METHYL AMYL KETONE (MAK) **9640-LIQUID**

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Name: Methyl Amyl Ketone (MAK)

SDS Code: 9640-Liquid

Related Part # 9640-945ML, 9640-3.78L

Recommended Use and Restriction on Use

Use: Solvent

Uses Advised Against: Not applicable

Details of Manufacturer or Importer

Manufacturer
MG Chemicals
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E-MAIL info@mgchemicals.com

E-MAIL (Competent Person): sds@mgchemicals.com

Emergency Phone Number

For hazardous material incidents ONLY (leaks, spills, fires, exposures or accidents)
USA or CANADA—Call Verisk 3E at ***+1-866-519-4752*** or ***+1-760-476-3962***
(Service access code: 335388)

For emergencies involving the transport of dangerous goods; 24/7 service
CANADA—Call CANUTEC collect at ***+1-613-996-6666*** or ****666*** on cellular phones

Section 2: Hazard(s) Identification

Classification of Hazardous Chemical

GHS Categories

Criteria		Category	Signal Word	Pictograms
Flammable Liquid		3	Warning	Flame
Acute Toxicity	Oral	4	Warning	Exclamation
Acute Toxicity	Inhalation	4	Warning	Exclamation

Note: The degree of severity is ranked within each hazard class from 1 (Highest Severity) to up to 5 (Lowest Severity). Severity categories rankings do not allow comparisons between classes.

Label Elements

Signal Word	**WARNING**
Pictograms	**Hazard Statements**
	H226: Flammable liquid and vapor
	H302: Harmful if swallowed H332: Harmful if inhaled
Prevention	**Precautionary Statements**
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof equipment.
P243	Take action to prevent static discharges.
P261	Avoid breathing mist/vapors/spray.
P270	Do not eat, drink or smoke when using this product.

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Prevention	Precautionary Statements
P271	Use only outdoors or in well-ventilated area.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing.
Response	**Precautionary Statements**
P370 + P378	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P301 + P312, P330	IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell. Rinse mouth.
P304 + P340, P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE/doctor if you feel unwell.
Storage	**Precautionary Statements**
P403 + P235	Store in well-ventilated place. Keep cool.
Disposal	**Precautionary Statements**
P501	Dispose of contents/container in accordance to local/regional/international regulations.

Hazards Not Otherwise Classified

Other Criteria	Hazard Statements/Precautionary Statement	Signal Word	Pictograms
Defats skin	Repeated exposure may cause skin dryness or cracking.	None	None

Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)
110-43-0	heptan-2-one [a)]	100%

a) Also known as methyl amyl ketone (MAK)

Section 4: First-Aid Measures

Exposure Condition	*GHS Code: Precautionary Statement*
IF ON SKIN (or hair)	P303 + P361 + P353
Immediate Symptoms	*dry skin, redness*
Response	Take off immediately all contaminated clothing. Rinse skin with water or shower.
IF INHALED	P304 + P340, P312
Immediate Symptoms	*cough, dizziness, drowsiness, headache, unconsciousness, irritation to the respiratory tract*
Response	Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing. Call a POISON CENTRE/doctor if you feel unwell.
IF SWALLOWED	P301 + P312, P330
Immediate Symptoms	*not available*
Response	Call a POISON CENTRE/doctor if you feel unwell. Rinse mouth.
IF IN EYES	P305 + P351 + P338, P337 + P313
Immediate Symptoms	*redness*
Response	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Section 5: Fire-Fighting Measures

Extinguishing Media	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish. Use water spray to cool containers.
Specific Hazards	The vapors are heavier than air and may accumulate in low-lying areas. Vapors may travel long distances and ignite at an ignition source, which can cause a flashback or an explosion.
Combustion Products	Produces carbon oxides (CO, CO_2).
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

Section 6: Accidental Release Measures

Personal Protection	See personal protection equipment in Section 8.
Precautions for Response	Avoid breathing the mist/vapors/spray. Remove or keep away all sources of ignition or extreme heat. Prevent spill from entering drains.
Environmental Precautions	Not available
Containment Methods	Contain with inert absorbent (such as soil, sand, vermiculite).
Cleaning Methods	Collect the liquid in a sealable, chemical-resistant container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Use soap and water to remove the last traces of residue. **RECOMMENDATION:** Use a grounded stainless steel or carbon steel container.
Disposal Methods	Dispose of spill waste according to Section 13.

Section 7: Handling and Storage

Prevention	Keep out of reach of children. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Ground and bond container and receiving equipment. Take action to prevent static discharges. Use explosion-proof equipment. Avoid breathing mist/vapors/spray. Use only outdoors or in a well-ventilated area.
Handling	Wear protective gloves/protective clothing. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.
Storage	Keep container tightly closed. Store in a well-ventilated area. Keep cool.

