

Methyl Ethyl Ketone

SDS Preparation Date (mm/dd/yyyy): 09/09/2015

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Refer to supplier

SECTION 1. IDENTIFICATION

Product identifier used on the label

: Methyl Ethyl Ketone

Product Code(s) : None assigned.

Recommended use of the chemical and restrictions on use

: Industrial solvent.

Use pattern: Professional use only Recommended restrictions: None known.

Chemical family : Pure substance

Name, address, and telephone number

Name, address, and telephone number of of the supplier: the manufacturer:

Comet Chemical Company Ltd.

3463 Thomas Street

Innisfill, ON, Canada

L9S 3W4

Supplier's Telephone # : 705-436-5580

24 Hr. Emergency Tel # : TERRRAPURE ENVIRONMENTAL: 800-567-7455

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Clear colourless liquid. Sweet odour.

Most important hazards: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:

Flammable Liquids - Category 2 Eye Damage/Irritation - Category 2A

Specific Target Organ Toxicity, Single Exposure -Category 3 (respiratory) Specific Target Organ Toxicity, Single Exposure - Category 3 narcotic effects

Label elements

Hazard pictogram(s)





Signal Word

DANGER!

Hazard statement(s)

Highly flammable liquid and vapour Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.



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Precautionary statement(s)

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

Keep container tightly closed.

Ground/Bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Wash hands thoroughly after handling.

Avoid breathing mist or vapours.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/clothing and eye/face protection.

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

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

If eye irritation persists: get medical advice/attention.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER or doctor/physician if you feel unwell.

In case of fire: Use water fog, dry chemical, CO2 or 'alcohol' foam for extinction.

Store locked up.

Store in a well-ventilated place. Keep cool.

Keep container tightly closed.

Dispose of contents/container in accordance with local regulation.

Other hazards

Other hazards May be sensitive to static discharge. Take measures to prevent the build up of electrostatic charge.

Other hazards which do not result in classification: :

Burning produces obnoxious and toxic fumes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be an aspiration hazard. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal. May cause mild skin irritation.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance

<u>Chemical name</u>	Common name and synonyms	CAS#	Concentration
Methyl ethyl ketone	Butanone Methyl acetone	78-93-3	100.00

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

Ingestion : Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an

unconscious person. Get medical attention if symptoms persist. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration.

Inhalation : If inhaled: Remove person to fresh air and keep comfortable for breathing. If breathing

has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Call a POISON CENTRE or doctor/physician if you feel

unwell.

Skin contact : Immediately flush with plenty of water, while removing contaminated

clothing.Immediately call a POISON CENTER or doctor/physician. Wash contaminated

clothing before reuse.

Eye contact : For eye contact, flush with running water for at least 15 minutes. If eye irritation

persists: get medical advice/attention.



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Most important symptoms and effects, both acute and delayed

:

May cause respiratory irritation. May cause coughing and breathing difficulties. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Aspiration hazard. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal. May cause eye irritation. Symptoms may include redness, pain, tearing and conjunctivitis. May cause central nervous system effects. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. May cause skin irritation. Symptoms may include redness, itching and swelling.

Indication of any immediate medical attention and special treatment needed

: Treat symptomatically. Aspiration hazard. This product is a CNS depressant.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

: Carbon dioxide (CO2); Dry chemical; Alcohol resistant foam; Water fog. .

Unsuitable extinguishing media

: Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

: Highly flammable liquid and vapour Vapours may ignite explosively. Vapours are heavier than air and may spread along floors. Static discharge, impact, friction, and heat may ignite exposed chemical material. Empty containers may contain hazardous residues.

Flammability classification (OSHA 29 CFR 1910.106)

: Flammable Liquids - Category 2

Hazardous combustion products

: Carbon dioxide and carbon monoxide. Hydrogen peroxide; Aldehydes.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Special fire-fighting procedures

Do not breathe fumes or vapours. Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Keep people away from and upwind of spill/leak. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Environmental precautions

Do not allow material to contaminate ground water system. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.

