Safety Data Sheet · OSHA HCS 2024

Methyl Isobutyl Ketone (MIBK) Technical Grade

Technical Grade

Standard	Revised	Emergency
OSHA HCS 2024 · GHS Rev. 7	2026-11-12	Chemtel 1-800-255-3924 (24/7)

1 Identification

Product Identifier	Methyl Isobutyl Ketone (MIBK) Technical Grade
Grade	Technical Grade
CAS Number	108-10-1
Chemical Formula	C6H12O
Molecular Weight	100.16 g/mol
Manufacturer	Alliance Chemical 204 South Edmond Street, Taylor, TX 76574
Emergency Phone	Chemtel 1-800-255-3924 (24/7)
Synonyms	4-Methyl-2-pentanone; isobutyl methyl ketone; hexone; MIBK
Recommended Use	Solvent for coatings, lacquers, inks, adhesives and resins; extraction solvent (metallurgy, dewaxing); chemical intermediate.
Restrictions on Use	For industrial and laboratory use. Suspected of causing cancer: obtain special instructions and avoid exposure. Highly flammable: keep away from ignition sources.

2 Hazard Identification



Flammable



Irritant / harmful



Health hazard

Classification	Flammable liquids, Category 2 Serious eye damage/eye irritation, Category 2A Acute toxicity (inhalation), Category 4 Specific target organ toxicity, single exposure, Category 3 (respiratory tract irritation) Carcinogenicity, Category 2
Signal Word	**Danger**
Hazard Statements	EUH066 Repeated exposure may cause skin dryness or cracking H225 Highly flammable liquid and vapor H319 Causes serious eye irritation H332 Harmful if inhaled H335 May cause respiratory irritation H351 Suspected of causing cancer

Precautionary Statements

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 Keep container tightly closed.

P240 Ground and bond container and receiving equipment.

P241 Use explosion-proof electrical, ventilating, and lighting equipment.

P242 Use non-sparking tools.

P243 Take precautionary measures against static discharge.

P260 Do not breathe dust, fume, gas, mist, vapors or spray.

P261 Avoid breathing dust, fume, gas, mist, vapors or spray.

P264 Wash hands and face thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

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

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P304+P340 IF INHALED: 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.

P308+P313 IF exposed or concerned: Get medical advice or attention.

P312 Call a POISON CENTER or doctor if you feel unwell.

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

P370+P378 In case of fire: Use alcohol-resistant foam, CO2 or dry chemical powder to extinguish.

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.

P501 Dispose of contents and container in accordance with local, regional, national, and international regulations.

Classification, hazard (H) and precautionary (P) statements and pictograms per OSHA HCS 2024 (29 CFR 1910.1200, Appendices A–C), aligned with GHS Rev. 7.

3 Composition / Information on Ingredients

Component	CAS No.	Formula	Concentration
Methyl Isobutyl Ketone (MIBK)	108-10-1	$C_6H_{12}O$	99-100% (w/w)

Concentrations are nominal; lot-specific values appear on the Certificate of Analysis. Components not contributing to classification are omitted.

4 First-Aid Measures

Eyes

Rinse with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention immediately.

Skin

Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing. Wash with soap. Get medical attention immediately.

Inhalation

Move person to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.

Ingestion	Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.
Most Important Symptoms and Effects	Eye contact causes irritation: redness, pain and tearing. Repeated exposure may cause skin dryness or cracking. Inhalation may irritate the nose, throat and respiratory tract (coughing, sore throat). Inhalation may cause coughing, shortness of breath and headache; high concentrations may cause systemic poisoning.
Immediate Medical Attention and Special Treatment	Treat symptomatically. Get medical attention if symptoms develop or persist.

