



# Safety Data Sheet

Section 1. Identification		
<b>Product Identifier</b>	Methyl Ethyl Ketone	<b>Version: 4</b> <b>Effective Date: 18 July, 2017</b>
<b>Other Means Of Identification</b>	2-butanone	
<b>Initial Supplier Identifier</b>	Chemfax Products Ltd. 11444 – 42 Street SE Calgary, AB T2C 5C4 Tel: 403-287-2055	
<b>Recommended Use and Restrictions On Use</b>	Industrial solvent. No restrictions.	
<b>Product Family</b>	Ketone	
<b>24 Hour Emergency</b>	Canutec (613) 996-6666	

Section 2. Hazard Identification	
<b>Hazard Classification</b>	 
<b>Physical Hazards</b>	Flammable Liquids – Category 2
<b>Health Hazards</b>	Specific Target Organ Toxicity (Single Exposure) - Category 3 Eye Damage/Irritation – Category 2A
<b>Signal Word</b>	Danger
<b>Hazard Statement</b>	Highly flammable liquid and vapour. May cause respiratory irritation; or may cause drowsiness or dizziness. Causes serious eye irritation.
<b>Precautionary Prevention Statement</b>	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion proof electrical, ventilation and lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Wear protective gloves, clothing, and eye & face protection. Avoid inhaling dust, fume, gas, mist, vapours or spray. Only use outdoors, or in a well-ventilated area. Wash hands thoroughly after handling. Wear eye and face protection.

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<b>Precautionary Response Statement</b>	<p>IF ON SKIN (or hair): Immediately remove all contaminated clothing. Rinse skin with water or shower if on clothing. In case of fire, use dry chemical, CO<sub>2</sub>, or alcohol foam to extinguish.</p> <p>IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell.</p> <p>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, seek medical attention.</p>
<b>Precautionary Storage Statement</b>	Store locked up and in a well-ventilated place. Keep cool. Keep container tightly closed.
<b>Precautionary Disposal Statement</b>	Dispose of contents/container in accordance with local regulations.
<b>Other Hazards</b>	None

### Section 3. Composition / Information on Ingredients

Chemical Name	Common Name or Synonyms	CAS NO. and Other Unique Identifiers	% by weight
Methyl Ethyl Ketone	2-butanone	78-93-3	60-100

### Section 4. First-Aid Measures

<b>Eye Contact</b>	Flush eyes with water for 15 minutes. Seek medical attention.
<b>Skin Contact</b>	Flush area with water. If irritation persists, seek medical attention. Launder clothing before reuse.
<b>Inhalation</b>	Remove victim to fresh air. If there is difficulty breathing, seek immediate medical attention.
<b>Ingestion</b>	Remove victim to fresh air. If there is difficulty breathing, seek immediate medical attention.
<b>Most Important Symptoms and Effects Both Acute and Delayed</b>	<p>Irritation of the nasal mucous membranes. Nausea. Headache.</p> <p>EXPOSURE TO HIGH CONCENTRATIONS: Irritation of the respiratory tract, central nervous system depression, dizziness, mental confusion, narcosis, and/or disturbances of consciousness.</p> <p>ON CONTINUOUS EXPOSURE/CONTACT: Red skin, dry skin, and/or cracking of the skin.</p> <p>Irritation of the eye tissue. Inflammation/damage of the eye tissue.</p>
<b>Immediate Medical Attention and Special Treatment</b>	Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Immediately call a poison center or doctor/physician. Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.



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Section 5. Fire-Fighting Measures	
<b>Suitable and Unsuitable Extinguishing Media</b>	Dry chemical, CO <sub>2</sub> , alcohol foam. Do not use a heavy water stream.
<b>Hazardous Combustion Products</b>	Carbon monoxide and dioxide.
<b>Specific Hazards Arising From the Product</b>	On heating: peroxidation resulting in increased fire or explosion risk. Upon combustion: Carbon monoxide (CO) and carbon dioxide (CO <sub>2</sub> ) are formed. Reacts violently with (strong) oxidizers, which increases the risk of fire/explosion. Produces a violent to explosive reaction with many compounds (e.g. some halogens compounds, alcohols, and some acids/bases). Prolonged storage: peroxidation resulting in increased fire or explosion risk. DIRECT EXPLOSION HAZARD. Gas/vapour explosive with air within explosion limits. INDIRECT EXPLOSION HAZARD. may be ignited by sparks. Reactions with explosion hazards: see "Reactivity Hazard".
<b>Special Protective Equipment and Precautions For Fire-Fighters</b>	Fire-fighters should wear self-contained breathing apparatus and full protective clothing. Use water spray to cool containers and structures exposed to fire.

