

**Safety Data Sheet**  
**acc. to OSHA HCS**

Printing date 10/12/2021

Reviewed on 10/12/2021

**1 Identification**

- **Product identifier**
- **Trade name:** MIBK
- **Product number:** M080100
- **CAS Number:**  
108-10-1
- **EC number:**  
203-550-1
- **Index number:**  
606-004-00-4
- **Application of the substance / the mixture** Solvents
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Kayaku Advanced Materials, Inc.  
200 Flanders Road  
Westborough, MA 01581  
Tel: (617) 965-5511  
Fax: (617) 965-5818
- **Information department:**  
Product Safety  
Email: [productsafety@kayakuAM.com](mailto:productsafety@kayakuAM.com)
- **Emergency telephone number:**  
Kayaku Advanced Materials : 617-965-5511  
Chemtrec USA Emergency : 800-424-9300  
Chemtrec International Emergency : 703-527-3887

**2 Hazard(s) identification**

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Eye Irrit. 2A H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

- **Label elements**

- **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS02



GHS07

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**Trade name: MIBK**

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· **Signal word** *Danger*

· **Hazard-determining components of labeling:**

*Methyl isobutyl ketone*

· **Hazard statements**

*H225 Highly flammable liquid and vapor.*

*H332 Harmful if inhaled.*

*H319 Causes serious eye irritation.*

*H335 May cause respiratory irritation.*

· **Precautionary statements**

*P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*

*P261 Avoid breathing dust/fume/gas/mist/vapors/spray*

*P280 Wear protective gloves/protective clothing/eye protection/face protection.*

*P301+P310 If swallowed: Immediately call a poison center/doctor.*

*P302+P352 If on skin: Wash with plenty of soap and water.*

*P304+P341 If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.*

*P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*

*P333+P313 If skin irritation or rash occurs: Get medical advice/attention.*

*P337+P313 If eye irritation persists: Get medical advice/attention.*

*P370+P378 In case of fire: Use to extinguish: Alcohol resistant foam, Fire-extinguishing powder, Carbon dioxide.*

*P403+P235 Store in a well-ventilated place. Keep cool.*

*P501 Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



*Health = 2*

*Fire = 3*

*Reactivity = 0*

· **HMIS-ratings (scale 0 - 4)**



*Health = 2*

*Fire = 3*

*Reactivity = 0*

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

*108-10-1 4-methylpentan-2-one*

· **Identification number(s)**

· **EC number:** 203-550-1

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**Trade name: MIBK**· **Index number:** 606-004-00-4

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**4 First-aid measures**

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:**  
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**  
Wash eyes immediately with a large amount of water or normal saline, occasionally lifting upper and lower eye lids until no evidence of chemical remains (about 20 minutes). Remove contact lenses if present and easy to remove. Seek immediate medical attention.
- **After swallowing:**  
Do not induce vomiting unless instructed to do so by a physician. Wash out mouth with water and keep person at rest. Seek immediate medical attention.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed** Treat symptomatically.

**5 Fire-fighting measures**

- **Extinguishing media**
- **Suitable extinguishing agents:**  
Alcohol resistant foam  
Fire-extinguishing powder  
Carbon dioxide
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Wear SCBA.

**6 Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation  
Keep away from ignition sources
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.  
Dispose contaminated material as waste according to Section 13.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

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### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
 Ensure good ventilation/exhaust at the workplace.  
 Store in cool, dry place in tightly closed containers.  
 Prevent formation of aerosols.
- **Information about protection against explosions and fires:**  
 Keep ignition sources away - Do not smoke.  
 Use explosion-proof apparatus / fittings and spark-proof tools.  
 Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and containers:** Store in a cool location.
- **Information about storage in one common storage facility:**  
 Do not store together with oxidizing and acidic materials.  
 Do not store together with alkalis (caustic solutions).
- **Further information about storage conditions:**  
 Keep container well-sealed in cool, dry location.  
 Store receptacle in a well ventilated area.  
 Store under lock and key and with access restricted to technical experts or their assistants only.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