Methods and material for containment and cleaning up

: Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Use only non-sparking tools and equipment in the clean-up process. Avoid breathing mist or vapours. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13).Contact the proper local authorities. Refer to Section 13 for disposal of contaminated material.



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Special spill response procedures

Contact appropriate local and provincial environmental authorities for assistance and/or reporting requirements. EPA/CERCLA Reportable quantity (RQ): ketone:(5000 lbs / 2270 kg)

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: Wear protective gloves/clothing and eye/face protection. Use only in well-ventilated areas. Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Keep container tightly closed. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Keep away from flames and hot surfaces. - No smoking. Use only non-sparking tools. Take precautionary measures against static discharges. Ground all equipment during handling.

Conditions for safe storage

Keep container tightly closed. Store in cool/well-ventilated place. Store locked up. Keep cool. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking. Empty containers may contain hazardous residues. After prolonged storage, may release explosive peroxides in the presence of air. Direct sunlight or heat may accelerate the release of peroxides.

Incompatible materials

Halogens.; Acids; Strong oxidizers (e.g. Chlorine, Peroxides, etc.).

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:					
Chemical Name	ACGIF	I TLV	OSHA PEL		
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	STEL	
Methyl ethyl ketone	200 ppm	300 ppm	200 ppm (590 mg/m³)	N/Av	

Exposure controls

Ventilation and engineering measures

: Use only in well-ventilated areas. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. Use explosion-proof equipment. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection

If airbourne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Advice should be sought from respiratory protection specialists.

Skin protection

Wear protective gloves/clothing. Where extensive exposure to product is possible, use resistant coveralls, apron and boots to prevent contact. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye / face protection

Wear eye/face protection. Wear as appropriate: Tightly fitting safety goggles

Other protective equipment

Ensure that eyewash stations and safety showers are close to the workstation location.

General hygiene considerations

Other equipment may be required depending on workplace standards.

: Do not breathe mist or vapor. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Do not take contaminated clothing home. Handle in accordance with good industrial hygiene and safety practice.



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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Clear colourless liquid.

Odour : Sweet odour.

Odour threshold : 2-85 ppm
pH : Not available.

Melting/Freezing point : -86.64°C (-123.95°F)

Initial boiling point and boiling range

: 79.59°C (175.26°F)

Flash point : -4°C (24.8°F)
Flashpoint (Method) : Cleveland closed cup

Evaporation rate (BuAe = 1) : 2.7

Flammability (solid, gas) : Not applicable.

Lower flammable limit (% by vol.)

1.8%

Upper flammable limit (% by vol.)

: 10%

Oxidizing properties : None known.

Explosive properties: May form explosive peroxides.

Vapour pressure : $78 (20^{\circ}\text{C} / 68^{\circ}\text{F})$

Vapour density : 2.5

Relative density / Specific gravity

: 0.81

Solubility in water : Soluble 19 grams per litre (20°C / 68°F)

Other solubility(ies) : Soluble in most organic solvents.

Partition coefficient: n-octanol/water or Coefficient of water/oil distribution

: Not available.

Auto-ignition temperature : 404°C (759°F)

Decomposition temperature: No information available.

Viscosity : Not available.

Volatiles (% by weight) : Not available.

Volatile organic Compounds (VOC's)

No information available.

Absolute pressure of container

: Not applicable.

Flame projection length : Not applicable.

Other physical/chemical comments

: Molecular Weight: 72.11

SECTION 10. STABILITY AND REACTIVITY

Reactivity: Not normally reactive.

Chemical stability : Stable under normal conditions. After prolonged storage, may release explosive

peroxides in the presence of air. Direct sunlight or heat may accelerate the release of

peroxides.

Possibility of hazardous reactions

Hazardous polymerization does not occur.

Conditions to avoid : Open flames, sparks, high heat, direct sunlight, and close proximity to incompatible

substances. Do not use in areas without adequate ventilation.

