

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 12/19/2007

Reviewed on 08/27/2007

1 Identification of substance:**Product details:****Product name:** Ethanol, Alcohol Reagent, anhydrous, denatured**Stock number:** 33361**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#)**

Ethyl alcohol (CAS# 64-17-5): 89.5-91.4%

Methyl alcohol (CAS# 67-56-1): 4.5-4.6%

Isopropyl alcohol (CAS# 67-63-0): 4-6%

3 Hazards identification**Hazard description:**

Xn Harmful

F Highly flammable

Information pertaining to particular dangers for man and environment

Causes a narcotic effect.

R 11 Highly flammable.

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R 36 Irritating to eyes.

R 68/20/21/22 Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

R 67 Vapours may cause drowsiness and dizziness

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

HEALTH	1
FIRE	3
REACTIVITY	1

Health (acute effects) = 1

Flammability = 3

Reactivity = 1

4 First aid measures**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

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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 Seek immediate medical advice.

5 Fire fighting measures**Suitable extinguishing agents**

In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.

For safety reasons unsuitable extinguishing agents Water

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).

Dispose contaminated material as waste according to item 13.

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.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

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.

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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.

Do not store together with acids.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

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:

Ethyl alcohol

	ppm
ACGIH TLV	1000; Not classifiable as a human carcinogen
Austria MAK	1000
Belgium TWA	1000
Denmark TWA	1000
Finland TWA	1000; 1250-STEL
France VME	1000; 5000-VLE
Germany MAK	1000
Hungary TWA	1000; 3000-STEL
Korea TLV	1000; Not classifiable as a human carcinogen
Netherlands MAC-TGG	500
Norway TWA	500
Poland TWA	1000 mg/m ³ ; 300 mg/m ³ -STEL
Russia	1000 mg/m ³ -STEL
Sweden NGV	500; 1000-KTV
Switzerland MAK-W	1000
United Kingdom TWA	1000
OSHA PEL	1000

Methyl alcohol

	ppm
ACGIH TLV	200; 250-STEL (skin)
Austria MAK	200 (skin)
Belgium TWA	200; 250-STEL, (skin)
Denmark TWA	200 (skin)
Finland TWA	200; 250-STEL (skin)
France VME	200; 1000-VLE
Hungary TWA	50 mg/m ³ ; 100 mg/m ³ -STEL (skin)
Japan OEL	200 (skin)
Korea TLV	200; 250-STEL (skin)
Netherlands MAC-TGG	200 (skin)
Norway TWA	100
Poland TWA	100 mg/m ³ ; 300 mg/m ³ -STEL
Russia TWA	200; 5 mg/m ³ -STEL (skin)
Sweden NGV	200; 250-KTV (skin)
United Kingdom TWA	200; 250-STEL (skin)
OSHA PEL	200

Isopropyl alcohol (2-Propanol)

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	ppm
ACGIH TLV	400; 500-STEL
Austria MAK	400
Belgium TWA	400; 500-STEL
Denmark TWA	200
France VLE	400
Germany MAK	400
Ireland TWA	400; 500-STEL (skin)
Japan TWA	400-STEL
Korea TWA	400; 500-STEL
Netherlands MAC-TGG	400 (skin)
Norway TWA	100
Poland TWA	900; 1200-STEL
Russia TWA	400-STEL
Sweden NGV	150; 250-STEL
Switzerland MAK-W	400
United Kingdom TWA	400; 500-STEL
OSHA PEL	400

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.

Avoid contact with the eyes.

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

Body protection: Protective work clothing.

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

Form:	Liquid
Color:	Colorless
Odor:	Alcohol-like

Change in condition

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined

Flash point: 8°C (46°F)

Ignition temperature: Not determined

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Decomposition temperature:	Not determined
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures is possible.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not determined
Density at 20°C (68°F):	0.79 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

Acids

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:**

Methanol (CAS# 67-56-1)

ORL-RAT LD50: 5628 MG/KG

ORL-MUS LD50: 7300 MG/KG

SKN-RBT LD50: 15800 MG/KG

ORL-HMN LDLo: 143 MG/KG

Ethanol (CAS# 64-17-5)

ORL-RAT LD50: 7060 MG/KG

ORL-MUS LD50: 3450 MG/KG

IHL-RAT LC50: 20000 PPM/10H

Primary irritant effect:

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: No sensitizing effects known.

Subacute to chronic toxicity:

Ethyl alcohol is rapidly oxidized in the body and is less toxic than methyl alcohol. Exposure to high vapor concentrations may cause upper respiratory tract irritation and eye irritation. It is a central nervous system depressant and ingestion leads to drowsiness, lassitude, loss of appetite and inability to concentrate. Mutagenic and teratogenic data have been reported.

Symptoms of methanol overexposure may include intoxication, headache, drowsiness, nausea, vomiting, blurred vision, blindness, coma and death. It is a defatting agent and can cause skin and eye irritation. Absorption through the skin is possible. Chronic exposure may cause liver and eye injury.

2-Propanol (isopropyl alcohol) may act as a local irritant and in high concentrations as a narcotic with symptoms such as headache, nausea,

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dizziness, vomiting, mental depression, anesthesia, and coma. Similar symptoms may be caused by ingestion. It can cause corneal burns on contact with the eyes and has caused teratogenic, mutagenic and reproductive effects in laboratory animals.

Additional toxicological information:

Danger through skin absorption.

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

IARC-3: Not classifiable as to carcinogenicity to humans.

ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for components in this product.

12 Ecological information:**General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

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:	3
Identification number:	UN1170
Packing group:	II
Proper shipping name (technical name):	ETHANOL
Label	3

Land transport ADR/RID (cross-border)

ADR/RID class: 3 (F1) Flammable liquids

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Danger code (Kemler):	33
UN-Number:	1170
Packaging group:	II
Description of goods:	1170 ETHANOL (ETHYL ALCOHOL)

Maritime transport IMDG:

IMDG Class:	3
UN Number:	1170
Label	3
Packaging group:	II
Proper shipping name:	ETHANOL (ETHYL ALCOHOL)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class:	3
UN/ID Number:	1170
Label	3
Packaging group:	II
Proper shipping name:	ETHANOL

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

Xn Harmful

F Highly flammable

Risk phrases:

11 Highly flammable.

20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

36 Irritating to eyes.

68/20/21/22 Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

67 Vapours may cause drowsiness and dizziness

Safety phrases:

7 Keep container tightly closed.

16 Keep away from sources of ignition - No smoking.

24/25 Avoid contact with skin and eyes.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

36/37 Wear suitable protective clothing and gloves.

45 In case of accident or if you feel unwell, seek medical advice immediately.

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National regulations

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

This product contains a chemical known to the state of California to cause cancer or reproductive toxicity.

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: Paul V. Connolly