Safety Data Sheet
METHYL ETHYL KETONE

SECTION 1: Identification

1.1 GHS Product identifier

Product name	Methyl Ethyl Ketone
Brand	Caseway
Substance name	METHYL ETHYL KETONE
EC no.	201-159-0
CAS no.	78-93-3
Index no.	606-002-00-3

1.2 Other means of identification

SDS Number: CIP-033
UN/ID No: UN1193

1.3 Recommended use of the chemical and restrictions on use

All proper and legal purposes

1.4 Supplier's details

Name	Caseway Industrial Products, Inc.
Address	3487 Highland Drive Bay City MI 48706 United States
Telephone	19893919992
Fax	19893919994
email	support@casewayproducts.com

1.5 Emergency phone number

INFOTRAC (Contract: 106140)
North America: 1-800-535-5053
International: 1-352-323-3500

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

GHS classification in accordance with: OSHA (29 CFR 1910.1200)

- Eye damage/irritation, Cat. 2A
- Specific target organ toxicity (single exposure), Cat. 3
- Flammable liquids, Cat. 2
- Toxic to reproduction, Cat. 2

2.2 GHS label elements, including precautionary statements

Pictogram

Signal word **Danger**

Hazard statement(s)

H225	Highly flammable liquid and vapor
H319	Causes serious eye irritation

H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H361	Suspected of damaging fertility or the unborn child

Precautionary Statement(s) - Prevention

P201	Obtain special instructions before use.
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.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash hands, face, and any exposed skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary Statement(s) - Response

P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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/attention.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.

Fire

P370+P378	In case of fire: Use water fog, foam, carbon dioxide (CO2), dry chemical powder to extinguish.

Storage

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/container in accordance with local, regional, national, and international regulations.

2.3 Other hazards which do not result in classification

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

Statement regarding ingredients of unknown toxicity

100% of the substance consists of component(s) of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name	CAS No.	EC No.	Index No.	Concentration (weight)
METHYL ETHYL KETONE	78-93-3	201-159-0	606-002-00-3	100 %

Formula	C4H8O
Molecular weight	72.11
Other names / synonyms	2-Butanone; MEK; Butanone; METHYL ETHYL KETONE

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice	Take off contaminated clothing immediately. If exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice/attention. Show the safety data sheet and/or label to the doctor in attendance. Make sure all medical personnel are aware of the materials involved and take precautionary measures to protect themselves. Wash contaminated clothing before reuse.
If inhaled	Immediately leave the contaminated area; take deep breaths of fresh air. If symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician, and be prepared to transport the victim to a hospital.
In case of skin contact	Immediately flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water. If symptoms such as redness or irritation develop, immediately call a physician, and be prepared to transport the victim to a hospital for treatment.
In case of eye contact	Immediately flush victim's eyes with water for at least 15 minutes. Remove contact lenses if present and easy to do. Continue rinsing. IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.
If swallowed	DO NOT INDUCE VOMITING. Rinse mouth. Immediately call a hospital or poison control center. Immediately transport the victim to a hospital. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING.
Personal protective equipment for first-aid responders	Wear proper protective equipment. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to that advised under Respirator Recommendation.

4.2 Most important symptoms/effects, acute and delayed

Eye Contact: May cause severe eye irritation, redness, stinging, swelling, tearing, blurred vision.

Skin Contact: May cause itching, swelling, redness, numbness, or tingling.

Inhalation: May cause respiratory irritation. Symptoms may include irregular breathing, coughing, wheezing, chest discomfort, drowsiness, dizziness, headache, nausea, vomiting.

Ingestion: May cause mouth irritation, throat irritation, abdominal discomfort, upset stomach, nausea, vomiting.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Provide general supportive measures. Treat symptomatically.

Thermal Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to the affected area. Call an ambulance. Continue flushing during transportation to the hospital. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media
Water fog. Foam. Carbon dioxide (CO2). Dry chemical powder.
Sand or earth may be used for small fires.

Unsuitable Extinguishing Media: Do not use water jet as an extinguisher, as this will spread the fire.

5.2 Specific hazards arising from the chemical
Vapors may form explosive mixtures with air. Vapors may travel considerable distances to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid can accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed.

5.3 Special protective actions for fire-fighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire. In case of fire and/or explosion do not breathe fumes. Move containers away from the fire area if you can do so without risk. Use standard firefighting procedures and consider the hazards of other materials involved.

Further information
First Aid: Section 4.
Protective Equipment: Section 8.
Physical/Chemical Properties: Section 9.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment, and emergency procedures
Keep unnecessary personnel away. Keep people away from upwind of spill/leak. Eliminate all sources of ignition (no smoking, flares, sparks, or flames in the immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Transfer by mechanical means such as vacuum truck to salvage tank or other suitable container for recovery or safe disposal. Local authorities should be advised if significant spillages cannot be contained.

6.2 Environmental precautions
Avoid discharge into drains, water courses, or onto the ground. Use appropriate containment to avoid environmental contamination.