Incompatible materials : Halogens. ;Acids ;Strong oxidizers (e.g. Chlorine, Peroxides, etc.).

Hazardous decomposition products

: None known, refer to hazardous combustion products in Section 5.

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SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES
Routes of entry skin & eye : YES
Routes of entry Ingestion : YES

Routes of exposure skin absorption

: YES

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

May cause respiratory tract irritation. Coughing, difficulty breathing, and tightness in chest. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Sign and symptoms ingestion

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Aspiration hazard. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.

Sign and symptoms skin

: May cause mild skin irritation. Symptoms may include redness, itching and swelling.

Sign and symptoms eyes

Causes serious eye irritation. Symptoms may include redness, pain, tearing and

conjunctivitis.

Potential Chronic Health Effects

: May cause damage to the central nervous system through prolonged or repeated exposure if inhaled. Frequent or prolonged contact may dry the skin, leading to

discomfort and dermatitis.

Mutagenicity : Not expected to be mutagenic in humans.

Carcinogenicity : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

Not expected to cause reproductive effects.

Sensitization to material Specific target organ effects : Not expected to be a skin or respiratory sensitizer.

: This material is classified as hazardous under U.S. OSHA regulations (29CFR

1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products

Regulations) (WHMIS 2015). Classification:

Specific Target Organ Toxicity, Single Exposure - Category 3 narcotic effects Specific Target Organ Toxicity, Single Exposure -Category 3 (respiratory) May cause respiratory irritation. May cause drowsiness or dizziness.

Medical conditions aggravated by overexposure

Pre-existing skin, eye, respiratory and central nervous system disorders.

Synergistic materials : No information available.

Toxicological data : See below for toxicological data on the substance.

	LCso(4hr)	LDs	ı	
Chemical name	inh, rat	(Oral, rat)	(Rabbit, dermal)	
Methyl ethyl ketone	11 300 ppm (33.3 mg/L (vapour)	2740 mg/kg	6480 mg/kg	

Other important toxicological hazards

: None reported by the manufacturer.



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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Do not allow material to contaminate ground water system. See the following tables for the substance's ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	040 N	Toxicity to Fish				
	CAS No	LC50 / 96h	NOEC / 21 day	M Factor		
Methyl ethyl ketone	78-93-3	2993 mg/L (Fathead minnow)	N/Av	None.		

<u>Ingredients</u>	CAS No	Toxicity to Daphnia				
		EC50 / 48h	NOEC / 21 day	M Factor		
Methyl ethyl ketone	78-93-3	308 mg/L (Daphnia magna)	N/Av	None.		

<u>Ingredients</u>	CAS No	Toxicity to Algae				
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor		
Methyl ethyl ketone	78-93-3	1972 mg/L/72hr (Green algae)	1240 mg/L/96hr	None.		

Persistence and degradability

: Readily biodegradable

Bioaccumulation potential : No information available.

<u>Components</u>	Partition coefficent n-octanol/ater (log Kow)	Bioconcentration factor (BCF)
Methyl ethyl ketone (CAS 78-93-3)	0.29	3

Mobility in soil : The product itself has not been tested.

Other Adverse Environmental effects

: None known.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

: Handle in accordance with good industrial hygiene and safety practice. Refer to

protective measures listed in sections 7 and 8.

Methods of Disposal : Dispose in accordance with all applicable federal, state, provincial and local

regulations.

RCRA : If this product, as supplied, becomes a waste in the United States, it may meet the

criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and

federal environmental agencies.



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Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label	
TDG	UN1193	METHYL ETHYL KETONE	3	II	3	
TDG Additional information	None.	!	!		•	
49CFR/DOT	UN1193	ETHYL METHYL KETONE; or METHYL ETHYL KETONE	3	II	3	
49CFR/DOT Additional information	US CERCLA Re	portable quantity (RQ): (5000 lbs / 2270 kg)			•	
ICAO/IATA	UN1193	Methyl ethyl ketone	3	II	3	
ICAO/IATA Additional information	Refer to ICAO/IA	TA Packing Instruction	!		•	
IMDG	UN1193	ETHYL METHYL KETONE; or METHYL ETHYL KETONE	3	II	3	
IMDG Additional information	Maybe shipped a	as a limited quantity, check the IMDG regulations for detail	ls.		▼	

Special precautions for user

: Appropriate advice on safety must accompany the package. Keep away from heat,

sparks and open flame. - No smoking.

