

**1 Identification**

**Product identifier**

**Product name:** Acrylonitrile

**Stock number:** A13058

**CAS Number:**

107-13-1

**EC number:**

203-466-5

**Index number:**

608-003-00-4

**Relevant identified uses of the substance or mixture and uses advised against.**

**Identified use:** SU24 Scientific research and development

**Details of the supplier of the safety data sheet**

**Manufacturer/Supplier:**

Alfa Aesar

Thermo Fisher Scientific Chemicals, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

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

**Emergency telephone number:**


During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

**2 Hazard(s) identification**

**Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)**

 GHS02 Flame


Flam. Liq. 2 H225 Highly flammable liquid and vapor.

 GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 3 H311 Toxic in contact with skin.

Acute Tox. 3 H331 Toxic if inhaled.

 GHS08 Health hazard

Carc. 1B H350 May cause cancer.

 GHS05 Corrosion

Eye Dam. 1 H318 Causes serious eye damage.

 GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H335 May cause respiratory irritation.

**Hazards not otherwise classified** No information known.

**Label elements**

**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

**Hazard pictograms**

GHS02 GHS05 GHS06 GHS08

**Signal word** Danger

**Hazard statements**

H225 Highly flammable liquid and vapor.

H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H317 May cause an allergic skin reaction.

H350 May cause cancer.

H335 May cause respiratory irritation.

**Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P201 Obtain special instructions before use.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P281 Use personal protective equipment as required.

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.

P361 Remove/Take off immediately all contaminated clothing.

P405 Store locked up.

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

**WHMIS classification**

B2 - Flammable liquid

**Product name: Acrylonitrile**

D1A - Very toxic material causing immediate and serious toxic effects  
D2A - Very toxic material causing other toxic effects

(Contd. of page 1)



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

HEALTH	3	Health (acute effects) = 3
FIRE	3	Flammability = 3
REACTIVITY	1	Physical Hazard = 1

**Other hazards**  
**Results of PBT and vPvB assessment**  
**PBT:** Not applicable.  
**vPvB:** Not applicable.

**3 Composition/information on ingredients**

**Chemical characterization: Substances**  
**CAS# Description:**  
107-13-1 Acrylonitrile  
**Concentration:** ≤100%  
**Identification number(s):**  
**EC number:** 203-466-5  
**Index number:** 608-003-00-4

**4 First-aid measures**

**Description of 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.  
**Information for doctor**  
**Most important symptoms and effects, both acute and delayed**  
Causes skin irritation.  
Toxic in contact with skin.  
Toxic if inhaled.  
Toxic if swallowed.  
Causes serious eye damage.  
May cause respiratory irritation.  
May cause an allergic skin reaction.  
May cause cancer.  
**Indication of any immediate medical attention and special treatment needed** No further relevant information available.

**5 Fire-fighting measures**

**Extinguishing media**  
**Suitable extinguishing agents** Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.  
**Special hazards arising from the substance or mixture**  
If this product is involved in a fire, the following can be released:  
Carbon monoxide and carbon dioxide  
Hydrogen cyanide (HCN)  
Nitrogen oxides (NOx)  
**Advice for firefighters**  
**Protective equipment:**  
Wear self-contained respirator.  
Wear fully protective impervious suit.

**6 Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation  
Keep away from ignition sources  
**Environmental precautions:** Do not allow product to reach sewage system or any water course.  
**Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose of contaminated material as waste according to section 13.  
Ensure adequate ventilation.  
**Prevention of secondary hazards:** Keep away from ignition sources.  
**Reference to other sections**  
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**  
**Precautions 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.

