

## MATERIAL SAFETY DATA SHEET

### 1 Identification of substance:

**Product Name:** 2-Chloro-3-fluorobenzonitrile

**Catalog Number:** sc-307364

**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

### 2 Hazards identification

**Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008**



GHS07

Acute Tox. 4 H302 Harmful if swallowed.  
Acute Tox. 4 H312 Harmful in contact with skin.  
Acute Tox. 4 H332 Harmful if inhaled.  
Skin Irrit. 2 H315 Causes skin irritation.  
Eye Irrit. 2 H319 Causes serious eye irritation.  
STOT SE 3 H335 May cause respiratory irritation.

**Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xn; Harmful

R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.



Xi; Irritant

R36/37/38: Irritating to eyes, respiratory system and skin.

**Information concerning particular hazards for human and environment:** Not applicable

#### Label elements

**Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.

#### Hazard pictograms



GHS07

#### Signal word Warning

#### Hazard statements

H302 Harmful if swallowed.  
H312 Harmful in contact with skin.  
H332 Harmful if inhaled.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.

#### Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P302+P352 IF ON SKIN: Wash with plenty of soap and water.  
P321 Specific treatment (see on this label).  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard description:**

**WHMIS classification**

D1B - Toxic material causing immediate and serious toxic effects

D2B - Toxic material causing other toxic effects



**Classification system**

**HMIS ratings (scale 0-4)**

(Hazardous Materials Identification System)

HEALTH	2
FIRE	1
REACTIVITY	1

Health (acute effects) = 2

Flammability = 1

Reactivity = 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:** (874781-08-5)

2-Chloro-3-fluorobenzonitrile

### 4 First aid measures

**Description of first aid measures**

**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** Seek medical treatment.

**Information for doctor**

**Most important symptoms and effects, both acute and delayed**

No further relevant information available.

**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

### 5 Firefighting 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 fluoride (HF)

Hydrogen cyanide (HCN)

Nitrogen oxides (NOx)

Hydrogen chloride (HCl)

**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

**Environmental precautions:**

Do not allow material to be released to the environment without proper governmental permits.

**Methods and material for containment and cleaning up:**

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

**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.

**Information about protection against explosions and fires:** No information known.

**Conditions for safe storage, including any incompatibilities**

**Storage** Store at room temperature.

**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.

**Specific end use(s)** No further relevant information available.

## 8 Exposure controls/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.

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

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

**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.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

**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.

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

**Information on basic physical and chemical properties****General Information****Appearance:**

**Form:** Solid

**Formula:** C7H3ClFN

**Weight:** 155.56

**pH-value:** Not applicable.

**Change in condition**

**Melting point/Melting range:** Not determined

**Boiling point/Boiling range:** Not determined

<i>Sublimation temperature / start:</i>	Not determined
<i>Flammability (solid, gaseous)</i>	Not determined.
<i>Ignition temperature:</i>	Not determined
<i>Decomposition temperature:</i>	Not determined
<i>Auto igniting:</i>	Not determined.
<i>Explosion limits:</i>	
<i>Lower:</i>	Not determined
<i>Upper:</i>	Not determined
<i>Vapor pressure:</i>	Not applicable.
<i>Density:</i>	Not determined
<i>Relative density</i>	Not determined.
<i>Vapor density</i>	Not applicable.
<i>Evaporation rate</i>	Not applicable.
<i>Segregation coefficient (n-octanol/water):</i>	Not determined.
<i>Viscosity:</i>	
<i>dynamic:</i>	Not applicable.
<i>kinematic:</i>	Not applicable.
<i>Other information</i>	No further relevant information available.

## 10 Stability and reactivity

### *Reactivity*

#### *Chemical stability*

#### *Thermal decomposition / conditions to be avoided:*

Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions** No dangerous reactions known

**Incompatible materials:** Oxidizing agents

#### *Hazardous decomposition products:*

Carbon monoxide and carbon dioxide

Hydrogen fluoride

Hydrogen cyanide (prussic acid)

Nitrogen oxides

Hydrogen chloride (HCl)

## 11 Toxicological information

### *Information on toxicological effects*

#### *Acute toxicity:*

#### *Primary irritant effect:*

*on the skin:* Irritating effect.

*on the eye:* Irritating effect.

**Sensitization:** No sensitizing effects known.

**Other information (about experimental toxicology):** Irritating to respiratory system

**Subacute to chronic toxicity:** Harmful if inhaled.

#### *Additional toxicological information:*

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Danger through skin absorption.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

## 12 Ecological information

### *Toxicity*

**Aquatic toxicity:** No further relevant information available.

**Persistence and degradability** No further relevant information available.

#### *Behavior in environmental systems:*

**Bioaccumulative potential** No further relevant information available.

**Mobility in soil** No further relevant information available.

#### *Additional 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.

**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

<b>UN-Number</b>	
<b>DOT, ADR, IMDG, IATA</b>	UN3439
<b>UN proper shipping name</b>	
<b>DOT, IMDG, IATA</b>	NITRILES, TOXIC, SOLID, N.O.S. (2-Chloro-3-fluorobenzonitrile)
<b>ADR</b>	3439 NITRILES, TOXIC, SOLID, N.O.S. (2-Chloro-3-fluorobenzonitrile)
<b>Transport hazard class(es)</b>	
<b>DOT</b>	
	
<b>Class Label</b>	6.1 Toxic substances. 6.1
<b>ADR</b>	
	
<b>Class Label</b>	6.1 (T2) Toxic substances 6.1
<b>IMDG, IATA</b>	
	
<b>Class Label</b>	6.1 Toxic substances. 6.1
<b>Packing group</b>	
<b>DOT, ADR, IMDG, IATA</b>	III
<b>Environmental hazards:</b>	
<b>Marine pollutant:</b>	No
<b>Special precautions for user</b>	Warning: Toxic substances
<b>Danger code (Kemler):</b>	60
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>UN "Model Regulation":</b>	UN3439, NITRILES, TOXIC, SOLID, N.O.S. (2-Chloro-3-fluorobenzonitrile), 6.1, III

## **15 Regulatory information**

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

**National regulations**

*This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only.*

*Some or all of the components of this product are not listed on the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).*

**Information about limitation of use:** For use only by technically qualified individuals.

**Other regulations, limitations and prohibitive regulations**

*Substances of very high concern (SVHC) according to REACH, Article 57 Substance is not listed.*

*REACH - Pre-registered substances Substance is not listed.*

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## **16 Other information:**

*The above information is believed to be correct but does not purport to be complete and should be used only as a guide. The burden of safe use of this material rests entirely with the user.*

11/27/2013