Section 6. Accidental Release Measures	
<b>Personal Precautions, Protective Equipment and Emergency Procedures</b>	Chemical resistant gloves (neoprene), coveralls (rubber) and boots rubber.
<b>Environmental Precautions</b>	Do not allow material to enter, sewers and surface watercourses. Low lying areas – sumps, basements etc. may collect flammable vapours.
<b>Methods and Materials For Containment and Clean-Up</b>	Remove/extinguish all sources of ignition and naked flames. Pump up or soak up spilled material and place in suitable container for disposal. Allow residues to evaporate and disperse.

Section 7. Handling and Storage	
<b>Precautions For Safe Handling</b>	Handle with care. Flammable liquid. Ground all containers when in use. Spark resistant equipment should be employed. Clothing should be Nomex or similar non static forming material.
<b>Conditions For Safe Storage</b>	Store in a cool dry place. Remove all sources of ignition and naked flames. Keep out of direct sunlight.

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Section 8. Exposure Controls / Personal Protection				
<b>Control Parameters</b>	<b>TWA: 8 Hr</b>	<b>STEL: 15 min</b>	<b>Ceiling</b>	<b>IDLH *</b>
Methyl ethyl ketone	200 ppm ACGIH	300 ppm ACGIH		3000 ppm
* Immediately Dangerous to Life and Health				
<b>Exposure Controls</b>	Local exhaust ventilation			
<b>Appropriate Engineering Controls</b>	Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.			
<b>Individual Protective Measures</b>	If exposure limits are exceeded:			
<b>Eye / Face Protection</b>	Safety glasses			
<b>Skin Protection</b>	Chemical resistant coveralls, gloves			
<b>Respiratory Protection</b>	Air purifying respirator fitted with organic vapour cartridges if exposure limits are exceeded.			

Section 9. Physical and Chemical Properties	
<b>Appearance</b>	Clear, colourless liquid
<b>Odour</b>	Strong sweet ketone odour
<b>Odour Threshold</b>	Not available.
<b>pH</b>	Not applicable
<b>Flash Point</b>	-9 °C
<b>Boiling Point and Boiling Range</b>	79 – 80.5 °C
<b>Melting Point and Freezing Point</b>	-94.8 °C
<b>Evaporation Rate</b>	2.7 (ether =1)
<b>Flammability (solid, gas)</b>	Not applicable
<b>Upper and Lower Flammability or Explosive Limits</b>	1.5 - 12 vol % 45 - 378 g/m <sup>3</sup>
<b>Vapour Pressure</b>	10.33 kPa @ 20 °C
<b>Vapour Density</b>	2.41 (air = 1)
<b>Relative Density</b>	0.804 – 0.806
<b>Solubility</b>	Miscible
<b>Partition co-efficient, n-Octanol/Water</b>	0.3 (Experimental value; OECD 117: Partition Coefficient (n-octanol/water), HPLC method; 40 °C)
<b>Auto-ignition Temperature</b>	404 - 515 °C
<b>Explosive Limits</b>	LEL: 1.8 % UEL: 11.5%
<b>% Volatile</b>	100

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<b>Decomposition Temperature</b>	No data
<b>Viscosity</b>	0.00041 Pa.s (25 °C)

<b>Section 10. Stability and Reactivity</b>	
<b>Reactivity</b>	On heating: peroxidation resulting in increased fire or explosion risk. Upon combustion: Carbon monoxide (CO) and carbon dioxide (CO <sub>2</sub> ) are formed. Reacts violently with (strong) oxidizers, which increases the risk of fire/explosion. Produces a violent to explosive reaction with many compounds (e.g. some halogens compounds, alcohols, and some acids/bases). Prolonged storage: peroxidation resulting in increased fire or explosion risk.
<b>Chemical Stability</b>	Stable
<b>Possibility of Hazardous Reactions</b>	Will not occur
<b>Conditions to Avoid</b>	Naked flames, sparks and sources of ignition. Elevated temperatures.
<b>Incompatible Materials</b>	Oxidizing agents, strong alkalis, strong bases, reducing agents, amines, ammonia, aldehydes, halogens, and hydrogen peroxide.
<b>Hazardous Decomposition Products</b>	Peroxides.

