

# 2-Amino-2-methylpropanenitrile

sc-209001



The Power is Question

Material Safety Data Sheet

Hazard Alert Code Key:

EXTREME

HIGH

MODERATE

LOW

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

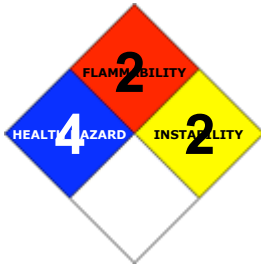
### PRODUCT NAME

2-Amino-2-methylpropanenitrile

### STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

### NFPA



### SUPPLIER

Santa Cruz Biotechnology, Inc.  
2145 Delaware Avenue  
Santa Cruz, California 95060  
800.457.3801 or 831.457.3800

### EMERGENCY

ChemWatch  
Within the US & Canada: 877-715-9305  
Outside the US & Canada: +800 2436 2255  
(1-800-CHEMCALL) or call +613 9573 3112

### PRODUCT USE

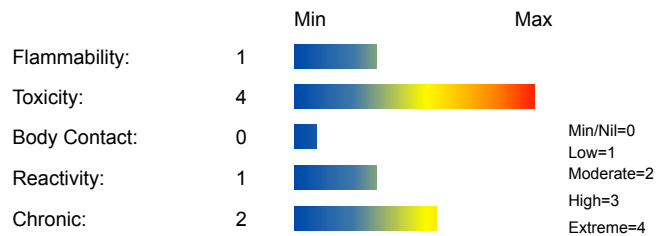
■ Intermediate.

### SYNONYMS

C4-H8-N2, 2-amino-2-methylpropanenitrile, 2-amino-2-methylpropionitrile, 2-aminoisobutyronitrile, 2-cyanoisopropylamine

## Section 2 - HAZARDS IDENTIFICATION

### CHEMWATCH HAZARD RATINGS



### CANADIAN WHMIS SYMBOLS



## EMERGENCY OVERVIEW

### RISK

Very toxic by inhalation.

Contact with acids liberates very toxic gas.

May cause long-term adverse effects in the environment.

### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

##### SWALLOWED

■ Accidental ingestion of the material may be severely damaging to the health of the individual; animal experiments indicate that ingestion of less than 5 gram may be fatal.

■ Nitrile poisoning exhibits similar symptoms to poisoning due to hydrogen cyanide.

The substances irritate the eyes and skin, and are absorbed quickly and completely through the skin.

■ Cyanide poisoning can cause increased saliva output, nausea without vomiting, anxiety, confusion, vertigo, dizziness, stiffness of the lower jaw, convulsions, spasm, paralysis, coma and irregular heartbeat, and stimulation of breathing followed by failure.

Often the skin becomes cyanosed (blue-gray), and this is often delayed.

##### EYE

■ Although the liquid is not thought to be an irritant, direct contact with the eye may produce transient discomfort characterized by tearing or conjunctival redness (as with windburn).

##### SKIN

■ The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis.

The material is unlikely to produce an irritant dermatitis as described in EC Directives .

■ Open cuts, abraded or irritated skin should not be exposed to this material.

■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.

Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

##### INHALED

■ Inhalation of vapors or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce severely toxic effects; these may be fatal.

■ The material is not thought to produce respiratory irritation (as classified using animal models).

Nevertheless inhalation of vapors, fumes or aerosols, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.

■ Inhalation hazard is increased at higher temperatures.

##### CHRONIC HEALTH EFFECTS

■ Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

Chronic exposure to cyanides and certain nitriles may result in interference to iodine uptake by thyroid gland and its consequent enlargement. This occurs following metabolic conversion of the cyanide moiety to thiocyanate.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
alpha-aminoisobutyronitrile	19355-69-2	>98

## Section 4 - FIRST AID MEASURES

##### SWALLOWED

· IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. · Where Medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

##### EYE

■ If this product comes in contact with the eyes: · Immediately hold eyelids apart and flush the eye continuously with running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

##### SKIN

■ If skin or hair contact occurs: · Flush skin and hair with running water (and soap if available). · Seek medical attention in event of irritation.

##### INHALED

· If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested.

##### NOTES TO PHYSICIAN

· Signs symptoms of acute cyanide poisoning reflect cellular hypoxia and are often non-specific.

· Cyanosis may be a late finding.

## Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG):	Not available
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Upper Explosive Limit (%):	Not available.
Specific Gravity (water=1):	0.886
Lower Explosive Limit (%):	Not available

#### **EXTINGUISHING MEDIA**

- Foam.
- Dry chemical powder.

#### **FIRE FIGHTING**

- Alert Emergency Responders and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 800 metres in all directions.

#### **GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS**

- Combustible.
- Slight fire hazard when exposed to heat or flame.

Combustion products include: carbon dioxide (CO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), other pyrolysis products typical of burning organic material. May emit poisonous fumes.

#### **FIRE INCOMPATIBILITY**

- Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

#### **PERSONAL PROTECTION**

Glasses:

Chemical goggles.

Gloves:

Respirator:

Type A-P Filter of sufficient capacity

### **Section 6 - ACCIDENTAL RELEASE MEASURES**

#### **MINOR SPILLS**

- Environmental hazard - contain spillage.
- Remove all ignition sources.
- Clean up all spills immediately.

#### **MAJOR SPILLS**

- Environmental hazard - contain spillage.
- Clear area of personnel and move upwind.
- Alert Emergency Responders and tell them location and nature of hazard.

### **Section 7 - HANDLING AND STORAGE**

#### **PROCEDURE FOR HANDLING**

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.

#### **RECOMMENDED STORAGE METHODS**

- Lined metal can, Lined metal pail/drum
- Plastic pail.

For low viscosity materials

- Drums and jerricans must be of the non-removable head type.
- Where a can is to be used as an inner package, the can must have a screwed enclosure.

All inner and sole packagings for substances that have been assigned to Packaging Groups I or II on the basis of inhalation toxicity criteria, must be hermetically sealed.

#### **STORAGE REQUIREMENTS**

- Store in original containers.
- Keep containers securely sealed.

### **Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

#### **EXPOSURE CONTROLS**

The following materials had no OELs on our records

- alpha-aminoisobutyronitrile: CAS:19355-69-2

#### **PERSONAL PROTECTION**



## RESPIRATOR

Type A-P Filter of sufficient capacity  
Consult your EHS staff for recommendations

## EYE

- Safety glasses with side shields
- Chemical goggles.

## HANDS/FEET

- Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:
  - frequency and duration of contact,
  - chemical resistance of glove material,
  - glove thickness and
  - dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

- Neoprene gloves.

Wear chemical protective gloves, eg. PVC.

## OTHER

- Overalls.
- Eyewash unit.

## ENGINEERING CONTROLS

- Local exhaust ventilation usually required. If risk of overexposure exists, wear an approved respirator.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### PHYSICAL PROPERTIES

Liquid.

Does not mix with water.

Floats on water.

Toxic or noxious vapours/gas.

Contact with acids liberates very toxic gas.

State	Liquid	Molecular Weight	84.12
Melting Range (°F)	Not available	Viscosity	Not Available
Boiling Range (°F)	266	Solubility in water (g/L)	Partly miscible
Flash Point (°F)	161.6	pH (1% solution)	Not applicable
Decomposition Temp (°F)	Not available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available	Vapour Pressure (mmHG)	Not available
Upper Explosive Limit (%)	Not available.	Specific Gravity (water=1)	0.886
Lower Explosive Limit (%)	Not available	Relative Vapor Density (air=1)	>1
Volatile Component (%vol)	Not available	Evaporation Rate	Not available

### APPEARANCE

Colourless liquid; does not mix well with water. Light-sensitive.

## Section 10 - CHEMICAL STABILITY

### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.

### STORAGE INCOMPATIBILITY

- Avoid strong acids.

