Safety Data Sheet

According to OSHA HCS 2012 (29 CFR 1910.1200)

Section 1: Identification

Product Identifier: **Methyl Ethyl Ketone**
Synonyms: 2-Butanone; Ethyl methyl ketone; Methyl acetone; MEK
Recommended Use: Solvent
Emergency Health and Safety Number: CHEMTREC 414-277-1311 (24 Hours)
CHEMTREC 800-424-9300

Distributor:
Dial Manufacturing, Inc.
25 S. 51st Avenue
Phoenix, AZ 85043

SDS Information:
Phone: 602-278-1100
Email:
URL: www.dialmfg.com

Customer Service:
U.S.: 1-800-350-3425

Section 2: Hazards Identification

Signal Word: Danger
GHS Classification: Flammable Liquid Category 2
kin Corrosion/Irritation Category 2
Serious Eye Damage/Eye Irritation Category 2A
Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 3

Hazard Statements: Highly flammable liquid and vapour.
Causes skin irritation.
Causes serious eye Irritation.
May cause respiratory irritation.
May cause drowsiness or dizziness.

Precautionary Statements:
Prevention: Keep away from heat, sparks, open flames and hot surfaces. - No smoking.
Ground and bond container and receiving equipment.
Use explosion-proof electrical, ventilating, and lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing dust, gas, mist, vapors or spray.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear gloves, eye and face protection and protective clothing.

Response: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER or doctor if you feel unwell.
Specific treatment (see First Aid on SDS or on this label).
If skin irritation occurs: Get medical advice or attention.
If eye irritation persists: Get medical advice or attention.
Take off contaminated clothing and wash before reuse.
In case of fire: Use appropriate extinguishing media - See Section 5 on SDS.

Storage: Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store in a secure manner.

Disposal: Dispose of in accordance with local, regional and international regulations.

Hazards Not Otherwise Classified: May be harmful or fatal if swallowed and enters airways.

Percentage of Components with Unknown Acute Toxicity:
Oral: 100.0 %
Dermal: 100.0 %

Section 3: Composition / Information on ingredients

Component	CAS Number	% by Wt.
Methyl Ethyl Ketone	78-93-3	100%

[1] All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Section 4: First Aid Measures

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention.

Skin Contact: Immediately flush skin with plenty of water while removing contaminated clothing and shoes. Do not reuse clothing or shoes until cleaned. If irritation develops or persists, get medical attention. Wash with soap and water. Do not apply oils or ointments unless ordered by the physician.

Inhalation: Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION IMMEDIATELY.

Ingestion: If swallowed, call a physician immediately. DO NOT induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

Note to Physicians:
If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

Most Important Symptoms/Effects:
Eye Contact: Causes moderate to severe irritation. May cause: eye injury. Vapors are also irritating.
Skin Contact: May cause mild to moderate irritation. Prolonged and repeated contact with skin can cause defatting and drying of the skin which may result in skin irritation and dermatitis. Prolonged and repeated exposure may cause: blistering.
Skin Absorption: May be harmful if absorbed through skin. Low dermal toxicity.
Inhalation: May cause moderate irritation. Mildly toxic by inhalation. Vapors may irritate: nose, throat, respiratory tract. May cause headache, dizziness, anesthesia, other central nervous system effects.
Ingestion: May cause moderate irritation. Low acute toxicity. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Section 5: Fire-Fighting Measures

Extinguishing Media: Water spray. Dry chemical. Carbon dioxide. Alcohol foam. Do not use straight streams of water.

Fire Fighting Methods: Evacuate area of unprotected personnel. Wear protective clothing including NIOSH approved self-contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products. Use water spray to cool fire-exposed containers and disperse vapors. If a leak or spill has not ignited, use water spray to disperse the vapors. If container is not properly cooled, it can rupture in the heat of a fire. Use water spray to cool fire exposed surfaces and to protect personnel. Run-off from fire control may cause pollution.

Fire and Explosion Hazards: EXTREMELY FLAMMABLE LIQUID. Vapors are heavier than air. Vapors may settle in low or confined areas, or travel long distances along the ground or surface to an ignition source where they may ignite, flashback or explode. Keep away from heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment). PROCESS HAZARD: Sudden release of hot organic vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into hot equipment under a vacuum, may result in ignitions without the presence of obvious ignition sources. Published "auto-ignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated-temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions.

Hazardous Combustion Products: Carbon dioxide. Carbon monoxide. Unidentifiable organic materials.
Smoke. Fumes.

Section 6: Accidental Release Measures

Spill Clean-Up Procedures: EXTREMELY FLAMMABLE LIQUID. Eliminate all sources of ignition. Evacuate unprotected personnel from area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in Section 8. Never exceed any occupational exposure limit. Shut off source of leak if safe to do so. Contain spill, place into drums for proper disposal. Soak up residue with non-flammable absorbent material. DO NOT use sawdust or other cellulose-type material. Place in non-leaking containers for immediate disposal. Flush remaining area with water to remove trace residue and dispose of properly. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs. Prevent entry into basements, low areas, or confined areas. Use non-sparking tools and equipment. A vapor suppressing foam may be used to reduce vapors. For large spills: Water spray may reduce vapor, but may not prevent ignition in closed spaces.
CAUTION: Spilled material may be slippery.

Section 7: Handling and Storage

Handling: Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area. Wash thoroughly after handling. Empty containers retain product residue (vapor, dust, or liquid) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other source of ignition. They may explode and cause injury or death. Always open containers slowly to allow any excess pressure to vent. Launder contaminated clothing before reuse. Air-dry contaminated clothing in a well ventilated area before laundering. Use non-sparking tools and equipment. Use appropriate grounding and bonding practices. Take precautionary measures against static discharges.

Storage: EXTREMELY FLAMMABLE LIQUID. Store in a cool, well-ventilated area away from all sources of ignition and out of direct sunlight. Store in a dry location away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers. Static electricity may accumulate and create a fire hazard. Ground fixed equipment. Bond and ground transfer containers and equipment. *The Occupational* Safety and Health Administration (OSHA) permits the use of polyethylene containers, under its de minimis policy, for storing flammable and combustible liquids provided certain conditions are met. The complete OSHA standard on storing flammable and combustible liquids can be found in 29 CFR 1910.106. See Section 10 for incompatible materials.

Section 8: Exposure Controls / Personal Protection

Component	ACGIH Exposure Guidelines	OSHA Exposure Guidelines	Other
Methyl Ethyl Ketone	200 ppm TWA 300 ppm STEL	200 ppm TWA 590mg/m^3 TWA	– –

Engineering Controls: Local exhaust ventilation, process enclosures, or other engineering controls are required when handling or using this product to avoid overexposure. Use explosion-proof ventilation equipment. Maintain adequate ventilation. Do not use in closed or confined spaces. Avoid creating dust or mist. Keep levels below exposure limits. To determine exposure levels, monitoring should be performed regularly.

Eye/Face Protection: Wear chemical safety goggles while handling this product. Wear additional eye protection such as a face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Do not wear contact lenses.

Skin Protection: Prevent contact with this product. Wear gloves and protective clothing depending on condition of use. Protective gloves: Chemical-resistant.

Respiratory Protection: Respiratory protection must be worn if ventilation does not eliminate symptoms or keep levels below recommended exposure limits. If exposure limits are exceeded, wear: NIOSH-Approved organic respirator. NIOSH-Approved air purifying respirator. NIOSH-Approved Supplied Air Respirator (SAR). NIOSH-Approved self-contained breathing apparatus. DO NOT exceed limits established by the respirator manufacturer. All respiratory protection programs must comply with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements and must be followed whenever workplace conditions require a respirator's use.

Other Protective Equipment: Eye-wash station. Safety shower. Rubber apron. Chemical safety shoes. Rubber boots. Protective clothing.

General Hygiene Conditions: Wash with soap and water before meal times and at the end of each work shift. Food, beverages, and tobacco products should not be carried, stored or consumed where this material is in use.

Section 9: Physical and Chemical Properties

Physical State:	Liquid	**Color:**	Clear. Colorless.
Odor:	Ketone odor	**Odor Threshold:**	N.D.
pH:	N.A.	**Freezing Point (deg. F):**	- -123
Melting Point (deg. F):	N.A.	**Initial Boiling Point or Boiling Range:**	- 175 'F
Flash Point:	16 'F	**Flash Point Method:**	Literature
Evaporation Rate (nBuAc = 1):	6	**Flammability (solid, gas):**	N.D.
Lower Explosion Limit:	1.4% (V)	**Upper Explosion Limit:**	11.5% (V)
Vapor Pressure (mm Hg):	- 78 @ 20C	**Vapor Density (air=1):**	>1
Specific Gravity or Relative Density:	-0.806 @ 20C	**Solubility in Water:**	Appreciable
Partition Coefficient (n-octanol/water):	N.D.	**Autoignition Temperature:**	>450C (842F)
Decomposition Temperature:	N.D.	**Viscosity:**	N.D.
% Volatile (wt%):	100	**VOC (wt%):**	100
VOC (lbs/gal):	- 6.71	**Fire Point:**	N.D.

Section 10: Stability and Reactivity

Reactivity: No data available.

Chemical Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur under normal conditions.

Conditions to Avoid: Avoid contact with heat, sparks, electric arcs, other hot surfaces, and open flames. Avoid other ignition sources.

Incompatible Materials: Strong oxidizing agents. Acids. Halogenated compounds. Caustics. Ammonia. Amines. Isocyanates. Pyridines.

Hazardous Decomposition Products: Carbon oxides.

Section 11: Toxicological Information

Component	Oral LD50	Dermal LD50	Inhalation LC50
Methyl Ethyl Ketone	No Data	No Data	8H Rat: 23,500.0 mg/m3

Routes of Exposure: Eyes. Ingestion. Inhalation. Skin. Absorption.

Eye Contact: Causes moderate to severe irritation. May cause: eye injury. Vapors are also irritating.

Skin Contact: May cause mild to moderate irritation. Prolonged and repeated contact with skin can cause defatting and drying of the skin which may result in skin irritation and dermatitis. Prolonged and repeated exposure may cause: blistering.

Skin Absorption: May be harmful if absorbed through skin. Low dermal toxicity.

Inhalation: May cause moderate irritation. Mildly toxic by inhalation. Vapors may irritate: nose, throat, respiratory tract. May cause: headache, dizziness, anesthesia, other central nervous system effects.

Ingestion: May cause moderate irritation. Low acute toxicity. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Medical Conditions Aggravated by Exposure to Product: None known.

Other: Simultaneous exposure to Methyl Ethyl Ketone (MEK) and n-Hexane can potentiate the risk of adverse effects from n-Hexane on the peripheral nervous system.

Cancer Information:
This product does not contain 0.1% or more of the known or potential carcinogens listed in NTP, IARC, or OSHA.

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Section 12: Ecological Information

Ecotoxicological Information:

Toxicity to fish: LC50 Bluegill sunfish: 4,467 mg"; 96 h; literature value
LC50 Poecilia reticulata: 5,700 mg/l; 24 h; literature value
LC50 Pimephales promelas: 3,200 mg/l; 96 h; literature value
Toxicity to daphnia: LC50 Daphnia magna: < 520 mg/l; 48 h; literature value

Chemical Fate Information:

ECOTOXICITY: Not expected to be harmful to aquatic organisms.
MOBILITY: Expected to remain in water or migrate through soil.
PERSISTENCE AND DEGRADABILITY
Biodegradation: Expected to be readily biodegradable.
Hydrolysis: Transformation due to hydrolysis not expected to be significant.
Photolysis: Expected to degrade at a moderate rate in water when exposed to sunlight.
Atmospheric Oxidation: Transformation due to atmospheric oxidation not expected to be significant.

Section 13: Disposal Considerations

Hazardous Waste Number: U159; 0035; 0001
Note: When methyl ethyl ketone is a spent solvent, it is classified as a hazardous waste from a nonspecific source (F005), as stated in 40 CFR 261.31.

Disposal Method: Dispose of in a permitted hazardous waste management facility following all local, state and federal regulations. Reclaim (recycle) solvent. Incinerate in a furnace where permitted under Federal, State, and local regulations. Since emptied containers retain product residue, follow label warnings *even* after container is emptied. DO NOT pressurize, cut, weld, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition

Section 14: Transport Information

DOT (Department of Transportation):

Identification Number: UN1193
Proper Shipping Name: METHYL ETHYL KETONE
Hazard Class: 3
Packing Group: II
Label Required: FLAMMABLE
Reportable Quantity (RQ): 5000# (Methyl Ethyl Ketone)

Section 15: Regulatory Information

TSCA Inventory Status: All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

SARA Title III Section 311/312 Category Hazards:

Immediate (Acute)	Delayed (Chronic)	Fire Hazard	Pressure Release	Reactive
Yes	No	Yes	No	No

Regulated Components:

Component	CAS Number	CERCLA RQ	SARA EHS	SARA 313	U.S. HAP	WI HAP	Prop 65
Methyl Ethyl Ketone	78-93-3	Yes	No	No	No	No	No

***Prop 65 - May Contain the Following Trace Components:** No data available

Section 16: Other Information

Hazard Rating System

Health: 2 **Flammability:** 3
Reactivity: 0 • = Chronic Health Hazard

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NFPA Rating System

Health:	1	**Flammability:**	3
Reactivity:	0	**Special Hazard:**	None

MSDS Abbreviations

N.A. = Not Applicable
HAP = Hazardous Air Pollutant
C = Ceiling Limit
N.D. = Not Determined
VOC = Volatile Organic Compound
N.E./Not Estab. = Not Established

MSDS Prepared by: NAO
Reason for Revision: New format. Changes made throughout the MSDS.

REVISED	REPLACES
08-Apr-15	06-Aug-10

The data in this Material Safety Data Sheet relates to the specific material designated and does not relate to its use In combination with any other material or process. The data contained is believed to be correct. However, since conditions of use are outside our control it should not be taken as warranty or representation for which HYDRITE CHEMICAL CO. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.