<b>Section 11. Toxicological Information</b>			
<b>Component Toxicity</b>	<b>LD50 Oral</b>	<b>LD50 Dermal</b>	<b>LC50 Inhalation</b>
Methyl ethyl ketone	2.6 g/kg (Rat)	6.4 g/kg (Rabbit)	11300 ppm (Rat) 4h
<b>Likely Routes of Exposure</b>			
<b>Skin:</b>	May cause moderate skin irritation with a burning sensation. Repeated and prolonged contact may cause defatting, leading to dermatitis.		
<b>Eyes:</b>	May cause burning sensation, redness, swelling and blurred vision.		
<b>Inhalation:</b>	May cause burning sensation in the nose and throat, coughing and difficulty breathing. High concentrations may cause central nervous system depression, resulting in headaches, dizziness and nausea. Continued inhalation may result in unconsciousness and/or death.		
<b>Ingestion:</b>	May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation and central nervous system depression. Aspiration hazard – small amounts of product can be aspirated in to the lungs during ingestion and vomiting, this may cause lung injury leading to death. Symptoms may include coughing, gasping, choking, shortness of breath, bluish coloured skin, rapid breathing and heart rate. Pulmonary edema or bleeding, drowsiness, confusion, coma and		

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	seizures may occur in more serious cases. Symptoms may be delayed up to 24 hours dependant on quantity of material inhaled.
<b>Acute Toxicity Estimates (ATE)</b>	No data
<b>STOT (Specific Target Organ Toxicity) – Single Exposure</b>	May cause drowsiness or dizziness
<b>Aspiration Toxicity</b>	Irritation of the nasal mucous membranes, nausea, and headache. EXPOSURE TO HIGH CONCENTRATIONS: Irritation of the respiratory tract, central nervous system depression, dizziness, mental confusion, narcosis, and disturbances of consciousness.
<b>STOT (Specific Target Organ Toxicity) – Repeated Exposure</b>	Not classified
<b>Skin Corrosion / Irritation</b>	Red skin; ON CONTINUOUS EXPOSURE/CONTACT: Dry skin, and cracking of the skin.
<b>Serious Eye Damage / Irritation</b>	Irritation of the eye tissue, and inflammation/damage of the eye tissue.
<b>Respiratory or Skin Sensitization</b>	ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Dry skin, itching, and skin rash/inflammation.
<b>Carcinogenicity</b>	Not listed.
<b>Reproductive Toxicity</b>	
- <b>Sexual Function and Fertility</b>	Not classified
- <b>Development of Offspring</b>	Animal studies have shown fetotoxicity (skeletal anomalies) at doses which did not produce any or only slight maternal toxicity
- <b>Effects on or via Lactation</b>	Not classified
<b>Germ Cell Mutagenicity</b>	Not classified
<b>Interactive Effects</b>	Not classified
<b>Other Information</b>	Not classified

<b>Section 12. Ecological Information</b>	
<b>Ecotoxicity</b>	Methyl ethyl ketone: LC50; 3130 – 3320 mg/L flow through (Pimephales promelas)
<b>Bioacumulative Potential</b>	No data
<b>Biodegradability</b>	Readily bio-degradable
<b>Mobility in Soil</b>	Not available
<b>Special Remarks</b>	Photodegradation will occur. Not expected to bio-accumulate.

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Section 13. Disposal Considerations	
<b>Disposal Considerations</b>	Dispose of contents/containers in accordance with local regulations.

Section 14. Transport Information	
<b>UN Number</b>	1193
<b>UN Proper Shipping Name</b>	Methyl ethyl ketone
<b>Transport Hazard Class(es)</b>	3
<b>Packaging Group</b>	II
<b>Environmental Hazards</b>	Not applicable
<b>Bulk Transport</b>	Not applicable
<b>Special Precaution</b>	Not applicable
<b>DOT Erg#</b>	127

Section 15. Regulatory Information	
<b>Canada – DSL Inventory</b>	All components of this product are either on the Domestic Substances List (DSL), Non-Domestic Substances List (NDSL), or exempt
<b>TSCA</b>	All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt
<b>Additional Information</b>	None

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<b>Section 16. Other Information</b>	
<b>NFPA Rating</b>	Health-2/ Flammability-3/Reactivity-0/Special Hazard-Not applicable
<b>HMIS Rating</b>	Health-2/Flammability-3/Reactivity-0/Personal Protection-See Section 8.
<b>Prepared by:</b>	Chemfax Products Ltd., Technical Department
<b>Date Prepared:</b>	1 December, 2011
<b>Date of Latest Revision:</b>	18 July, 2017
<b>Disclaimer</b>	
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