Section 8: Exposure Controls/Personal Protection

Substances with Occupational Exposure Limit Values

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
heptan-2-one *methyl amyl ketone*	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	50 ppm 100 ppm 50 ppm 50 ppm 25 ppm 50 ppm	Not established Not established Not established Not established Not established Not established

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH[1], OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from by RTECS[2] database and data from suppliers' SDS were also consulted. Short term exposure limits (STEL) are for 15 min and long term permissible exposure limits (PEL) for 8 h.

Engineering Controls

Ventilation Keep airborne concentrations below the occupational exposure limits (OEL).

Personal Protective Equipment

Eye protection Wear appropriate protective eyeglasses or chemical safety goggles.

RECOMMENDATION: Use safety glasses with lateral protection (side shields).

Skin Protection For likely contacts, use of protective polyvinyl alcohol (PVA), or other chemically resistant gloves.

For incidental contacts, use polyvinyl alcohol (PVA), neoprene, or other chemically resistant gloves.

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Respiratory Protection	For over-exposures up to 10 x OEL of mist/vapors/spray, wear respirator such as a half-mask respirator with organic vapor cartridges. Above 10 x OEL, use a positive-pressure, air-supplied respirator or a self-contained breathing apparatus. **RECOMMENDATION:** Consult your local safety supply store to ensure that your respirator has a NIOSH (U.S.) approved filter cartridges appropriate for the ingredients listed in Section 3. The respirator should be fitted to the employee by a professional. Ensure vapor cartridges are stored in sealed plastic bags when not being used.

General Hygiene Considerations

Wash hands thoroughly with water and soap after handling.

Section 9: Physical and Chemical Properties

Physical State	Liquid	**Lower Flammability Limit**	1.1%
Appearance	Colorless	**Upper Flammability Limit**	7.9%
Odor	Sweet	**Vapor Pressure @20 °C**	2.8 hPa [2.1 mmHg]
Odor Threshold	0.2 ppm	**Vapor Density**	3.9 (Air = 1)
pH	Not available	**Specific Gravity @20 °C**	0.81
Freezing/Melting Point	-36 °C [-32.8 °F]	**Solubility in Water**	Slightly soluble
Boiling Point	152 °C [306 °F]	**Partition Coefficient**	1.98
Flash Point a)	39 °C [102 °F]	**Auto-ignition Temperature**	393 °C [739 °F]
Evaporation Rate	0.34 (ButAc = 1)	**Decomposition Temperature**	Not available
Flammability (solid, gas)	Not available	**Viscosity @40 °C**	<20.5 mm^2/s

a) Tag Closed cup value

Section 10: Stability and Reactivity

Reactivity	None known
Chemical Stability	Chemically stable at normal temperatures and pressures.
Conditions to Avoid	Avoid flames, sparks, other ignition sources and incompatible substances.
Incompatibilities	Strong oxidizing agents
Polymerization	Will not occur
Decomposition	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.

Section 11: Toxicological Information

Summary of Effects and Symptoms by Routes of Exposure

Eyes	May cause redness.
Skin	May cause dry skin and redness.
Inhalation	May cause cough, dizziness, drowsiness, headache, unconsciousness, blurred vision, and irritation to the respiratory tract.
Ingestion	Harmful if swallowed.
Chronic	Prolonged or repeated exposure may cause skin dryness, cracking, as well as defatting the skin.

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
heptan-2-one	1 670 mg/kg Rat	12 600 μL/kg Rabbit	>16.7 mg/kg 4 h Rat (vapor)

Note: Toxicity data from the RTECS[2] and ECHA were consulted. The data from supplier SDS were also consulted.

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Other Toxicological Effects

Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Sensitization (allergic reactions)	Based on available data, the classification criteria are not met.
Carcinogenicity (risk of cancer)	Based on available data, the classification criteria are not met.
Mutagenicity (risk of heritable genetic effects)	Based on available data, the classification criteria are not met.
Reproductive Toxicity (risk to sex functions)	Based on available data, the classification criteria are not met.
Teratogenicity (risk of fetus malformation)	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met. For severe overexposures, heptan-2-one can affect the central nervous system by inhalation causing drowsiness or dizziness. Extreme overexposures could cause lost of consciousness.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

Section 12: Ecological Information

Ecological classifications are based on the IMDG/GHS criteria in conjunction with ecotoxicological data from our suppliers, the European Chemical Agency database (http://echa.europa.eu), and other reliable sources.

