

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Chemical Name Acrylonitrile-¹³C₃
(stabilized with 35-45 ppm 4-hydroxy anisole (H750015))

Catalogue # A191372

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Product Uses To be used only for scientific research and development. Not for use in humans or animals.

1.3 Details of the Supplier of the Safety Data Sheet

Company Toronto Research Chemicals
2 Brisbane Road
Toronto, ON M3J 2J8
CANADA

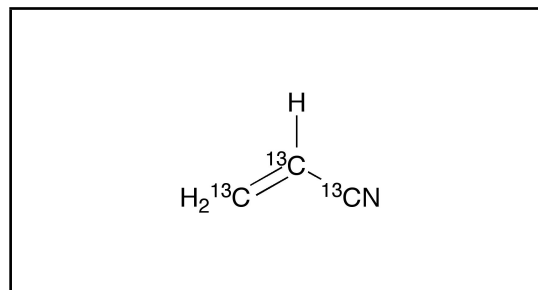
Telephone +14166659696

FAX +14166654439

Email orders@trc-canada.com

1.4 Emergency Telephone Number

Emergency# +14166659696 between 0800-1700 (GMT-5)



2. HAZARDS IDENTIFICATION

WHMIS Classification (Canada)

- B2 Flammable Liquid
- D1B Toxic Material Causing Immediate and Serious Toxic Effects
Toxic by Ingestion/Skin Absorption/Inhalation
- D2A Very Toxic Material Causing Other Toxic Effects
Reproductive Toxic/Teratogen/Carcinogen
- D2B Toxic Material Causing Other Toxic Effects
Moderate Skin/Eye Irritant
Skin Sensitizer

WHMIS Symbols (Canada)



2.1/2.2 Classification of the Substance or Mixture and Label Elements

GHS Hazards Classification (According to EU Regulation 1272/2008 and US OSHA 1910.1200)

- Flammable Liquids (Category 2)
- Acute Toxicity, Oral (Category 3)
- Acute Toxicity, Inhalation (Category 3)
- Acute Toxicity, Dermal (Category 3)
- Skin Irritation (Category 2)
- Sensitisation, Skin (Category 1)
- Serious Eye Damage (Category 1)
- Carcinogenicity (Category 1B)
- Reproductive Toxicity (Category 2)
- Hazardous to the Aquatic Environment, Long-Term Hazard (Category 2)

EU Classification (According to EU Regulation 67/548/EEC)

Highly flammable. Toxic by inhalation, in contact with skin and if swallowed. May cause sensitization by skin contact. Risk of serious damage to the eyes. May cause cancer. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

EU Risk and Safety Statements (According to EU Regulation 67/548/EEC)

Hazard Statements Hazard Codes

Highly Flammable	F
Toxic	T
Environmental Hazard	N



Risk Codes and Phrases

R11	Highly flammable.
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
R43	May cause sensitization by skin contact.
R41	Risk of serious damage to the eyes.
R45	May cause cancer.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Precaution Codes and Phrases

S23	Do not breathe spray.
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
S16	Keep away from sources of ignition - No smoking.
S61	Avoid release to the environment. Refer to special instructions.

GHS Hazards Identification (According to EU Regulation 1272/2008 and US OSHA 1910.1200)

Signal Word Danger



GHS Hazard Statements

H225	Highly flammable liquid and vapour.
H301	Toxic if swallowed.
H331	Toxic if inhaled.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H350	May cause cancer.
H361	Suspected of damaging fertility or the unborn child.
H411	Toxic to aquatic life with long lasting effects.

GHS Precautionary Statements

P210	Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P301/P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302/P352	IF ON SKIN: Wash with plenty of soap and water
P273	Avoid release to the environment.

2.3 Unclassified Hazards/Hazards Not Otherwise Classified

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Molecular Formula: $^{13}\text{C}_3\text{H}_3\text{N}$

Molecular Weight: 56.04

CAS Registry #: 202326-55-4

EC#:

Synonyms

Acrylon- $^{13}\text{C}_3$; Carbacryl- $^{13}\text{C}_3$; Cyanoethene- $^{13}\text{C}_3$; Cyanoethylene- $^{13}\text{C}_3$; Fumigrain- $^{13}\text{C}_3$; Propenenitrile- $^{13}\text{C}_3$; Vinyl Cyanide- $^{13}\text{C}_3$; NSC 6362- $^{13}\text{C}_3$;

3.2 Mixtures

Not a mixture

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice

If medical attention is required, show this safety data sheet to the doctor.

If Inhaled

If inhaled, move casualty to fresh air. If not breathing, give artificial respiration and consult a physician.