(Contd. on page 3)  
USA

Product name: Acrylonitrile																											
<div>Information about protection against explosions and fires: Protect against electrostatic charges. Fumes can combine with air to form an explosive mixture. Keep ignition sources away. Conditions for safe storage, including any incompatibilities Storage Requirements to be met by storerooms and receptacles: Store in a cool location. Information about storage in one common storage facility: Store in the dark. Store away from oxidizing agents. Further information about storage conditions: Keep container tightly sealed. Store in cool, dry conditions in well sealed containers. Protect from exposure to light. Specific end use(s) No further relevant information available.</div> <div>(Contd. of page 2)</div>																											
8 Exposure controls/personal protection																											
<div>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. Control parameters Components with limit values that require monitoring at the workplace: 107-13-1 Acrylonitrile (100.0%)<table><tr><td>PEL (USA)</td><td>Long-term value: 2 ppm Ceiling limit value: 10 ppm Skin; see 29 CFR 1910.1045</td></tr><tr><td>REL (USA)</td><td>Long-term value: 1 ppm Ceiling limit value: 10* ppm *15-min; Skin; See Pocket Guide App. A</td></tr><tr><td>TLV (USA)</td><td>Long-term value: 4.3 mg/m³, 2 ppm Skin</td></tr><tr><td>EL (Canada)</td><td>Long-term value: 2 ppm Skin; IARC 2B</td></tr><tr><td>EV (Canada)</td><td>Long-term value: 2 ppm Skin</td></tr></table> Additional information: No data Exposure controls 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. Maintain an ergonomically appropriate working environment. Breathing equipment: Use self-contained respiratory protective device in emergency situations. Recommended filter device for short term use: Use a respirator with multi-purpose combination (US) or type ABEK (EN 14387) as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards such as NIOSH (USA) or CEN (EU). Protection of hands: Impervious gloves Check protective gloves prior to each use for their proper condition. The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer. Material of gloves Butyl rubber, BR Penetration time of glove material (in minutes) 480 Glove thickness 0.3 mm Eye protection: Tightly sealed goggles Body protection: Protective work clothing.</div>		PEL (USA)	Long-term value: 2 ppm Ceiling limit value: 10 ppm Skin; see 29 CFR 1910.1045	REL (USA)	Long-term value: 1 ppm Ceiling limit value: 10* ppm *15-min; Skin; See Pocket Guide App. A	TLV (USA)	Long-term value: 4.3 mg/m³, 2 ppm Skin	EL (Canada)	Long-term value: 2 ppm Skin; IARC 2B	EV (Canada)	Long-term value: 2 ppm Skin																
PEL (USA)	Long-term value: 2 ppm Ceiling limit value: 10 ppm Skin; see 29 CFR 1910.1045																										
REL (USA)	Long-term value: 1 ppm Ceiling limit value: 10* ppm *15-min; Skin; See Pocket Guide App. A																										
TLV (USA)	Long-term value: 4.3 mg/m³, 2 ppm Skin																										
EL (Canada)	Long-term value: 2 ppm Skin; IARC 2B																										
EV (Canada)	Long-term value: 2 ppm Skin																										
9 Physical and chemical properties																											
<div>Information on basic physical and chemical properties General Information Appearance:<table><tr><td>Form:</td><td>Liquid</td></tr><tr><td>Odor:</td><td>Pungent</td></tr><tr><td>Odor threshold:</td><td>Not determined.</td></tr></table> pH-value: Not determined. Change in condition<table><tr><td>Melting point/Melting range:</td><td>-84 °C (-119 °F)</td></tr><tr><td>Boiling point/Boiling range:</td><td>77 °C (171 °F)</td></tr><tr><td>Sublimation temperature / start:</td><td>Not determined</td></tr></table> Flash point: 0 °C (32 °F) Flammability (solid, gaseous) Not determined. Ignition temperature: 480 °C (896 °F) Decomposition temperature: Not determined Auto igniting: Not determined. Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures is possible. Explosion limits:<table><tr><td>Lower:</td><td>2.8 Vol %</td></tr><tr><td>Upper:</td><td>28 Vol %</td></tr><tr><td>Vapor pressure at 20 °C (68 °F):</td><td>116 hPa (87 mm Hg)</td></tr><tr><td>Density at 20 °C (68 °F):</td><td>0.806 g/cm³ (6.726 lbs/gal)</td></tr><tr><td>Relative density</td><td>Not determined.</td></tr><tr><td>Vapor density</td><td>Not determined.</td></tr><tr><td>Evaporation rate</td><td>Not determined.</td></tr></table></div>		Form:	Liquid	Odor:	Pungent	Odor threshold:	Not determined.	Melting point/Melting range:	-84 °C (-119 °F)	Boiling point/Boiling range:	77 °C (171 °F)	Sublimation temperature / start:	Not determined	Lower:	2.8 Vol %	Upper:	28 Vol %	Vapor pressure at 20 °C (68 °F):	116 hPa (87 mm Hg)	Density at 20 °C (68 °F):	0.806 g/cm³ (6.726 lbs/gal)	Relative density	Not determined.	Vapor density	Not determined.	Evaporation rate	Not determined.
Form:	Liquid																										
Odor:	Pungent																										
Odor threshold:	Not determined.																										
Melting point/Melting range:	-84 °C (-119 °F)																										
Boiling point/Boiling range:	77 °C (171 °F)																										
Sublimation temperature / start:	Not determined																										
Lower:	2.8 Vol %																										
Upper:	28 Vol %																										
Vapor pressure at 20 °C (68 °F):	116 hPa (87 mm Hg)																										
Density at 20 °C (68 °F):	0.806 g/cm³ (6.726 lbs/gal)																										
Relative density	Not determined.																										
Vapor density	Not determined.																										
Evaporation rate	Not determined.																										
<div>(Contd. on page 4) USA</div>																											

