SAFETY DATA SHEET

SAFETY DATA SHEET

SDS No. 1021-31262 Date: November 6, 2017

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Methyl isobutylketone (MIBK)
NAME OF SUPPLIER: GL Sciences Inc.
ADDRESS: 22-1 Nishishinjuku 6-chome Shinjuku-ku Tokyo 163-1130, Japan
CHARGE SECTION: International Sales Section
TELEPHONE No.: +81-3-5323-6620
FACSIMILE No.: +81-3-5323-6621
PRODUCT No.: 1021-31262
SDS No.: 1021-31262
Research use only.

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION:
- Flammable liquid: Category 2
- Acute toxicity - inhalation: Category 3
- Eye damage/irritation: Category 2B
- Carcinogenicity: Category 2

Specific target organ toxicity (Single exposure):
- Respiratory irritation, anesthesia: Category 3

Specific target organ toxicity (Repeated exposure):
- Central nervous system: Category 1

HAZARD SYMBOL:

SIGNAL WORD: Danger

HAZARD STATEMENTS:
- H225: High flammable liquid and vapour
- H331: Toxic if inhaled
- H320: Cause eye irritation
- H335: May cause respiratory irritation
- H336: May cause drowsiness or dizziness
- H372: Cause damage to organs through prolonged or repeated exposure

PRECAUTIONARY STATEMENTS:
- P202: Do not handle until all safety precautions have been read and understood.
- 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.
- P260: Do not breathing dust/fume/gas/mist/vapours/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.
- P303+P361+P353: IF ON SKIN or hair: Take off immediately all contaminated clothing. Rinse skin with water.
- P370+P378: In case of fire: Use appropriate medias to extinguish.
- P308+P313: IF exposed or concerned: Get medical attention.
- P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P314: Get medical attention if you feel unwell.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337+P313: If eye irritation persists: Get medical attention.
PRODUCT NAME: Methyl isobutylketone (MIBK)

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3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL IDENTITY: Methyl isobutylketone (MIBK)
SYNONYMS: 4-methyl-2-pentanone; MIBK; Hexone
CONTENT: > 99%
CHEMICAL FORMULA: (CH₃)₂CHCH₂COCH₃
MOLECULAR WEIGHT: 100.16
CAS No.: 108-10-1
TSCA INVENTORY: Listed
EINECS No.: 203-550-1
EC INDEX No.: 606-04-00-4

4. FIRST AID MEASURES

GENERAL ADVICE: Consult a physician. Show this safety data sheet to the doctor in attendance.
INHALATION: Move victim to fresh air. If breathing is difficult, give oxygen. If irritation persists, consult a physician.
SKIN CONTACT: Remove contaminated clothes and shoes, rinse skin with plenty of water or shower. Use soap to help assure removal. Consult a physician immediately.
EYE CONTACT: Flush eyes well with flooding large amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If possible, remove any contact lenses. Consult a physician immediately.
INGESTION: Rinse mouth, give plenty of water to dilute the substance. Do not induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician immediately.

MOST IMPORTANT SYMPTOMS AND EFFECTS: No data available

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
FIRE & EXPLOSION HAZARDS: Toxic, irritating, dust/fume/smoke may be emitted. Carbon monoxide may be foamed.
SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: Firemen should wear normal protective equipment(full bunker gear) and positive-pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Remove ignition sources and ventilate the area. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid raising dust and avoid contact with skin and eyes.
ENVIRONMENTAL PRECAUTIONS: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
METHODS FOR CLEAN UP: Do not touch spilled material without suitable protection. Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

HANDLING: Keep away from ignition sources and ventilate the area — No smoking. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with eyes, skin, and clothing. Avoid inhalation of vapour or mist. Avoid prolonged or repeated exposure. Handle this product with suitable protection. Wear protections when cutting ample and treating this product.

STORAGE: Store away from sunlight, heat and all ignition sources in well-ventilated dry place. Keep container tightly closed. Keep cool(2 ~ 10°C).
INCOMPATIBLE PRODUCTS: Strong oxidizers, acids
8. EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING MEASURES: Use exhaust ventilation to keep airborne concentrations below exposure limits. Use adequate ventilation.

VENTILATION: Local Exhaust; Necessary, Mechanical(General); Necessary

CONTROL PARAMETERS

ACGIH: 50 ppm
OSHA: 100 ppm
NIOSH: 50 ppm

PERSONAL PROTECTION

Respiratory protection: Use respirators approved under appropriate government standards and follow all regulations.

