

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 06/11/2009

Reviewed on 06/11/2009

1 Identification of substance:**Product details:****Product name:** Methyl vinyl ketone**Stock number:**

A11910

L03485

Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Emergency Phone: (978) 521-6300

CHEMTREC: (800) 424-9300

Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:**Chemical characterization:****Description: (CAS#)**

Methyl vinyl ketone (CAS# 78-94-4): 100%

Identification number(s):**EINECS Number:** 201-160-6**Impurities and stabilising additives:** Hydroquinone (CAS# 123-31-9)**3 Hazards identification****Hazard description:**

T+ Very toxic

F Highly flammable

Information pertaining to particular dangers for man and environment

R 11 Highly flammable.

R 26/28 Very toxic by inhalation and if swallowed.

R 34 Causes burns.

Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	4
FIRE	3
REACTIVITY	1

Health (acute effects) = 4

Flammability = 3

Reactivity = 1

GHS label elements**Danger**

2.6/2 - Highly flammable liquid and vapour.

**Danger**

3.1/1 - Fatal if swallowed.

3.1/1 - Fatal if inhaled.

**Danger**

3.2/1B - Causes severe skin burns and eye damage.

Prevention:

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.

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Take precautionary measures against static discharge.
 Do not breathe dust/fume/gas/mist/vapours/spray.
 Wash thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.
 Wear protective gloves/protective clothing/eye protection/face protection.
 Wear respiratory protection.

Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 IF INHALED: Remove 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.
 Immediately call a POISON CENTER or doctor/physician.
 Specific treatment is urgent (see label).
 Specific treatment (see label).
 Rinse mouth.
 Wash contaminated clothing before reuse.
 In case of fire: Use for extinction: CO2, powder or water spray.

Storage:

Store in a well-ventilated place. Keep container tightly closed.
 Store in a well-ventilated place. Keep cool.
 Store locked up.

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

4 First aid measures**General information**

Immediately remove any clothing soiled by the product.
 Remove breathing apparatus only after contaminated clothing has been completely removed.
 In case of irregular breathing or respiratory arrest provide artificial respiration.

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.
 Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.
 Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing

Do not induce vomiting; immediately call for medical help.
 Seek immediate medical advice.

5 Fire fighting measures**Suitable extinguishing agents**

Use carbon dioxide, extinguishing powder or foam. Water may be ineffective but may be used for cooling exposed containers.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Protective equipment:

Wear self-contained respirator.
 Wear fully protective impervious suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.
 Ensure adequate ventilation
 Keep away from ignition sources

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
 Use neutralizing agent.
 Dispose contaminated material as waste according to item 13.

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Ensure adequate ventilation.
 Do not flush with water or aqueous cleansing agents
 Keep away from ignition sources.
Additional information:
 See Section 7 for information on safe handling
 See Section 8 for information on personal protection equipment.
 See Section 13 for disposal information.

7 Handling and storage**Handling****Information for safe handling:**

Keep container tightly sealed.
 Ensure good ventilation at the workplace.
 Open and handle container with care.

Information about protection against explosions and fires:

Keep ignition sources away.
 Protect against electrostatic charges.
 Fumes can combine with air to form an explosive mixture.

Storage

Requirements to be met by storerooms and receptacles: Store in a cool location.

Information about storage in one common storage facility:

Store away from oxidizing agents.
 Protect from heat.

Further information about storage conditions:

Keep container tightly sealed.
 Refrigerate

8 Exposure controls and personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace: Not required.

Additional information: No data

Personal protective equipment**General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.
 Remove all soiled and contaminated clothing immediately.
 Wash hands before breaks and at the end of work.

Store protective clothing separately.
 Avoid contact with the eyes and skin.

Breathing equipment: Use suitable respirator when high concentrations are present.

Protection of hands:

Check protective gloves prior to each use for their proper condition.
 Impervious gloves

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality.
 Quality will vary from manufacturer to manufacturer.

Eye protection:

Safety glasses
 Tightly sealed goggles
 Full face protection

Body protection: Protective work clothing.