5 Fire-Fighting Measures

Suitable Extinguishing Media	Alcohol-resistant foam, CO2, dry chemical powder. Water spray may be used to cool fire-exposed containers.
Unsuitable Extinguishing Media	Do not use a solid water stream — may scatter and spread fire.
Specific Hazards Arising from the Chemical	Vapors are heavier than air and may form explosive mixtures with air; they can travel to a source of ignition and flash back. Containers may rupture when heated.
Protective Equipment	Wear self-contained breathing apparatus and full protective clothing.
Hazardous Combustion Products	Carbon monoxide and carbon dioxide on combustion.

6 Accidental Release Measures

Personal Precautions	Use PPE as described in Section 8. Ensure adequate ventilation. Evacuate personnel to safe areas.
Hazard-Specific Precautions	Eliminate all ignition sources. Use non-sparking tools and explosion-proof equipment; ground and bond containers during cleanup.
Environmental Precautions	Prevent leakage or spillage from entering drains, sewers, or waterways.
Containment & Cleanup	Absorb with inert material. Collect in appropriate waste container. Dispose per applicable regulations.

7 Handling and Storage

Safe Handling	Use with adequate ventilation. Avoid contact with skin, eyes, and clothing. Wash thoroughly after handling. Keep container closed when not in use.
Safe Storage	Store in a cool, dry, well-ventilated area away from heat, sparks, and open flame. Keep away from incompatible materials (see Section 10). Keep containers tightly closed. Ground and bond containers when transferring material.
Specific Storage Precautions	Keep tightly closed in a cool, well-ventilated flammables area out of sunlight, away from ignition sources and oxidizers. Store locked up. Ground and bond containers.

8 Exposure Controls / Personal Protection

Occupational Exposure Limits

Limit	Value
OSHA PEL	100 ppm TWA
ACGIH TLV	20 ppm TWA; 75 ppm STEL (A3: confirmed animal carcinogen with unknown relevance to humans)
NIOSH REL	50 ppm TWA / 75 ppm STEL
IDLH	500 ppm

Engineering Controls	Use adequate ventilation. Provide eyewash stations and quick-drench showers accessible to areas of use.
Eye/Face Protection	Wear chemical safety goggles or face shield.
Skin Protection	Wear chemical-resistant gloves and protective clothing.
Respiratory Protection	Use a NIOSH-approved respirator with organic vapor cartridges. For confined spaces or exposures above the OEL, use supplied-air respiratory protection.

Exposure limits sourced from NIOSH Pocket Guide, OSHA 29 CFR 1910.1000 and ACGIH TLVs.

9 Physical & Chemical Properties

Appearance	Clear, colorless liquid
Odor	Sweet, camphor-like
Odor Threshold	No data available
pH	No data available
Melting Point / Freezing Point	-84 °C (-119 °F)
Boiling Point	114–117 °C (237–243 °F)
Flash Point	14–17 °C (57–63 °F), closed cup
Evaporation Rate	1.6 (n-butyl acetate = 1)
Flammability (solid, gas)	No data available
Upper/Lower Flammability or Explosive Limits	LEL 1.2% / UEL 8.0% (v/v in air)
Vapor Pressure	15–16 mmHg (20–21.5 hPa) at 20 °C
Vapor Density	3.45 (air = 1)
Relative Density	0.799–0.803 at 20 °C (water = 1)
Solubility	Slightly soluble in water (17–20 g/L at 20 °C); miscible with alcohols, ethers and most organic solvents
Partition Coefficient (n-octanol/water)	log Kow 1.3
Auto-ignition Temperature	448–460 °C (838–860 °F)
Decomposition Temperature	No data available
Viscosity	0.6 mPa·s at 20 °C
Particle Characteristics	Not applicable
Form	Liquid
Density	0.802 at 68 °F (USCG, 1999) - Less dense than water; will float

Values shown reflect product-specific canonical data. Lot-specific ranges may vary; see the Certificate of Analysis for the shipped lot.

10 Stability and Reactivity

Reactivity	Not reactive under normal conditions of use and storage.
Chemical Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing conditions.
Conditions to Avoid	Heat, sparks, open flame, static discharge and direct sunlight. On long storage in contact with air it may form explosive peroxides — do not distill or evaporate to dryness without testing.
Incompatible Materials	Strong oxidizing agents; strong reducing agents; strong bases.
Hazardous Decomposition Products	Carbon monoxide and carbon dioxide on combustion.

11 Toxicological Information

See below for route-specific acute toxicity data.

Likely Routes of Exposure	Inhalation, skin contact, eye contact, ingestion.
Symptoms	Eye contact causes irritation: redness, pain and tearing. Repeated exposure may cause skin dryness or cracking. Inhalation may irritate the nose, throat and respiratory tract (coughing, sore throat). Inhalation may cause coughing, shortness of breath and headache; high concentrations may cause systemic poisoning.
Delayed and Chronic Effects	Carcinogenicity: may cause or is suspected of causing cancer after long-term exposure (see the carcinogen classification below). Repeated skin contact may cause dermatitis (dry, cracked skin).

Route	Value
LD50 Oral (rat)	2,080 mg/kg (rat)
LD50 Dermal (rabbit)	> 3,000 mg/kg
LC50 Inhalation (rat, 4h)	8.2–16.4 mg/L (2,000–4,000 ppm), vapor

Carcinogen Classification

Agency	Status
IARC	Group 2B — possibly carcinogenic to humans (Methyl isobutyl ketone; IARC agent: Methyl isobutyl ketone, Vol. 101).
NTP	Not listed as carcinogen.
OSHA	No substance-specific standard in 29 CFR 1910 Subpart Z; classified as a carcinogen under the Hazard Communication Standard (29 CFR 1910.1200). See Section 2.

12 Ecological Information

Ecotoxicity	Algae ErC50: 400 mg/L (96 h, Selenastrum capricornutum); Fish LC50: 505 mg/L (96 h, Pimephales promelas)

Persistence & Degradability	Not persistent; volatilizes (air half-life ~30 d) — Readily biodegradable (84% ThBOD, MITI)
Bioaccumulative Potential	log Kow 1.31, BCF 3 (estimated; low)
Mobility in Soil	High soil mobility (estimated Koc 70)

13 Disposal Considerations

Dispose of contents/container in accordance with applicable federal, state, and local regulations. Do not dispose of into drains or waterways.

EPA RCRA Waste Codes	U161 when discarded unused; F003 as a spent solvent; D001 (ignitable).

If discarded, this material may be an ignitable hazardous waste (EPA RCRA D001, 40 CFR 261.21(a)(1): flash point below 60 °C; aqueous solutions with less than 24% alcohol by volume are excluded). The waste generator must make the final hazardous-waste determination.

14 Transport Information

US DOT (49 CFR)

UN Number	UN1245
Proper Shipping Name	Methyl isobutyl ketone
Hazard Class	3
Packing Group	II
Additional US DOT Requirements	Inner packagings of 1 L or less may ship as Limited Quantity (49 CFR 173.150(b)). Not a marine pollutant.

IMDG / IATA classifications may differ from US DOT. Verify current regulations before international shipment.

15 Regulatory Information

Inventory / List	Status
California Proposition 65	Listed (since 2011-11-04)
US EPA TSCA Active Inventory	Listed
EPCRA SARA 313 (TRI)	Listed
CERCLA Reportable Quantity (RQ)	Methyl isobutyl ketone (CAS 108-10-1) 5,000 lb (2,270 kg), about 750 US gal; no single Alliance package reaches it (largest: 55-gal drum). Clean Air Act hazardous air pollutant.

SARA 311/312 hazard categories correspond to the GHS classification in Section 2. Data retrieved as of: California Proposition 65 2026-11-02; US EPA TSCA Active Inventory 2026-11-02; EPCRA SARA 313 (TRI) 2026-11-02.

16 Other Information

Revision Date	2026-11-12
Format	16-section format per OSHA HCS 2024 (29 CFR 1910.1200, Appendix D), aligned with GHS Rev. 7.

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