

SAFETY DATA SHEET

Creation Date 22-September-2009

Revision Date 18-December-2025

Revision Number 9

This safety data sheet was created pursuant to the requirements of: Canada WHMIS 2015 which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR) - SOR 2022-272

1. Identification

Product Name Acrylonitrile

Cat No. : AC149630000; AC149630010; AC149630025; AC149630050;
AC149630100; AC149631000

CAS-No 107-13-1
Synonyms Vinyl cyanide; Propenitrile

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Importer/Distributor

Fisher Scientific
112 Colonnade Road,
Ottawa, ON K2E 7L6,
Canada
Tel: 1-800-234-7437

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Manufacturer

Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11

Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99

CHEMTREC Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

WHMIS 2015 Classification

This product is hazardous in accordance with the Canada Hazardous Products Act (HPA) and Hazardous Products Regulation (HPR), as amended (SOR/2022-272)

Flammable liquids	Category 2
Acute oral toxicity	Category 3
Acute dermal toxicity	Category 3
Acute Inhalation Toxicity	Category 3
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 1
Skin Sensitization	Category 1
Carcinogenicity	Category 1B
Reproductive Toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system.	

Physical Hazards Not Otherwise Classified

Category 1

Hazardous polymerization may occur

Label Elements**Signal Word**

Danger

Hazard Statements

Highly flammable liquid and vapor
Toxic if swallowed, in contact with skin or if inhaled
Causes skin irritation
May cause an allergic skin reaction
Causes serious eye damage
May cause respiratory irritation
May cause cancer
Suspected of damaging fertility or the unborn child
Hazardous polymerization may occur

**Precautionary Statements****Prevention**

Keep cool. Protect from sunlight
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Keep container tightly closed
Ground and bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/equipment
Avoid breathing dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves/protective clothing/eye protection/face protection
Use non-sparking tools
Take action to prevent static discharges

Response

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
IF INHALED: Remove person to fresh air and keep 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/doctor
Rinse mouth
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
Take off contaminated clothing and wash it before reuse

Storage

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

Disposal

Dispose of contents/container to an approved waste disposal plant

Other Hazards

Toxic to aquatic life with long lasting effects

Light sensitive

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Acrylonitrile	107-13-1	>95

4. First-aid measures

General Advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.
Ingestion	Do NOT induce vomiting. Call a physician or poison control center immediately.
Most important symptoms/effects	Causes severe eye damage. May cause allergic skin reaction. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Water spray, carbon dioxide (CO ₂), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.
Unsuitable Extinguishing Media	No information available
Flash Point	-0.2 °C / 31.6 °F
Method -	CC (closed cup)
Autoignition Temperature	480 °C / 896 °F
Explosion Limits	
Upper	17.0%
Lower	3.1%
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical

Flammable. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air.

Hazardous Combustion Products

Nitrogen oxides (NO_x). Carbon monoxide (CO). Carbon dioxide (CO₂). Hydrogen cyanide (hydrocyanic acid).

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health 4	Flammability 3	Instability 2	Physical hazards N/A
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6. Accidental release measures

Personal Precautions

Ensure adequate ventilation. Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges.

Environmental Precautions

Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7. Handling and storage

Handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

Storage.

Keep away from heat, sparks and flame. Protect from direct sunlight. Flammables area. Keep container tightly closed in a dry and well-ventilated place. Incompatible Materials. Acids. Bases. Bromine. Peroxides. Metals. copper.

8. Exposure controls / personal protection

Exposure Guidelines

Component	Alberta	British Columbia	Ontario TWAEV	Quebec
Acrylonitrile	TWA: 2 ppm TWA: 4.3 mg/m ³ Skin	TWA: 2 ppm Skin	TWA: 2 ppm CEV: 10 ppm Skin	TWA: 2 ppm TWA: 4.3 mg/m ³ Ceiling: 10 ppm Ceiling: 11 mg/m ³ Skin

Component	Manitoba	New Brunswick	Newfoundland and Labrador	Nova Scotia
Acrylonitrile	TWA: 2 ppm Skin	TWA: 2 ppm Skin	TWA: 2 ppm Skin	TWA: 2 ppm Skin

Component	Nunavut	Prince Edward Island	Saskatchewan	Yukon
Acrylonitrile	TWA: 2 ppm STEL: 4 ppm Skin	TWA: 2 ppm	TWA: 2 ppm STEL: 4 ppm Skin	TWA: 20 ppm TWA: 45 mg/m ³ TWA: 5 mg/m ³ STEL: 30 ppm STEL: 70 mg/m ³ STEL: 5 mg/m ³ Skin

Component	ACGIH TLV	OSHA PEL	NIOSH
Acrylonitrile 107-13-1 (>95)	TWA: 2 ppm Skin	(Vacated) TWA: 5 mg/m ³ Ceiling: 10 ppm TWA: 2 ppm	IDLH: 60 ppm IDLH: 25 mg/m ³ REL = 1 ppm (TWA) Ceiling: 10 ppm

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.
Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection

Goggles

Hand Protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Glove material	Breakthrough time	Glove thickness	Glove comments
Nitrile rubber	See manufacturers recommendations	-	Splash protection only
Neoprene			
Natural rubber			
PVC			

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

Recommended Filter type: Organic gases and vapours filter Type A Brown conforming to EN14387

When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate ground water system.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

9. Physical and chemical properties

Appearance

Physical State

Liquid

Color

Colorless

Odor

Garlic-like

Odor Threshold

No information available

Property

Values

Remarks

• Method

Melting Point/Range

-83.5 °C / -118.3 °F

Softening Point

No data available

Boiling Point/Range

77.3 °C / 171.1 °F

Flash Point

-0.2 °C / 31.6 °F

Method - CC (closed cup)

Flammability (liquid)	Highly flammable	On basis of test data
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	Lower 2 Upper 28	
Autoignition Temperature	480 °C / 896 °F	
Decomposition Temperature	No data available	
pH	7.5	5% aq. sol
Viscosity	No data available	
Water Solubility	73 g/L (20°C)	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	log Pow	
Acrylonitrile	1.05	
Vapor Pressure	120 mbar @ 20 °C	
Density / Specific Gravity	0.800	
Bulk Density	Not applicable	Liquid
Vapor Density	1.83 (Air = 1.0)	(Air = 1.0)
Particle characteristics	Not applicable (liquid)	
Other Information		
Molecular Formula	C3 H3 N	
Molecular Weight	53.06	
Explosive Properties	Vapors may form explosive mixtures with air	
Self-accelerating polymerisation temperature (SAPT)	>160°C (packages up to 50kg) Heat of Polymerization (kj/kg) = 1560	

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Unstable. Light sensitive.
Conditions to Avoid	Excess heat. Exposure to light. Incompatible products. Keep away from open flames, hot surfaces and sources of ignition.
Incompatible Materials	Acids, Bases, Bromine, Peroxides, Metals, copper
Hazardous Decomposition Products	Nitrogen oxides (NO _x), Carbon monoxide (CO), Carbon dioxide (CO ₂), Hydrogen cyanide (hydrocyanic acid)
Hazardous Polymerization	Hazardous polymerization may occur upon depletion of inhibitor.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Information on expected route of exposure

Inhalation	May produce an allergic reaction.
Ingestion	May cause allergic reaction. May be harmful if swallowed.
Eyes	Avoid contact with eyes. Corrosive to the eyes and may cause severe damage including blindness. May cause irritation. Lachrymator (substance which increases the flow of tears). Sensitization.
Skin	Avoid contact with skin. Skin Corrosion/Irritation. May cause irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Harmful in contact with skin.

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Acrylonitrile	LD50 = 193 mg/kg (Rat)	LD50 = 200 mg/kg (Rabbit)	LC50 = 0.47 mg/L (Rat) 4 h

Toxicologically Synergistic Products No information available

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

**Respiratory
Skin**

Based on available data, the classification criteria are not met
Category 1

May cause sensitization by skin contact

(e) germ cell mutagenicity; Based on available data, the classification criteria are not met

(f) carcinogenicity; Category 1B

Possible cancer hazard. May cause cancer based on animal data The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Acrylonitrile	107-13-1	Group 2B	Reasonably Anticipated	A3	X	A3

IARC (International Agency for Research on Cancer)

NTP: (National Toxicity Program)

ACGIH: (American Conference of Governmental Industrial Hygienists)

Mexico - Occupational Exposure Limits - Carcinogens

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

A1 - Known Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

Mexico - Occupational Exposure Limits - Carcinogens

A1 - Confirmed Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Confirmed Animal Carcinogen

A4 - Not Classifiable as a Human Carcinogen

A5 - Not Suspected as a Human Carcinogen

(g) reproductive toxicity; Category 2

Reproductive Effects

Experiments have shown reproductive toxicity effects on laboratory animals.