9 Physical and chemical properties:**General Information**

Form:	Liquid
Color:	Colorless
Odor:	Not determined

Change in condition

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	79-81°C (174-178°F)
Sublimation temperature / start:	Not determined

Flash point:	-7°C (19°F)
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Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Explosion limits:	
Lower:	2.14 Vol %
Upper:	15.64 Vol %
Vapor pressure:	Not determined
Density at 20°C (68°F):	0.842 g/cm ³
Solubility in / Miscibility with Water:	Fully miscible

10 Stability and reactivity**Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:

Oxidizing agents

Heat

Dangerous reactions No dangerous reactions known**Dangerous products of decomposition:** Carbon monoxide and carbon dioxide**11 Toxicological information****Acute toxicity:****LD/LC50 values that are relevant for classification:**

Oral	LD50	23300 µg/kg (mouse)
		23100 µg/kg (rat)
Inhalative	LC50/2H	8 mg/m ³ /2H (mouse)
	LC50/4H	7 mg/m ³ /4H (rat)
Irritation of skin	mild	0.1 % (mouse)
		0.1 % (rat)
	severe	1 % (mouse)
		1 % (rat)

Primary irritant effect:**on the skin:**

Corrosive effect on skin and mucous membranes.

Irritant to skin and mucous membranes.

on the eye:

Strong corrosive effect.

Irritating effect.

Sensitization: No sensitizing effects known.**Other information (about experimental toxicology):**

Mutagenic effects have been observed on tests with bacteria.

Subacute to chronic toxicity:**Subacute to chronic toxicity:**

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:

Behavioral - somnolence (general depressed activity).

Behavioral - convulsions or effect on seizure threshold.

Behavioral - ataxia.

Behavioral - tremor.

Sense Organs and Special Senses (Eye) - conjunctive irritation.

Sense Organs and Special Senses (Olfaction) - effect, not otherwise specified.

Lungs, Thorax, or Respiration - respiratory depression

Lungs, Thorax, or Respiration - acute pulmonary edema.

Lungs, Thorax, or Respiration - other changes.

Lungs, Thorax, or Respiration - structural or functional change in trachea or bronchi.

Nutritional and Gross Metabolic - weight loss or decreased weight gain.

Reproductive - Paternal Effects - spermatogenesis (including genetic material, sperm morphology, motility, and count).

Reproductive - Paternal Effects - testes, epididymis, sperm duct.

Related to Chronic Data - changes in testicular weight.

Related to Chronic Data - death.

Subacute to chronic toxicity:

Corrosive materials are acutely destructive to the respiratory tract, eyes, skin and digestive tract. Eye contact may result in permanent damage and complete vision loss.

Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis. May cause coughing, wheezing, laryngitis, shortness of breath, headache, nausea

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and vomiting. Ingestion may cause damage to the mouth, throat and esophagus. May cause skin burns or irritation depending on the severity of the exposure.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:**General notes:**

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations**Product:**

Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information**DOT regulations:**

Hazard class: 6.1
Identification number: UN1251
Packing group: I
Poison inhalation hazard: Yes
Proper shipping name (technical name): METHYL VINYL KETONE, STABILIZED
Label: 6.1+3+8

Land transport ADR/RID (cross-border)

ADR/RID class: 6.1 (TFC) Toxic substances
Danger code (Kemler): 639
UN-Number: 1251
Packaging group: I
Description of goods: 1251 METHYL VINYL KETONE, STABILIZED

Maritime transport IMDG:

IMDG Class: 6.1
UN Number: 1251
Label: 6.1+3+8
Packaging group: I
Proper shipping name: METHYL VINYL KETONE, STABILIZED

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Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class:	6.1
UN/ID Number:	1251
Label	6.1+3+8
Packaging group:	I
Proper shipping name:	METHYL VINYL KETONE, STABILIZED

UN "Model Regulation": UN1251, METHYL VINYL KETONE, STABILIZED, 6.1 (3+8), I

15 Regulations**Product related hazard informations:****Hazard symbols:**

T+ Very toxic
F Highly flammable

Risk phrases:

11 Highly flammable.
26/28 Very toxic by inhalation and if swallowed.
34 Causes burns.

Safety phrases:

4 Keep away from living quarters.
7/9 Keep container tightly closed and in a well-ventilated place.
20 When using do not eat or drink.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
28 After contact with skin, wash immediately with plenty of water
33 Take precautionary measures against static discharges.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
45 In case of accident or if you feel unwell, seek medical advice immediately.
60 This material and its container must be disposed of as hazardous waste.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use:

For use only by technically qualified individuals.
This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Zachariah Holt

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent