Safety Data Sheet
according to 1907/2006/EC, Article 31

Printing date 12.08.2010 *Revision: 12.08.2010*

1 Identification of substance

Product details

Trade name ***2-Ethyl-4-methyl-1,3-dioxalane solution in acetonitrile (1000mh/L)***

Stock number: H31933

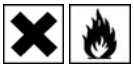
Manufacturer/Supplier:
Alfa Aesar GmbH & Co.KG
Benzstrasse 3
D-76185 Karlsruhe / Germany
E-mail: gcat@matthey.com
www.alfa-chemcat.com

Informing department: Product safety department.

Emergency information:
Giftnotruf Universität Mainz / Poison Information Center Mainz
www.giftinfo.uni-mainz.de Telefon:+49(0)6131/19240

2 Hazards identification

Hazard designation:



Xn Harmful
F Highly flammable

Information pertaining to particular dangers for man and environment

R 11 Highly flammable.
R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R 36 Irritating to eyes.

GHS label elements

Danger

H225 - Highly flammable liquid and vapour.

Warning

H302 - Harmful if swallowed.
H312 - Harmful in contact with skin.
H332 - Harmful if inhaled.
H319 - Causes serious eye irritation.

Prevention:
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.

Response:
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Disposal: P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/information on ingredients

Chemical characterization:
Designation: (CAS#) 2-Ethyl-4-methyl-1,3-dioxalane (CAS# ?): ≈0.1%
Acetonitrile (CAS# 75-05-8): Balance

Identification number(s):
EINECS Number: 200-835-2
Index number: 608-001-00-3

4 First aid measures

After inhalation Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. Seek immediate medical advice.

After skin contact Instantly 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 doctor.

After swallowing 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 flue gases:
Can be released in case of fire:
Carbon monoxide and carbon dioxide
Nitrogen oxides (NOx)
Hydrogen cyanide (HCN)

Protective equipment:
Wear self-contained breathing apparatus.
Wear full protective 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 of contaminated material as waste according to item 13.
Ensure adequate ventilation.
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 information on disposal.

7 Handling and storage

Handling
Information for safe handling:
Keep containers tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires:
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

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Fumes can combine with air to form an explosive mixture.

Storage
Requirements to be met by storerooms and containers: Store in 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 critical values that require monitoring at the workplace:

Acetonitrile

	ppm
ACGIH TLV	20 (skin)
Belgium TWA	40, 60-STEL (skin)
France TWA	40
Germany TWA	40
Netherlands TWA	40
Switzerland TWA	40, 80-STEL (skin)
United Kingdom TWA	40, 60-STEL
Russia TWA	10 mg/m3
Denmark TWA	40, 60-STEL
Finland TWA	40, 60-STEL
Hungary TWA	50 mg/m3, 100 mg/m3-STEL (skin)
USA	40

Additional information: No data

Personal protective equipment
General protective and hygienic measures The usual precautionary measures should be adhered to in handling the chemicals.
Keep away from foodstuffs, beverages and food.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
Breathing equipment: Use breathing protection with high concentrations.
Protection of hands: Check protective gloves prior to each use for their proper condition.
Material of gloves The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
Eye protection: Safety glasses
Face protection
Body protection: Protective work clothing.

9 Physical and chemical properties:

General Information	
Form:	Fluid
Colour:	Colourless
Smell:	Aromatic
Change in condition	
Melting point/Melting range:	-44 to -48°C
Boiling point/Boiling range:	82°C
Sublimation temperature / start:	Not determined
Flash point:	5°C
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Critical values for explosion:	
Lower:	Not determined
Upper:	Not determined
Steam pressure:	Not determined
Density at 20°C	0.782 g/cm³
Solubility in / Miscibility with	
Water:	Fully miscible

10 Stability and reactivity

Thermal decomposition / conditions to be avoided: No decomposition 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
Nitrogen oxides (NOx)
Hydrogen cyanide (prussic acid)

11 Toxicological information

Acute toxicity:
Primary irritant effect:
on the skin: Irritant for skin and mucous membranes.
on the eye: Irritant effect.

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Sensitization: No sensitizing effect known.
Other information (about experimental toxicology):
Tumorigenic effects have been observed on tests with laboratory animals.
Reproductive effects have been observed on tests with laboratory animals.
Mutagenic effects have been observed on tests with insects.
Mutagenic effects have been observed on tests with bacteria.
Mutagenic effects have been observed on tests with laboratory animals.
Additional toxicological information:
Danger by skin resorption.
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.
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.

12 Ecological information:

Additional ecological information:
General notes:
Water hazard class 1 (Self-assessment): slightly hazardous for water.
Do not allow undiluted product or large quantities of it to reach ground water, water bodies 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 for proper disposal.
Hand over to disposers of hazardous waste.
Must be specially treated under adherence to official regulations.

Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.
Recommended cleaning agent: Water, if necessary with cleaning agent.

14 Transport information

Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)

ADR/RID-GGVS/E Class: 3 (F1) Flammable liquids.
Kemler Number: 33
UN-Number: 1648
Packaging group: II
Label 3
Designation of goods: 1648 ACETONITRILE
Limited quantities (LQ) LQ4
Transport category 2
Tunnel restriction code D/E

Maritime transport IMDG/GGVSea:

IMDG/GGVSea Class: 3
UN Number: 1648
Label 3
Packaging group: II
Marine pollutant: No
Correct technical name: ACETONITRILE

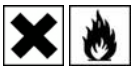
Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 3
UN/ID Number: 1648
Label 3
Packaging group: II
Correct technical name: ACETONITRILE

UN "Model Regulation":
UN1648, ACETONITRILE, 3, II

15 Regulatory information

Designation according to EC guidelines:
Code letter and hazard designation of product:



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.

Safety phrases:
16 Keep away from sources of ignition - No smoking.
36/37 Wear suitable protective clothing and gloves.

National regulations
Information about limitation of use:
Employment restrictions concerning young persons must be observed.
For use only by technically qualified individuals.

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Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.

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 data specification sheet: 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
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)