In Case of Skin Contact

Remove contaminated clothing and shoes. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In Case of Eye Contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If Swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Do NOT induce vomiting unless advised to do so by a physician or Poison Control Center. Seek medical attention.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

Cough, Shortness of breath, Headache, Nausea

4.3 Indication of any Immediate Medical Attention and Special Treatment Needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing Media

5.3 Advice for Firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further Information

No data available

5.2 Special Hazards Arising from the Substance or Mixture

Carbon oxides, Nitrogen oxides

5.3 Advice for Firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further Information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Use recommended personal protective equipment (see Section 8). Adequate ventilation must be provided to ensure vapours or mists are not inhaled. Vapours are heavier than air and may accumulate in low areas. All sources of ignition, including sources of static discharge, must be removed from area.

6.2 Environmental Precautions

Material should not be allowed to enter the environment. Prevent further spillage or discharge into drains, if safe to do so.

6.3 Methods and Materials for Containment and Cleaning Up

Contain the spill and then collect using non-combustible absorbent material (such as clay, diatomaceous earth, vermiculite or other appropriate material). Place material in a suitable, sealable container and then dispose according to local/national regulations and guidance (see Section 13).

6.4 Reference to Other Sections

For protective equipment, refer to Section 8. For disposal, see Section 13.

7. HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Avoid contact with skin and eyes. Ventilation and proper handling are to be used to prevent the formation of vapours and mists. Remove all sources of ignition and take precautionary measures to prevent the buildup of electrostatic discharge (ground and bond containers as appropriate). No smoking, eating or drinking around this material. Wash hands after use.

7.2 Conditions for Safe Storage, Including any Incompatibilities

Ensure container is kept securely closed before and after use. Keep in a well ventilated area and do not store with strong oxidizers or other incompatible materials (see Section 10).

Storage conditions: No Data Available

7.3 Specific End Uses

For scientific research and development only. Not for use in humans or animals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

Components with workplace exposure levels

Component	CAS#	Value	Control Parameters	Basis
Acrylonitrile	107-13-1	TWA	2 ppm 4.3 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWA	2 ppm	USA. ACGIH Threshold Limit Values (TLV)

8.2 Exposure Controls

Appropriate Engineering Controls

A laboratory fumehood or other appropriate form of local exhaust ventilation should be used to avoid exposure.

Personal Protective Equipment

All recommendations below are advisory in nature and a risk assessment should be performed by the employer/end user prior to use of this product. The type of protective equipment must be selected based on the amount and concentration of the dangerous material being used in the workplace.

Eye/Face Protection

Safety goggles or face shield. All equipment should have been tested and approved under appropriate standards, such as NIOSH (US), CSA (Canada), or EN 166 (EU).

Skin Protection

Gloves should be used when handling this material. Gloves are to be inspected prior to use. Contaminated gloves are to be removed using proper glove removal technique so that the outer surface of the glove does not contact bare skin. Dispose of contaminated gloves after use in compliance with good laboratory practices and local requirements.

Gloves used for incidental exposures (splash protection) should be designated as "chemical resistant" by EU standard EN 374 with the resistance codes corresponding to the anticipated use of the material. Unrated gloves are not recommended.

Suggested gloves: AnsellPro Sol-Vex nitrile gloves style 37-175, 15 mil thickness.
Penetration time has not been determined.

Gloves used for prolonged direct exposure (immersion) should be designated "chemical resistant" as per EN 734 with the resistance codes corresponding to the anticipated use of the material.

Suggested gloves: AnsellPro Viton/Butyl gloves style 38-612, 4/8 mil thickness.
Penetration time has not been determined.

These recommendations may not apply if the material is mixed with any other chemical, or dissolved into a solution. A risk assessment must be performed to ensure the gloves will still offer acceptable protection.

Body Protection

Chemical-resistant bodysuit (laminated Tychem SL or equivalent).

Respiratory Protection

Recommended respirators are NIOSH-approved OV/Multi-gas/P100 or CEN-approved ABEK-FFP3 respirators. These are to be only used as a backup to local exhaust ventilation or other engineering controls. If the respirator is the only means of protection, a full-face supplied air respirator must be used.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

A) Appearance

Liquid

B) Odour

No data available

C) Odour Threshold

No data available

D) pH

No data available

E) Melting Point/Freezing Point

No data available

G) Flash point

No data available

I) Flammability (Solid/Gas)

No data available

K) Vapour Pressure

No data available

M) Relative Density

No data available

O) Partition Coefficient: n-octanol/water

No data available

Q) Decomposition Temperature

No data available

S) Explosive Properties

No data available

9.2 Other Information

no data available

F) Initial Boiling Point/Boiling Range

No data available

H) Evaporation Rate

No data available

J) Upper/Lower Flammability/Explosive Limits

No data available

L) Vapour Density

No data available

N) Solubility

No Data Available

P) Auto-Ignition Temperature

No data available

R) Viscosity

No data available

T) Oxidizing Properties

No data available

10. STABILITY AND REACTIVITY**10.1 Reactivity**

No data available

10.2 Chemical Stability

Stable under recommended storage conditions

10.3 Possibility of Hazardous Reactions

Vapours may form explosive mixture with air

10.4 Conditions to Avoid

Heat, flames and sparks

10.5 Incompatible Materials

Strong oxidizing agents

10.6 Hazardous Decomposition Products

No data available

11. TOXICOLOGICAL INFORMATION**11.1 Information on Toxicological Effects****A) Acute Toxicity**

LD50 (oral - rat) 78 mg/kg

LC50 (inhalation - rat) 333 ppm/4H

LD50 (dermal - rabbit) 148 mg/kg

B) Skin Corrosion/Irritation

No data available

C) Serious Eye Damage/Irritation

No data available

D) Respiratory or Skin Sensitization

May cause an allergic skin reaction.

E) Germ Cell Mutagenicity

No data available

F) Carcinogenicity

Probable human carcinogen.

This compound has been designated by the IARC as Group 2A: Probably carcinogenic to humans.

G) Reproductive Toxicity/Teratogenicity

Laboratory results have shown reproductive toxicity/teratogenicity in animal models.

H) Single Target Organ Toxicity - Single Exposure

Mild respiratory tract irritation.

I) Single Target Organ Toxicity - Repeated Exposure

No data available

J) Aspiration Hazard

No data available

K) Potential Health Effects and Routes of Exposure

Inhalation

Toxic if inhaled. Causes respiratory tract irritation.

Ingestion

Toxic if swallowed.

Skin

Toxic if absorbed through skin. Causes skin irritation.

Eyes

Causes eye irritation.

L) Signs and Symptoms of Exposure

Cough, Shortness of breath, Headache, Nausea

To the best of our knowledge, the chemical, physical, and toxicological properties of this material have not been thoroughly investigated.

M) Additional Information

RTECS: AT5250000

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No data available

12.2 Persistence and Degradability

No data available

12.3 Bioaccumulative Potential

No data available

12.4 Mobility in Soil

No data available

12.5 Results of PBT and vPvB Assessment

No data available

12.6 Other Adverse Effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

A) Product

Product may be burned in an incinerator equipped with afterburner and scrubber. Excess and expired materials are to be offered to a licensed hazardous material disposal company. Ensure that all Federal and Local regulations regarding the disposal and destruction of this material are followed.

B) Contaminated Packaging

Dispose of as above.

C) Other Considerations

Product is not to be disposed of in sanitary sewers, storm sewers, or landfills.

14. TRANSPORT INFORMATION

14.1 UN Number

DOT (US): 1093

IATA: 1093

IMDG: 1093

ADR/RID: 1093

14.2 UN Proper Shipping Name

DOT (US)/IATA:

Acrylonitrile, stabilized

IMDG/ARD/RID:

ACRYLONITRILE, STABILIZED

14.3 Transport Hazard Class(es)

DOT (US): 3 (6.1)

IATA: 3 (6.1)

IMDG: 3 (6.1)

ADR/RID: 3 (6.1)

14.4 Packing Group

DOT (US): I

IATA: I

IMDG: I

ADR/RID: I

14.5 Environmental Hazards

DOT (US): None

IATA: None

IMDG: None

ADR/RID: None

14.6 Special Precautions for User

None

15. REGULATORY INFORMATION

This safety data sheet complies with the requirements of WHMIS (Canada), OSHA 1910.1200 (US), and EU Regulation EC No. 1907/2006 (European Union).

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

A) Canada

DSL/NDSL Status: This product or a component of this product is registered on the Canadian DSL/NDSL.

B) United States

TSCA Status: This product or a component is listed on the US EPA TSCA.

C) European Union

ECHA Status: This product or a component is registered with the EU ECHA.

15.2 Chemical Safety Assessment

No data available

16. OTHER INFORMATION

16.1 Revision History

Original Publication Date: 2/2/2015

16.2 List of Abbreviations

LD50	Median lethal dose of a substance required to kill 50% of a test population.
LC50	Medial lethal concentration of a substance required to kill 50% of a test population.
LDLo	Lowest known lethal dose
TDLo	Lowest known toxic dose
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
RTECS	Registry of Toxic Effects of Chemical Substances

16.3 Further Information

Copyright 2015. Toronto Research Chemicals Inc. Copies may be made for internal use only. The above information is believed to be correct to the best of our knowledge, but is to be only used as a guide. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Please take all due care when handling this product.