- Nitriles may polymerize in the presence of metals and some metal compounds.
  - They are incompatible with acids; mixing nitriles with strong oxidizing acids can lead to extremely violent reactions.
  - The covalent cyano group is endothermic and many organic nitriles are reactive under certain conditions; N-cyano derivatives are reactive or unstable.
  - The majority of endothermic compounds are thermodynamically unstable and may decompose explosively under various circumstances of initiation.
  - Many but not all endothermic compounds have been involved in decompositions, reactions and explosions and, in general, compounds with significantly positive values of standard heats of formation, may be considered suspect on stability grounds.
- BRETHERRICK L.: Handbook of Reactive Chemical Hazards.  
 Avoid reaction with oxidizing agents, bases and strong reducing agents.  
 For incompatible materials - refer to Section 7 - Handling and Storage.

## Section 11 - TOXICOLOGICAL INFORMATION

ALPHA-AMINOISOBUTYRONITRILE

### TOXICITY AND IRRITATION

ALPHA-AMINOISOBUTYRONITRILE:

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY	IRRITATION
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Inhalation (Rat) LC50: 111 mg/m<sup>3</sup>/h

- No significant acute toxicological data identified in literature search.

## Section 12 - ECOLOGICAL INFORMATION

May cause long-term adverse effects in the environment.  
 This material and its container must be disposed of as hazardous waste.

### Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
alpha-aminoisobutyronitrile	HIGH	LOW	LOW	HIGH

## Section 13 - DISPOSAL CONSIDERATIONS

### US EPA Waste Number & Descriptions

A. General Product Information

Reactivity characteristic: use EPA hazardous waste number D003 (waste code R).

### Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

! Puncture containers to prevent re-use and bury at an authorized landfill.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult Waste Management Authority for disposal.

## Section 14 - TRANSPORTATION INFORMATION

DOT:

Symbols: G Hazard class or Division: 6.1

Identification Numbers: UN3276 PG: I

Label Codes: 6.1 Special provisions: 5, T14,

TP2, TP13,

TP27

Packaging: Exceptions: None Packaging: Non- bulk: 201

Packaging: Exceptions: None Quantity limitations: 1 L

Passenger aircraft/rail:

Quantity Limitations: Cargo 30 L Vessel stowage: Location: B

aircraft only:

Vessel stowage: Other: 52

Hazardous materials descriptions and proper shipping names:

Nitriles, toxic, liquid, n.o.s.

**Air Transport IATA:**

ICAO/IATA Class: 6.1 ICAO/IATA Subrisk: None

UN/ID Number: 3276 Packing Group: I

Special provisions: A3

Cargo Only

Packing Instructions: 604 Maximum Qty/Pack: 30 L

Passenger and Cargo Passenger and Cargo

Packing Instructions: 603 Maximum Qty/Pack: 1 L

Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity

Packing Instructions: - Maximum Qty/Pack: -

Shipping Name: NITRILES, TOXIC, LIQUID, N.O.S. \*(CONTAINS

ALPHA-AMINOISOBUTYRONITRILE)

**Maritime Transport IMDG:**

IMDG Class: 6.1 IMDG Subrisk: None

UN Number: 3276 Packing Group: I

EMS Number: F-A , S-A Special provisions: 274 315

Limited Quantities: 0

Shipping Name: NITRILES, TOXIC, LIQUID, N.O.S.

## Section 15 - REGULATORY INFORMATION

**alpha-aminoisobutyronitrile (CAS: 19355-69-2) is found on the following regulatory lists;**

"Canada Non-Domestic Substances List (NDSL)", "OECD Representative List of High Production Volume (HPV) Chemicals", "US EPA High Production Volume Program Chemical List", "US Toxic Substances Control Act (TSCA) - Inventory"

## Section 16 - OTHER INFORMATION

**ND**

Substance CAS Suggested codes alpha- aminoisobutyronitrile 19355- 69- 2

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■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net/references](http://www.chemwatch.net/references).

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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