 · **Components with limit values that require monitoring at the workplace:**

#### 108-10-1 Methyl isobutyl ketone

PEL	Long-term value: 410 mg/m <sup>3</sup> , 100 ppm
REL	Short-term value: 300 mg/m <sup>3</sup> , 75 ppm Long-term value: 205 mg/m <sup>3</sup> , 50 ppm
TLV	Short-term value: 307 mg/m <sup>3</sup> , 75 ppm Long-term value: 82 mg/m <sup>3</sup> , 20 ppm
BEI	

 · **Ingredients with biological limit values:**

#### 108-10-1 Methyl isobutyl ketone

BEI	1 mg/L Medium: urine Time: end of shift Parameter: MIBK
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- **Additional information:** The lists that were valid during the creation were used as basis.

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- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
 Keep away from food and beverages.  
 Immediately remove all soiled and contaminated clothing.  
 Wash hands before breaks and at the end of work.  
 Avoid contact with the eyes and skin.  
 Do not inhale gases / fumes / aerosols.
- **Respiratory equipment:**  
 In case of low exposure, use cartridge respirator. In case of intensive or longer exposure, use SCBA.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

- **Material of gloves** Nitrile rubber, NBR
- **Penetration time of glove material** Contact glove manufacture for break-through time.
- **Eye protection:**



Tightly sealed goggles

### 9 Physical and chemical properties

#### · Information on basic physical and chemical properties

##### · General Information

##### · Appearance:

Form:	Liquid
Color:	Colorless
Odor:	Characteristic
Odor threshold:	Not determined.

· **pH-value:** Not determined.

##### · Change in condition

Melting point/Melting range:	-83.5 °C (-118.3 °F)
Boiling point/Boiling range:	114 °C (237.2 °F)

· **Flash point:** 14 °C (57.2 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 460 °C (860 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

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- |   |                 |
|---|-----------------|
| <b>· Explosion limits:</b>  |                 |
| <b>Lower:</b>   | 1.7 Vol %       |
| <b>Upper:</b>   | 9 Vol %         |
| <b>· Vapor pressure at 20 °C (68 °F):</b> 8 hPa (6 mm Hg)                     |                 |
| <b>· Density at 20 °C (68 °F):</b> 0.8008 g/cm <sup>3</sup> (6.68268 lbs/gal) |                 |
| <b>· Relative density</b> Not determined.                                     |                 |
| <b>· Vapor density</b> Not determined.  |                 |
| <b>· Evaporation rate</b> 1.6 (BuAc=1)  |                 |
| <b>· Solubility in / Miscibility with Water at 20 °C (68 °F):</b> 19 g/l      |                 |
| <b>· Partition coefficient (n-octanol/water):</b> Not determined.             |                 |
| <b>· Viscosity:</b>   |                 |
| <b>Dynamic:</b>   | Not determined. |
| <b>Kinematic:</b>   | Not determined. |
| <b>Organic solvents:</b>  | 100.0 %         |
| <b>VOC content:</b>   | 100.0 %         |
| <b>· Other information</b> No further relevant information available.         |                 |

### 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability** Stable
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid**  
Heat, flames and sparks. Extremes of temperature and direct sunlight.  
Contact with incompatible materials.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** Carbon monoxide and carbon dioxide

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

 · **LD/LC50 values that are relevant for classification:**

#### 108-10-1 Methyl isobutyl ketone

Oral	LD50	2080 mg/kg (Rat)
Dermal	LD50	1600 mg/kg (rab)
Inhalative	LC50/4 h	100 mg/l (Rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.

