

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 11/10/2008

Reviewed on 11/10/2008

1 Identification of substance:

Product details:

Product name: Adiponitrile

Stock number: L13160

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#)

Adiponitrile (CAS# 111-69-3); 100%

Identification number(s):

EINECS Number: 203-896-3

3 Hazards identification

Hazard description:



T Toxic

Information pertaining to particular dangers for man and environment

R 23/25 Toxic by inhalation and if swallowed.

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	3
FIRE	2
REACTIVITY	1

Health (acute effects) = 3

Flammability = 2

Reactivity = 1

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.

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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

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

5 Fire fighting measures

Suitable extinguishing agents

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

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

Nitrogen oxides (NOx)

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

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.

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.

Open and handle container with care.

Prevent formation of aerosols.

Information about protection against explosions and fires:

Keep ignition sources away.

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Storage**Requirements to be met by storerooms and receptacles:**

No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.

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:

Adiponitrile (CAS# 111-69-3)

	mg/m ³
ACGIH TLV	8.8 (skin)
Netherlands MAC-TGG	8.8
Russia TWA	10

Components with limit values that require monitoring at the workplace:**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.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands:

Impervious gloves

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

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:	Odorless

Change in condition

Melting point/Melting range:	2°C (36°F)
Boiling point/Boiling range:	295°C (563°F)

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Sublimation temperature / start: Not determined	
Flash point:	93°C (199°F)
Ignition temperature:	549°C (1020°F)
Decomposition temperature:	Not determined
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	1.7 Vol %
Upper:	4.99 Vol %
Vapor pressure at 40°C (104°F):	.0133 hPa (.271 mm Hg)
Density at 20°C (68°F):	0.965 g/cm ³

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

Dangerous reactions Contact with acids releases toxic gases

Dangerous products of decomposition:

Carbon monoxide and carbon dioxide

Nitrogen oxides

11 Toxicological information

Acute toxicity:
LD/LC50 values that are relevant for classification:

Oral	LD50	172 mg/kg (mouse) 155 mg/kg (rat)
Inhalative	LC50/4H	1710 mg/m ³ /4H (rat)

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:

Adiponitrile is highly toxic through all pathways of exposure due to the conversion to cyanide in the body. It produces disturbances of the respiratory and circulatory systems, irritation of the stomach and intestines, and loss of weight. Inhalation can cause damage to hearing acuity, while repeated exposure even to minimal fumes can cause damaged blood cells, enzyme inhibition, and death. However, its low vapor pressure makes poisoning unlikely if there is adequate ventilation.

Additional toxicological information:

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.

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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.

14 Transport information**DOT regulations:**

Hazard class: 6.1
Identification number: UN2205
Packing group: III
Proper shipping name (technical name): ADIPONITRILE
Label: 6.1

Land transport ADR/RID (cross-border)

ADR/RID class: 6.1 (T1) Toxic substances
Danger code (Kemler): 60
UN-Number: 2205
Packaging group: III
Description of goods: 2205 ADIPONITRILE

Maritime transport IMDG:

IMDG Class: 6.1
UN Number: 2205
Label: 6.1
Packaging group: III

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Proper shipping name: ADIPONITRILE

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class:	6.1
UN/ID Number:	2205
Label	6.1
Packaging group:	III
Proper shipping name:	ADIPONITRILE

15 Regulations

Product related hazard informations:

Hazard symbols:

T Toxic

Risk phrases:

23/25 Toxic by inhalation and if swallowed.

Safety phrases:

- 4 Keep away from living quarters.
- 9 Keep container in a well-ventilated place.
- 20 When using do not eat or drink.
- 23 Do not breathe gas/fumes/vapour/spray.
- 36/39 Wear suitable protective clothing and eye/face protection.
- 45 In case of accident or if you feel unwell, seek medical advice immediately.

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: Paul V. Connolly