**Product name: Acrylonitrile**

(Contd. of page 3)

**Solubility in / Miscibility with**  
**Water at 20 °C (68 °F):** 73 g/l  
**Partition coefficient (n-octanol/water):** Not determined.  
**Viscosity:**  
**dynamic:** Not determined.  
**kinematic:** Not determined.  
**Other information** No further relevant information available.

**10 Stability and reactivity**

**Reactivity** No information known.  
**Chemical stability** Stable under recommended storage conditions.  
**Thermal decomposition / conditions to be avoided:** Decomposition will not occur if used and stored according to specifications.  
**Possibility of hazardous reactions** Reacts with strong oxidizing agents  
**Conditions to avoid** No further relevant information available.  
**Incompatible materials:**  
Oxidizing agents  
Light  
**Hazardous decomposition products:**  
Carbon monoxide and carbon dioxide  
Hydrogen cyanide  
Nitrogen oxides

**11 Toxicological information**

**Information on toxicological effects**  
**Acute toxicity:**  
Toxic in contact with skin.  
Toxic if inhaled.  
Toxic if swallowed.  
Danger through skin absorption.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

**LD/LC50 values that are relevant for classification:**

Oral	LD50	78 mg/kg (rat)
Dermal	LD50	63 mg/kg (rabbit)
Inhalative	LC50/4H	425 mg/m3/4H (rat)

**Skin irritation or corrosion:** Causes skin irritation.  
**Eye irritation or corrosion:** Causes serious eye damage.  
**Sensitization:** May cause an allergic skin reaction.  
**Germ cell mutagenicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.  
**Carcinogenicity:**  
May cause cancer.  
IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.  
NTP-R: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.  
ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans.  
Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.  
EPA-B1: Probable human carcinogen, limited evidence of carcinogenicity from epidemiologic studies.  
Carcinogen as defined by OSHA.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this substance.  
**Reproductive toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for this substance.  
**Specific target organ system toxicity - repeated exposure:** No effects known.  
**Specific target organ system toxicity - single exposure:** May cause respiratory irritation.  
**Aspiration hazard:** No effects known.  
**Subacute to chronic toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.  
**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.  
**Carcinogenic categories**  
**OSHA-Ca (Occupational Safety & Health Administration)** Substance is listed.