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· **Additional toxicological information:**

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

108-10-1

· **NTP (National Toxicology Program)**

Substance is not listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

### 12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**

**108-10-1 Methyl isobutyl ketone**

EC50/96 hr	980 mg/l ( <i>scenedesmus subspicatus</i> )
	400 mg/l ( <i>Selenastrum capricornutum</i> )
LC50/24 h	5000 mg/l ( <i>daphnia magna</i> )
	460 mg/l (goldfish)
LC50/96 h	505 mg/l (fathead minnow)
	505-540 mg/l ( <i>Pimephales promelas</i> )
	600 mg/l ( <i>Salmo gairdneri</i> )

· **Persistence and degradability** No further relevant information available.

· **Behavior in environmental systems:**

· **Bioaccumulative potential** No further relevant information available.

· **Mobility in soil** No further relevant information available.

· **Additional ecological information:**

· **General notes:**

Water hazard class 1 (Assessment by list): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Other adverse effects** No further relevant information available.

### 13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

Must not be disposed of as regular garbage/trash. Do not allow product to reach sewage system.

Disposal must be made in accordance with Federal, State, and Local regulations.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made in accordance with Federal, State, and Local regulations.

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### 14 Transport information

· UN-Number	
· DOT, ADR, IMDG, IATA	UN1245
· UN proper shipping name	
· DOT, ADR, IMDG, IATA	METHYL ISOBUTYL KETONE
· Transport hazard class(es)	
· DOT	
	
· Class	3 Flammable liquids
· Label	3
· ADR, IMDG, IATA	
	
· Class	3 Flammable liquids
· Label	3
· Packing group	
· DOT, ADR, IMDG, IATA	II
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Warning: Flammable liquids
· Hazard identification number (Kemler code):	33
· EMS Number:	F-E,S-D
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	UN1245, METHYL ISOBUTYL KETONE, 3, II

### 15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture
· Sara
· Section 355 (extremely hazardous substances):
Substance is not listed.
· Section 313 (Specific toxic chemical listings):
Substance is listed.
· TSCA (Toxic Substances Control Act): All ingredients are listed or comply with TSCA regulations.

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**· Proposition 65**
**· Chemicals known to cause cancer:**

Substance is listed.

**· Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

**· Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

**· Chemicals known to cause developmental toxicity:**

Substance is not listed.

**· Carcinogenic categories**
**· EPA (Environmental Protection Agency)**

I

**· TLV (Threshold Limit Value)**

Substance is not listed.

**· NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

**· Massachusetts State Right To Know List**

108-10-1 Methyl isobutyl ketone

**· New Jersey State Right To Know List**

108-10-1 Methyl isobutyl ketone

**· Pennsylvania Hazardous Substances List**

108-10-1 Methyl isobutyl ketone

**· California SCAQMD Rule 443.1 VOC's: 800 g/l; vapor pressure 14.5 mm Hg @ 20C (68)F**
**· GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

**· Hazard pictograms**


GHS02 GHS07

**· Signal word Danger**
**· Hazard-determining components of labeling:**

Methyl isobutyl ketone

**· Hazard statements**

H225 Highly flammable liquid and vapor.

H332 Harmful if inhaled.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

**· Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P310 If swallowed: Immediately call a poison center/doctor.

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- P302+P352 *If on skin: Wash with plenty of soap and water.*
- P304+P341 *If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.*
- P305+P351+P338 *If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
- P333+P313 *If skin irritation or rash occurs: Get medical advice/attention.*
- P337+P313 *If eye irritation persists: Get medical advice/attention.*
- P370+P378 *In case of fire: Use to extinguish: Alcohol resistant foam, Fire-extinguishing powder, Carbon dioxide.*
- P403+P235 *Store in a well-ventilated place. Keep cool.*
- P501 *Dispose of contents/container in accordance with local/regional/national/international regulations.*
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

- **Department issuing SDS:** Product safety department
- **Contact:** Tom Cole, EHS Manager (tcole@kayakuAM.com)

· **Revision History:**

*The manufacturer's information in Section 1, the product hazard information in Section 2 and the component hazard information in Section 3 have been updated.*

- **Date of preparation / last revision** 10/12/2021 / 3

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Flam. Liq. 2: Flammable liquids – Category 2

Acute Tox. 4: Acute toxicity – Category 4

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3