Environmental hazards

See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: This information is not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	TSCA		CERCLA Reportable	SARA TITLE III: Sec. 302, Extremely	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical		
	CAS#	CAS # Inventory	Quantity(RQ) (40 CFR 117.302):	Hazardous Substance, 40 CFR 355:	Toxic Chemical	de minimus Concentration	
Methyl ethyl ketone	78-93-3	Yes	5000 lb/ 2270 kg	None.	No	N/Ap	

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Fire Hazard; Immediate (Acute) health hazardUnder SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

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US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

Ingredients CAS#	CAS#	California Proposition 65		State "Right to Know" Lists					
	2.10 "	Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Methyl ethyl ketone	78-93-3	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes

Canadian Information:

Canadian Environmental Protection Act (CEPA): . All ingredients are present on the DSL.

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS#	European EINECs	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Methyl ethyl ketone	78-93-3	201-159-0	Present	Present	(2)-542	KE-24094	Present	HSR001190

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists

AICS: Australian Inventory of Chemical Substances

ATE: Acute Toxicity Estimate

CA: California

CAS: Chemical Abstract Services

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act

of 1980

CFR: Code of Federal Regulations CSA: Canadian Standards Association DOT: Department of Transportation ECHA: European Chemicals Agency

ECOTOX: U.S. EPA Ecotoxicology Database

EINECS: European Inventory of Existing Commercial chemical Substances

ENCS: Existing and New Chemical Substances EPA: Environmental Protection Agency HSDB: Hazardous Substances Data Bank

IARC: International Agency for Research on Cancer

IBC: Intermediate Bulk Container

IECSC: Inventory of Existing Chemical Substances IMDG: International Maritime Dangerous Goods

IOC: Inventory of Chemicals

IUCLID: International Uniform Chemical Information Database

KECI: Korean Existing Chemicals Inventory KECL: Korean Existing Chemicals List

LC: Lethal Concentration LD: Lethal Dose

MA: Massachusetts
MN: Minnesota
N/Ap: Not Applicable
N/Av: Not Available

NIOSH: National Institute of Occupational Safety and Health



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NJ: New Jersey

NOEC: No observable effect concentration

NTP: National Toxicology Program

OECD: Organisation for Economic Co-operation and Development

OSHA: Occupational Safety and Health Administration

PA: Pennsylvania

PEL: Permissible exposure limit

PICCS: Philippine Inventory of Chemicals and Chemical Substances

RCRA: Resource Conservation and Recovery Act

RI: Rhode Island

RTECS: Registry of Toxic Effects of Chemical Substances SARA: Superfund Amendments and Reauthorization Act SDS: Safety Data Sheet / Material Safety Data Sheet

STEL: Short Term Exposure Limit

TDG: Canadian Transportation of Dangerous Goods Act & Regulations

TLV: Threshold Limit Values TSCA: Toxic Substance Control Act TWA: Time Weighted Average

WHMIS: Workplace Hazardous Materials Identification System

1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents &

Biological Exposure Indices for 2015.

2. International Agency for Research on Cancer Monographs, searched 2015.

3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2015

(Chempendium, HSDB and RTECs).

4. Material Safety Data Sheets from manufacturer.

5. US EPA Title III List of Lists 2015 version

6. California Proposition 65 List June 2015

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Other special considerations for handling

: Provide adequate information, instruction and training for operators.

Prepared for:

References

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Information (M-F 8:00-5:00): 705-436-5580

www.cometchemical.com

COMET CHEMICAL COMPANY LTD.

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