HAND PROTECTION: Chemical resistant gloves

EYE PROTECTION: Safety glasses(goggles)

SKIN PROTECTION: Protective clothing

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless, clear liquid
ODOR: Sweet odor
pH: No data available
BOILING POINT: approx. 117 ~ 118 °C
MELTING POINT: -84.7 °C
FLASH POINT: 14 °C (TCC)
EXPLOSIVE LIMITS: 1.4 ~ 7.5 vol %
VAPOR PRESSURE: 2.1 kPa (at 20°C)
VAPOR DENSITY: 3.5
SPECIFIC GRAVITY: 0.801 g/cm³ (at 20/4°C)
SOLUBILITY IN
  Water: Miscible
  Organic solvent: Miscible
PARTITION COEFFICIENT; n-octanol/water: log Pow: 1.31
AUTOIGNITION TEMPERATURE: 460 °C
DECOMPOSITION TEMPERATURE: No data available

10. STABILITY AND REACTIVITY

REACTIVITY: Highly flammable liquid, may form the explosive peroxide by contacting to air. React with strong oxidizers and strong reducing agents. React with aldehyde and oxidizers.

CHEMICAL STABILITY: No data available

CONDITION TO AVOID: Sunlight, heat, open flames, high temperature, sparks, static electrical charge, other ignition sources, moisture

INCOMPATIBLE MATERIALS: Oxidizers and strong acids

HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO₂
PRODUCT NAME : Methyl isobutylketone (MIBK)

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY : Inhalation; rat LC50=8.2 ~ 16.4 g/m³ (1,968 ~ 3,936 ppm) (NTP Tr538,2007 etc.)

SKIN CORROSION/IRRITATION : Rabbit/marmot; mild irritation (SIDS,2011 etc.)

EYE DAMAGE/EYE IRRITATION : Rabbit; irritating (SIDS,2011 etc.)

SENSITIZATION : No data available

GERM CELL MUTAGENICITY : Lack of data

CARCINOGENICITY : No data available

REPRODUCTIVE TOXICITY : No data available

SPECIFIC TARGET ORGAN TOXICITY - single exposure -

: This material has a respiratory irritation. Effect to human (cough, headache, sore throat, dizziness, nausea, central nervous system inhibition, vomiting, diarrhea, weakness feeling, loss of appetite and consciousness) (ACGIH(7th,2010) etc.)

SPECIFIC TARGET ORGAN TOXICITY - repeated exposure -

: Effect to human (irritating to eye, nose and throat. Central nervous system symptoms and digestive symptoms) (ACGIH(7th,2010)).

ASPIRATION HAZARD : No data available

12. ECOLOGICAL INFORMATION

ECOTOXICITY : Artemia salina; LC50=1,250 mg/L,24h (SIDS,2011)

Pimephales promelas ; LC50=505 mg/L,96h (ECETOC TR91,2003)

BIODEGRADABILITY : BOD=84 %, TOC=97.1 %, GC=100 % (Ministry of Economy report, 1975)

BIOACCUMULATIVE POTENTIAL : No data available

MOBILITY IN SOIL : No data available

OTHER ADVERSE EFFECTS : Not listed in Montreal Protocol list.

13. DISPOSAL INFORMATION

Dispose in a hazardous-waste site in accordance with all applicable regulations. Any disposal practice must be in compliance with country, local, state, and federal laws and regulations (contact country, local or state environment agency for specific rules).

14. TRANSPORT INFORMATION

IATA

UN NUMBER : 1245

UN PROPER SHIPPING NAME : Methyl isobutylketone (MIBK)

CLASS : 3, flammable liquid

PACKING GROUP : II

ADR/RID : 1245, Methyl isobutylketone (MIBK), II

DOT : 1245, Methyl isobutylketone (MIBK), II

MARINE POLLUTANT : No

15. REGULATORY INFORMATION

US REGULATIONS : Labeling according to EC Directives; See section 2

EU REGULATIONS : Labeling according to EC Directives; See section 2

16. OTHER INFORMATION

NOTICE:

The information contained in the SDS description is applicable exclusively to the chemical substance identified herein and for its intended use as an analytical reference standard or reagent and to the unit quantity intended for that purpose. The information does not relate to, and may not be appropriate for, any application or larger quantity of the substance described. Our products are intended for the use by individuals possessing sufficient technical skill and qualification on use the material potential hazardous chemical. Accordingly, no representation or warranty, express or implied, with respect to merchantability and fitness for a particular purpose is made with respect to the information contained herein.

Attention:

This product in terms of chemical identity and the unit amount provide is intended for use in chemical analysis and not for human consumption, nor any other purpose.