**12 Ecological information**

**Toxicity**  
**Aquatic toxicity:** No further relevant information available.  
**Persistence and degradability** No further relevant information available.  
**Bioaccumulative potential** No further relevant information available.  
**Mobility in soil** No further relevant information available.  
**Additional ecological information:**  
**General notes:**  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into the ground.  
Also poisonous for fish and plankton in water bodies.  
Toxic to aquatic life.  
May cause long lasting harmful effects to aquatic life.  
Avoid transfer into the environment.  
**Results of PBT and vPvB assessment**  
**PBT:** Not applicable.  
**vPvB:** Not applicable.  
**Other adverse effects** No further relevant information available.

**13 Disposal considerations**

**Waste treatment methods**  
**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**

**UN-Number**  
**DOT, IMDG, IATA** UN1093

(Contd. on page 5)  
USA

**Product name: Acrylonitrile**

(Contd. of page 4)

<b>UN proper shipping name</b> DOT ADR IMDG, IATA	Acrylonitrile, stabilized 1093 Acrylonitrile, stabilized ACRYLONITRILE, STABILIZED
<b>Transport hazard class(es)</b> DOT  	
<b>Class Label ADR</b>  	3 Flammable liquids. 3+6.1
<b>Class Label IMDG, IATA</b>  	3 (FT1) Flammable liquids 3+6.1
<b>Class Label</b>	3 Flammable liquids. 3+6.1
<b>Packing group</b> DOT, ADR, IMDG, IATA	I
<b>Environmental hazards:</b>	Environmentally hazardous substance, liquid
<b>Special precautions for user</b> EMS Number:	Warning: Flammable liquids F-E,S-D
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>Transport/Additional information:</b> DOT Marine Pollutant (DOT):	No
<b>UN "Model Regulation":</b>	UN1093, Acrylonitrile, stabilized, 3 (6.1), I

**15 Regulatory information**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**  
**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)  
**Hazard pictograms**



**Signal word** Danger  
**Hazard statements**

H225 Highly flammable liquid and vapor.  
H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.  
H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H317 May cause an allergic skin reaction.  
H350 May cause cancer.  
H335 May cause respiratory irritation.

**Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P201 Obtain special instructions before use.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P281 Use personal protective equipment as required.  
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.  
P361 Remove/Take off immediately all contaminated clothing.  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**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).

**SARA Section 313 (specific toxic chemical listings)**

107-13-1 | Acrylonitrile

**California Proposition 65**

**Prop 65 - Chemicals known to cause cancer**

107-13-1 | Acrylonitrile

**Prop 65 - Developmental toxicity** Substance is not listed.  
**Prop 65 - Developmental toxicity, female** Substance is not listed.  
**Prop 65 - Developmental toxicity, male** Substance is not listed.

**Information about limitation of use:**

Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.  
For use only by technically qualified individuals.

**Other regulations, limitations and prohibitive regulations**

**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.** Substance is not listed.

**The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.**  
Substance is not listed.

(Contd. on page 6)  
USA



Product name: Acrylonitrile

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.  
Chemical safety assessment: A Chemical Safety Assessment has not been carried out. (Contd. of page 5)

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 Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department  
Date of preparation / last revision 02/24/2017 / -

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)  
IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
HMIS: Hazardous Materials Identification System (USA)  
WHMIS: Workplace Hazardous Materials Information System (Canada)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
vPvB: very Persistent and very Bioaccumulative  
ACGIH: American Conference of Governmental Industrial Hygienists (USA)  
OSHA: Occupational Safety and Health Administration (USA)  
NTP: National Toxicology Program (USA)  
IARC: International Agency for Research on Cancer  
EPA: Environmental Protection Agency (USA)  
Flam. Liq. 2: Flammable liquids, Hazard Category 2  
Acute Tox. 3: Acute toxicity, Hazard Category 3  
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2  
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1  
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1  
Carc. 1B: Carcinogenicity, Hazard Category 1B  
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

USA