Heptan-2-one does not meet classification criteria for aquatic environmental toxicants with LC50 and EC50 of >100 mg/L.

- Heptan-2-one has a minimal LC50 96 h of 126 mg/L for Pimephales promelas (fathead minnow).

Acute Ecotoxicity

Available toxicity data does not meet classification thresholds.

Chronic Ecotoxicity

Available toxicity data does not meet classification thresholds.

Biodegradability

Not available.

Other Effects

Volatile Organic Content (VOC) = 100% [810 g/L]

Section 13: Disposal Information

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

Section 14: Transport Information

Ground

Refer to TDG regulations (Canadian Transportation of Dangerous Goods regulations); **USA DOT 49 CFR** (Parts 100 to 185) **Regulations**.

Sizes 5 L and under	Sizes greater than 5 L
Limited Quantity 	**UN number**: UN1110 **Shipping Name:** n-AMYL METHYL KETONE **Class:** 3 **Packing Group**: III **Marine Pollutant:** No 

Air

Refer to ICAO-IATA Dangerous Goods Regulations.

	Sizes up to 60 L (passenger), 220 L (cargo)
	UN number: UN1110 **Shipping Name:** n-AMYL METHYL KETONE **Class:** 3 **Packing Group**: III Marine Pollutant: No 

Sea

Refer to IMDG regulations.

Sizes 5 L and under	Sizes greater than 5 L
Limited Quantity 	**UN number**: UN1110 Shipping Name: n-AMYL METHYL KETONE **Class**: 3 **Packing Group**: III Marine Pollutant: No 

Note: **Shipper must be appropriately <u>trained and certified</u> before involvement with the transport of dangerous goods.**

Section 15: Regulatory Information

Canada

Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)

All hazardous ingredients are listed on the DSL.

Hazardous Products Act (R.S.C., 1985, c. H-3)

The safety data sheet and label comply with the Hazardous Product Act and WHMIS 2015.

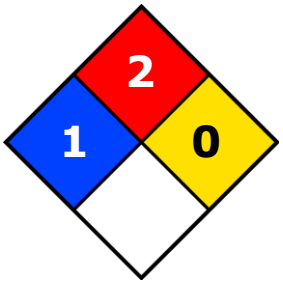
USA

Other Classifications

HMIS® RATING

HEALTH:	* 1
FLAMMABILITY:	2
PHYSICAL HAZARD:	0
PERSONAL PROTECTION:	

NFPA® 704 CODES



Approximate HMIS and NFPA Risk Ratings Legend:
0 (Low or none); 1 (Slight); 2 (Moderate); 3 (Serious); 4 (Severe)

CAA (Clean Air Act, USA)

This product does not contain any class 1 ozone depleting substances.

This product does not contain any class 2 ozone depleting substances.

This product does not contain substances that are listed as hazardous air pollutants.

EPCRA (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45)

This product does not contain ingredients that subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

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TSCA (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

California Proposition 65 (Chemicals known to cause cancer or reproductive toxicity, USA).

This product does not contain any substances known to be listed in California.

Europe

RoHS (Restriction of Hazardous Substances Directive)

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, PBDE's, DEHP, BBP, DBP, or DIBP and complies with European RoHS regulations.

WEEE (Waste Electrical and Electronic Equipment Directive)

This product is not a piece of electrical or electronics equipment, and is therefore not governed by this regulation.

Section 16: Other Information

SDS Prepared by	MG Chemical's Regulatory Department
Date of Revision	12 March 2020
Supersedes	01 June 2016
Reason for Changes:	Update to the emergency phone number information.

Reference

1) ACGIH 2017 TLVs and BEIs: Based on the documentation of the threshold limit values for chemical substances and physical agents & biological exposure indices, American Conference of Governmental of Industrial Hygienist Cincinnati, OH (2017).

2) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

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Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists (USA)
ECHA	European Chemicals Agency
EU	European Union
EC50	Half maximal effective concentration
EL50	Half maximal effective loading
IARC	International Agency for Research on Cancer
NOELR	No observable effect loading ratio
NTP	National Toxicology Program
GHS	Globally Harmonized System of Classification of Labeling of Chemicals
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
OEL	Occupational Exposure Limit
PEL	Permissible Exposure Limit
SDS	Safety Data Sheet
STEL	Short-Term Exposure Limit
TCLo	Lowest published toxic concentration
TWA	Time Weighted Average
VOC	Volatile Organic Content

Technical Queries Contact us regarding any questions, improvement suggestions, or problems with this product. Application notes, instructions, and FAQs are located at www.mgchemicals.com.

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