(h) STOT-single exposure; Category 3

Results / Target organs

Respiratory system.

(i) STOT-repeated exposure; Based on available data, the classification criteria are not met

Target Organs

None known.

(j) aspiration hazard; Based on available data, the classification criteria are not met

Symptoms / effects, both acute and delayed Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

Other Adverse Effects The toxicological properties have not been fully investigated.

Endocrine Disrupting Properties This product does not contain any known or suspected endocrine disruptors.

12. Ecological information

Ecotoxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Acrylonitrile	Not listed	LC50: = 24 mg/L, 96h (Oncorhynchus mykiss) LC50: = 25 mg/L, 96h flow-through (Brachydanio rerio) LC50: = 33.5 mg/L, 96h static (Poecilia reticulata) LC50: = 18.07 mg/L, 96h semi-static (Cyprinus carpio) LC50: 8.7 - 10 mg/L, 96h flow-through (Lepomis macrochirus) LC50: 28 - 39 mg/L, 96h static (Pimephales promelas) LC50: 8.0 - 12.0 mg/L, 96h static (Lepomis macrochirus) LC50: 6.7 - 15 mg/L, 96h flow-through (Pimephales promelas)	EC50 = 254 mg/L 30 min EC50 = 367 mg/L 15 min EC50 = 495 mg/L 5 min EC50 = 6 mg/L 24 h	EC50: = 7.38 mg/L, 48h (Daphnia magna)

Persistence and Degradability Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its volatility.

Component	log Pow
Acrylonitrile	1.05

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Acrylonitrile - 107-13-1	U009	-

14. Transport information

DOT

UN-No UN1093
Proper Shipping Name ACRYLONITRILE, STABILIZED
Hazard Class 3
Subsidiary Hazard Class 6.1

Packing Group	I
TDG	
UN-No	UN1093
Proper Shipping Name	ACRYLONITRILE, STABILIZED
Hazard Class	3
Subsidiary Hazard Class	6.1
Packing Group	I
IATA	
UN-No	UN1093
Proper Shipping Name	ACRYLONITRILE, STABILIZED
Hazard Class	3
Subsidiary Hazard Class	6.1
Packing Group	I
IMDG/IMO	
UN-No	UN1093
Proper Shipping Name	ACRYLONITRILE, STABILIZED
Hazard Class	3
Subsidiary Hazard Class	6.1
Packing Group	I

15. Regulatory information

International Inventories

Component	CAS-No	DSL	NDSL	TSCA	TSCA Inventory notification - Active-Inactive	EINECS	ELINCS	NLP
Acrylonitrile	107-13-1	X	-	X	ACTIVE	203-466-5	-	-

Component	CAS-No	IECSC	KECL	ENCS	ISHL	TCSI	AICS	NZIoC	PICCS
Acrylonitrile	107-13-1	X	KE-29393	X	X	X	X	X	X

Legend:

X - Listed '-' - Not listed

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

Canada

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and its amendments and meets the requirements of the HPR (Paragraph 13(1)(a) of the revised Hazardous Products Act (HPA)).

Component	Canada - National Pollutant Release Inventory (NPRI)	Canadian Environmental Protection Agency (CEPA) - List of Toxic Substances	Canada's Chemicals Management Plan (CEPA)
Acrylonitrile	Part 1, Group B Substance Part 1, Group A Substance Part 4 Substance	Schedule I	

Other International Regulations

Authorisation/Restrictions according to EU REACH

Component	REACH (1907/2006) - Annex XIV - Substances Subject to	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous	REACH Regulation (EC 1907/2006) article 59 - Candidate

	Authorization	Substances	List of Substances of Very High Concern (SVHC)
Acrylonitrile	-	Use restricted. See entry 28. (see link for restriction details) Use restricted. See entry 75. (see link for restriction details)	-

REACH links

<https://echa.europa.eu/substances-restricted-under-reach>

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS-No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Acrylonitrile	107-13-1	Listed	Not applicable	Not applicable	Not applicable

Component	CAS-No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Acrylonitrile	107-13-1	Not applicable	Not applicable	Not applicable	Not applicable

16. Other information

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Revision Summary

This document has been updated to comply with the requirements of WHMIS 2015 which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR) to align with the Globally Harmonised System (GHS) (V7/8) for the Classification and Labelling of Chemicals.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS