposition products : Carbon dioxide (CO2)
Carbon monoxide

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity
Harmful if inhaled.

Product:
Acute oral toxicity : Remarks: May be harmful if swallowed.
Acute inhalation toxicity : Remarks: Harmful if inhaled.
Acute dermal toxicity : Remarks: No data available

Components:
methyl isopropyl ketone:
Acute oral toxicity : LD50 Oral (Rat): 3,078 mg/kg
Remarks: May be harmful if swallowed.

Acute inhalation toxicity : LC50 (Rat): 6377 ppm
Exposure time: 6 h
Test atmosphere: dust/mist
Remarks: Harmful if inhaled.

Acute dermal toxicity :
Remarks: No significant adverse effects were reported

Skin corrosion/irritation
Not classified based on available information.

Product:
Remarks : No data available
Components:
methyl isopropyl ketone:
Species : Guinea pig
Exposure time : 4 h
Assessment : Not classified
Result : slight

Serious eye damage/eye irritation
Not classified based on available information.

Product:
Remarks : No data available

Components:
methyl isopropyl ketone:
Species : Rabbit
Result : slight
Exposure time : 24 h
Assessment : Not classified

Respiratory or skin sensitization

Skin sensitization
Not classified based on available information.

Respiratory sensitization
Not classified based on available information.

Product:
Remarks : No data available

Components:
methyl isopropyl ketone:
Test Type : Skin Sensitization
Species : Guinea pig
Result : non-sensitizing

Germ cell mutagenicity
Not classified based on available information.

Components:
methyl isopropyl ketone:
Genotoxicity in vitro : Test Type: Mutagenicity - Mammalian
Metabolic activation: +/- activation
Result: negative
Test Type: Mutagenicity - Bacterial
Metabolic activation: +/- activation
Result: negative

Carcinogenicity
Not classified based on available information.

Product:
Remarks: This information is not available.

IARC
No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA
No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

NTP
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity
Not classified based on available information.

Product:
Effects on fertility: Remarks: No data available

STOT-single exposure
May cause drowsiness or dizziness.

Product:
Remarks: No data available

STOT-repeated exposure
Not classified based on available information.

Product:
Remarks: No data available

Aspiration toxicity
Not classified based on available information.

Product:
No aspiration toxicity classification

Components:
methyl isopropyl ketone:
No aspiration toxicity classification
Information on likely routes of exposure

**Product:**
- **Inhalation:** Remarks: Harmful if inhaled.
- **Skin contact:** Remarks: None known.
- **Eye contact:** Remarks: None known.
- **Ingestion:** Remarks: None known.

**Components:**
- **methyl isopropyl ketone:**
  - **Ingestion:** Remarks: Harmful if swallowed.

Further information

**Product:**
- Remarks: None known.

**Components:**
- **methyl isopropyl ketone:**
  - Remarks: None known.

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**SECTION 12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Components:**
- **methyl isopropyl ketone:**
  - **Toxicity to fish:**
    - LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l
    - Exposure time: 96 h
  - **Toxicity to daphnia and other aquatic invertebrates:**
    - EC50 (Daphnia magna (Water flea)): > 100 mg/l
    - Exposure time: 48 h
  - **Toxicity to algae/aquatic plants:**
    - EC50 (Chlorella pyrenoidosa): 44.2 mg/l
    - NOEC: (Chlorella pyrenoidosa): 14.8 mg/l
    - Exposure time: 72 h

**Persistence and degradability**

**Components:**
- **methyl isopropyl ketone:**
  - Biodegradability: Result: Readily biodegradable.
Biodegradation: 85.1 %  
Exposure time: 28 d  
Method: Ready Biodegradability: Closed Bottle Test

Bioaccumulative potential
No data available

Mobility in soil

Components:
methyl isopropyl ketone:
Distribution among environmental compartments: log Koc: 0.848 - 1.8  
Method: QSAR model

Other adverse effects
No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues: Dispose of in accordance with local regulations.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR
UN/ID No.: UN 2397  
Proper shipping name: 3-Methylbutan-2-one  
Class: 3  
Packing group: II  
Labels: Flammable Liquids  
Packing instruction (cargo aircraft): 364  
Packing instruction (passenger aircraft): 353

IMDG-Code
UN number: UN 2397  
Proper shipping name: 3-METHYLBUTAN-2-ONE

Class: 3  
Packing group: II  
Labels: 3  
EmS Code: F-E, S-D  
Marine pollutant: no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Domestic regulation
SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity
This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity
This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards: Flammable (gases, aerosols, liquids, or solids)
Acute toxicity (any route of exposure)
Specific target organ toxicity (single or repeated exposure)

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

The ingredients of this product are reported in the following inventories:

DSL: All components of this product are on the Canadian DSL
AICS: On the inventory, or in compliance with the inventory
ENCS: On the inventory, or in compliance with the inventory
ISHL: On the inventory, or in compliance with the inventory
KECI: On the inventory, or in compliance with the inventory
PICCS: On the inventory, or in compliance with the inventory
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Version 2.1  SDS Number: 150000000196
PRD  SDSUS / Z8 / 0001  Date of last issue: -

IECSC  :  On the inventory, or in compliance with the inventory
TCSI  :  On the inventory, or in compliance with the inventory
TSCA  :  All substances listed as active on the TSCA inventory

TSCA list
No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:

HMIS® IV:

HEALTH / 2

FLAMMABILITY 3

PHYSICAL HAZARD 0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

ACGIH  :  USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL  :  USA. NIOSH Recommended Exposure Limits
OSHA P0  :  USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
ACGIH / TWA  :  8-hour, time-weighted average
NIOSH REL / TWA  :  Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
OSHA P0 / TWA  :  8-hour time weighted average

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
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