6.3 Methods and materials for containment and cleaning up
If you spill this chemical, FIRST REMOVE ALL SOURCES OF IGNITION. Use personal protective equipment. Take precautionary measures against static discharge.

Small Spills: Absorb with earth, sand, or other non-combustible material and transfer to containers for later disposal. Wipe up absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand, or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Never return spills to original container for reuse.

Reference to other sections
Personal Protection: Section 8.
Waste Disposal: Section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Obtain special instructions before use. Do not handle until safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Minimize fire risks from flammable and combustible materials Including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists and sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharges. All equipment used when handling this product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist/vapors. Avoid contact with eyes. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

7.2 Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks, and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a cool, dry place out of direct sunlight. Store in a tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

1. 2-Butanone (Methyl ethyl ketone) (CAS: 78-93-3)
PEL-TWA (Inhalation): 200 ppm (590 mg/m3) (OSHA)

REL-TWA (Inhalation): 200 ppm (500 mg/m3) (NIOSH)
REL-STEL (Inhalation): 300 ppm (885 mg/m3) (NIOSH)
IDLH (Inhalation): 3000 ppm (NIOSH)

TLV®-TWA (Inhalation): 200 ppm [1992] (ACGIH)
TLV®-STEL (Inhalation): 300 ppm [1992] (ACGIH)

PEL-TWA (Inhalation): 200 ppm (590 mg/m3) (Cal/OSHA)
PEL-STEL (Inhalation): 300 ppm (885 mg/m3) (Cal/OSHA)

8.2 Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases, or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear antistatic protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots, and gloves. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection
Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Thermal hazards
Wear thermal protective clothing when necessary.

Environmental exposure controls
Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters, or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Liquid
Appearance	Colorless, liquid.
Color	CLEAR
Odor	KETONE
Odor threshold	No data available.
pH	No data available.
Melting point/freezing point	-123 °F (-86.11 °C)
Boiling point or initial boiling point and boiling range	175.26 °F (79.59 °C)
Flash point	21.0 °F (-6.1 °C)
Evaporation rate	No data available.
Flammability	Flammable liquid
Lower and upper explosion limit/flammability limit	No data available.
Vapor pressure	No data available.
Relative vapor density	2.41
Density and/or relative density	6.71 lbs/gal
Solubility	280 g/l (water)
Partition coefficient n-octanol/water (log value)	0.29
Auto-ignition temperature	759.2 °F (404 °C)
Decomposition temperature	No data available.
Kinematic viscosity	0.513 mm2/s
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

Particle characteristics
Molecular Formula: C4-H8-O
Molecular Weight: 72.11 g/mol

Supplemental information regarding physical hazard classes
Flammability Class: IB

Further safety characteristics (supplemental)
Dynamic Viscosity: 0.41 mPa.s (68 °F (20 °C))
Density: 0.80 g/ml
Specific Gravity: 0.8
Surface Tension: 24.6 mN/m (68 °F (20 °C))
Heat of combustion (NFPA 30B): 30.6 kJ/g

SECTION 10: Stability and reactivity

10.1 Reactivity
The product is stable and non-reactive under normal conditions of use, storage, and transport.

10.2 Chemical stability
Material is stable under normal conditions.

10.3 Possibility of hazardous reactions
Hazardous polymerization does not occur.

10.4 Conditions to avoid
Avoid heat, sparks, open flames, and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.

10.5 Incompatible materials
Strong oxidizing agents. Amines. Ammonia. Caustics. Isocyanates.

10.6 Hazardous decomposition products
No hazardous decomposition products are known.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
LD50 Dermal (Rabbit): >8,000 mg/kg
LD50 Oral (Rat): 2300 - 3500 mg/kg

Skin corrosion/irritation
Due to impartial or complete lack of data the classification is not possible.

Serious eye damage/irritation
Causes serious eye irritation.

Respiratory or skin sensitization
Due to impartial or complete lack of data the classification is not possible.

Germ cell mutagenicity
Due to impartial or complete lack of data the classification is not possible.

Carcinogenicity
Due to impartial or complete lack of data the classification is not possible.
IARC Monographs. Overall Evaluation of Carcinogenicity: Not listed.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053): Not listed.
US. National Toxicology Program (NTP) Report on Carcinogens: Not listed.

Reproductive toxicity
Suspected of damaging fertility or the unborn child.

STOT-single exposure
May cause respiratory irritation. May cause drowsiness or dizziness.

STOT-repeated exposure
Due to impartial or complete lack of data the classification is not possible.

Aspiration hazard
Due to impartial or complete lack of data the classification is not possible.

Information on likely routes of exposure
Inhalation: May cause drowsiness, dizziness, headache, nausea, vomiting, irritation to the respiratory system.
Skin Contact: No adverse effects due to skin contact are expected.
Eye Contact: Causes serious eye irritation. Pain or irritation. Tearing, redness.
Ingestion: Expected to be a low ingestion hazard.

SECTION 12: Ecological information

Toxicity
The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability
No data is available on the degradability of this product.

Bioaccumulative potential
Partition coefficient n-octanol/water (log Kow): 0.29

Mobility in soil
No data available.

Endocrine disrupting properties
No data available.

Other adverse effects
This product contains volatile organic compounds which have a photochemical ozone creation potential.

SECTION 13: Disposal considerations

Disposal methods

Product disposal
Dispose of contents/container in accordance with local, regional, national, and international regulations.

Packaging disposal
Since empty containers may retain product residue, follow labels warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Waste treatment
Incinerate the material under controlled conditions in an approved incinerator. Do not incinerate sealed containers.

Other disposal recommendations
US RCRA Waste U List: Reference: BUTANONE (CAS: 78-93-3): U159

SECTION 14: Transport information

DOT (US)
UN Number: UN1193
Class: 3
Packing Group: II
Proper Shipping Name: Ethyl methyl ketone or Methyl ethyl ketone

IMDG
UN Number: UN1193
Class: 3
Packing Group: II
EMS Number: F-E, S-D
Proper Shipping Name: Ethyl methyl ketone or Methyl ethyl ketone

IATA
UN Number: UN1193
Class: 3
Packing Group: II
Proper Shipping Name: Ethyl methyl ketone or Methyl ethyl ketone

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Toxic Substances Control Act

TSCA Section 12(b) Export Notification (40 CFR 707, Subpart. D)
Not regulated.

CERCLA Hazardous Substances List (40 CFR 302.4)
BUTANONE (CAS 78-93-3): Listed.

SARA 304 Emergency release notification
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)
Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous chemical: Yes

Classified hazard categories
Flammable (gases, aerosols, liquids, or solids)
Serious eye damage or eye irritation
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)
Hazard not otherwise classified (HNOC)

SARA 313 (TRI reporting)
Not regulated.

Other Federal Regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act
Not regulated.

Drug Enforcement Administration (DEA), List 2, Essential Chemicals (21 CFR 1320.02(b) and 1310.04(f)(2) and Chemical Code Number
BUTANONE (CAS 78-93-3): 6714

Drug Enforcement Administration (DEA), List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))
BUTANONE (CAS 78-93-3): 35%WV

DEA Exempt Chemical Mixtures Code Number
BUTANONE (CAS 78-93-3): 6714

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace
BUTANONE (CAS 78-93-3): Low priority

California Proposition 65: California Safe Drinking Water and Toxic Enforcement Act of 1986 (Prop 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))
BUTANONE (CAS 78-93-3)

U.S. State Right To Know Components

Product	California	Massachusetts	New Jersey	New York	Pennsylvania	Rhode Island
Methyl Ethyl Ketone (CAS: 78-93-3)	Listed	Listed	Listed	Listed	Listed	Listed

International Inventories

Product	TSCA	DSL /NDSL	EINECS /ELINCS	ENCS	IECSC	PICCS	AICS	NZIoC	TW	KECI
Methyl Ethyl Ketone (CAS: 79-20-9)	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present

Legend
P – Present on list
X – Not present on list
TSCA – United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL – Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS – European Inventory of Existing Chemical Substances or European List of Notified Chemical Substances
ENCS – Japanese ENCS (Existing & New Chemical Substances) Inventory
IECSC – Inventory of Existing Chemicals Substances Produced or Imported in China (IECSC)
PICCS – Philippines Inventory of Chemicals and Chemical Substances
AICS – Australian Inventory of Chemical Substances)
NZIoc – New Zealand Inventory of Chemicals
TW – Taiwan National Chemical Inventory
KECI – Korean Existing Chemicals Inventory

HMIS Rating

METHYL ETHYL KETONE	
HEALTH	2
FLAMMABILITY	3
PHYSICAL HAZARD	0
PERSONAL PROTECTION	

NFPA Rating

SECTION 16: Other information

Issue Date: 2022-08-22
Notes: First Issue

16.1 Further information/disclaimer

The supplier disclaims all expressed or implied warranties of merchantability or fitness for a specific use, with respect to the product or the information provided herein. All information appearing herein is based upon data obtained from manufacturers and/or recognized technical resources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency. Conditions of use are beyond our control, and therefore users are responsible for verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their handling and disposal of the product. Users also assume all risks in regards to the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or process.

16.2 Preparation information

Sources of key data used to compile the Safety Data Sheet: Internal technical data, data from raw material SDSs, EPA CompTox Chemical Dashboard (comptox.epa.gov), EPA Substance Registry Services (SRS), OSHA Occupational Chemical Database (https://www.osha.gov/chemicaldata), OSHA 29CFR 1910.1200 Hazard Communication (https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1200), European Chemicals Agency (ECHA) C&L Inventory Database (echa.europa.eu), CAMEO Chemicals (cameochemicals.noaa.gov), Code of Federal Regulations CFR Title 49 (https://www.ecfr.gov/current/title-49), California Proposition 65 (https://www.p65warnings.ca.gov/), California Proposition 65 List (https://oehha.ca.gov/proposition-65/proposition-65-list), National Library of Medicine (https://pubchem.ncbi.nlm.nih.gov/), TSCA Chemical Substances Inventory (https://www.epa.gov/tsca-inventory/how-access-tsca-inventory), OECD eChem Portal Search Results (https://www.echemportal.org/echemportal/substance-search).