

# myo-Inositol

sc-202714



The Power is Question

## Material Safety Data Sheet

Hazard Alert Code  
Key:

EXTREME

HIGH

MODERATE

LOW

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

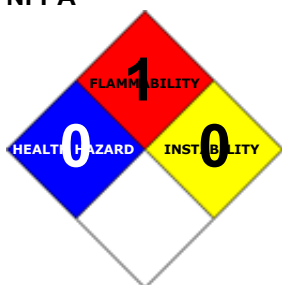
### PRODUCT NAME

myo-Inositol

### STATEMENT OF HAZARDOUS NATURE

Not considered a hazardous substance according to OSHA 29 CFR 1910.1200.

### NFPA



### SUPPLIER

Company: Santa Cruz Biotechnology, Inc.

Address:

2145 Delaware Ave

Santa Cruz, CA 95060

Telephone: 800.457.3801 or 831.457.3800

Emergency Tel: CHEMWATCH: From within the US and  
Canada: 877-715-9305

Emergency Tel: From outside the US and Canada: +800 2436  
2255 (1-800-CHEMCALL) or call +613 9573 3112

### PRODUCT USE

Inositol is used in medicine, nutrition. Inositol is a constituent of body tissues and is a growth factor in some animals.

### SYNONYMS

C6-H12-O6, hexahydroxycyclohexane, myo-inositol, i-inositol, meso-inositol, cyclo-hexane-hexol, cyclohexitol, "meat sugar", inosite, "calbiochem 4071"

## Section 2 - HAZARDS IDENTIFICATION

### CANADIAN WHMIS SYMBOLS

None

### EMERGENCY OVERVIEW

#### RISK

### POTENTIAL HEALTH EFFECTS

### ACUTE HEALTH EFFECTS

### SWALLOWED

- Although ingestion is not thought to produce harmful effects, the material may still be damaging to the health of the individual following ingestion, especially where pre-existing organ (e.g. liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality (death) rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

- Considered an unlikely route of entry in commercial/industrial environments.

### EYE

- Although the material 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).

- The dust may produce eye discomfort causing smarting, pain and redness.

### SKIN

■ The material is not thought to produce adverse health effects or skin irritation following contact (as classified using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

#### **INHALED**

■ The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

■ Not normally a hazard due to non-volatile nature of product.

■ Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

#### **CHRONIC HEALTH EFFECTS**

■ Principal routes of exposure are usually by inhalation of generated dust and eye contact.

No human exposure data available. For this reason health effects described are based on experience with chemically related materials.

As with any chemical product, contact with unprotected bare skin; inhalation of vapor, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.

### **Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS**

#### **HAZARD RATINGS**

|               | Min | Max |   |
|---------------|-----|-----|---|
| Flammability: | 1   |     |   |
| Toxicity:     | 0   |     |   |
| Body Contact: | 1   |     | Min/Nil=0<br>Low=1<br>Moderate=2<br>High=3<br>Extreme=4 |
| Reactivity:   | 1   |     |   |
| Chronic:      | 0   |     |   |

| NAME     | CAS RN  | %   |
|----------|---------|-----|
| inositol | 87-89-8 | >98 |

### **Section 4 - FIRST AID MEASURES**

#### **SWALLOWED**

- 
- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Center or a doctor.

#### **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.
  - Continue flushing until advised to stop by the Poisons Information Center or a doctor, or for at least 15 minutes.
  - Transport to hospital or doctor without delay.
  - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

#### **SKIN**

- If skin contact occurs:
  - Immediately remove all contaminated clothing, including footwear
  - Flush skin and hair with running water (and soap if available).
  - Seek medical attention in event of irritation.

#### **INHALED**

- 
- If dust is inhaled, remove from contaminated area.
- Encourage patient to blow nose to ensure clear passage of breathing.
- If irritation or discomfort persists seek medical attention.

#### **NOTES TO PHYSICIAN**

- Treat symptomatically.

### **Section 5 - FIRE FIGHTING MEASURES**

|                             |                |
|-----------------------------|----------------|
| Vapour Pressure (mmHG):     | Not applicable |
| Upper Explosive Limit (%):  | Not available. |
| Specific Gravity (water=1): | 1.52-1.75      |
| Lower Explosive Limit (%):  | Not available. |

#### **EXTINGUISHING MEDIA**

- There is no restriction on the type of extinguisher which may be used.

#### **FIRE FIGHTING**

- Alert Emergency Responders and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves for fire only.
- May be washed to drain with large quantities of water.

Use water delivered as a fine spray to control the fire and cool adjacent area.

Use fire fighting procedures suitable for surrounding area.

Equipment should be thoroughly decontaminated after use.

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

- Combustible.

Burns at high temperatures.

Decomposes on heating and produces toxic fumes of: carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO).

May emit clouds of acrid smoke NOTE: Burns with intense heat. Produces melting, flowing, burning liquid and dense acrid black smoke.

### **FIRE INCOMPATIBILITY**

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

### **PERSONAL PROTECTION**

Glasses:

Full face- shield.

Gloves:

Respirator:

Particulate

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

### **MINOR SPILLS**

- 
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Wear protective clothing, gloves, safety glasses and dust respirator.
- Use dry clean up procedures and avoid generating dust.
- Sweep up or vacuum up (consider explosion-proof machines designed to be grounded during storage and use).
- Place in clean drum then flush area with water.

### **MAJOR SPILLS**

- 
- Clear area of personnel and move upwind.
- Alert Emergency Responders and tell them location and nature of hazard.
- Control personal contact by using protective equipment and dust respirator.
- Prevent spillage from entering drains, sewers or water courses.
- Avoid generating dust.
- Sweep, shovel up.
- Recover product wherever possible.
- Put residues in labeled plastic bags or other containers for disposal.
- If contamination of drains or waterways occurs, advise emergency services.

### **ACUTE EXPOSURE GUIDELINE LEVELS (AEGL) (in ppm)**

AEGL 1: The airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic nonsensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure.

AEGL 2: The airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape.

AEGL 3: The airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience life-threatening health effects or death.

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

### **PROCEDURE FOR HANDLING**

- 
- Limit all unnecessary personal contact.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- When handling DO NOT eat, drink or smoke.
- Always wash hands with soap and water after handling.
- Avoid physical damage to containers.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.

### **RECOMMENDED STORAGE METHODS**

- 
- Check that containers are clearly labeled

Packaging as recommended by manufacturer.

Glass container.

Plastic container.

Polylined drum.

Multi-ply woven plastic or paper bag with sealed plastic liner

NOTE: Bags should be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse.

### STORAGE REQUIREMENTS

- 
- Keep dry.
- Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials.
- Protect containers against physical damage.
- Check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

### SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



X: Must not be stored together

O: May be stored together with specific preventions

+: May be stored together

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

| Source   | Material  | TWA ppm | TWA mg/m <sup>3</sup> | STEL ppm | STEL mg/m <sup>3</sup> | Peak ppm | Peak mg/m <sup>3</sup> | TWA F/CC | Notes |
|--|---|---------|-----------------------|----------|------------------------|----------|------------------------|----------|-------|
| US - Oregon Permissible Exposure Limits (Z3)                                     | inositol (Inert or Nuisance Dust: (d) Total dust)                             |         | 10                    |          |                        |          |                        |          | *     |
| US OSHA Permissible Exposure Levels (PELs) - Table Z3                            | inositol (Inert or Nuisance Dust: (d) Respirable fraction)                    |         | 5                     |          |                        |          |                        |          |       |
| US OSHA Permissible Exposure Levels (PELs) - Table Z3                            | inositol (Inert or Nuisance Dust: (d) Total dust)                             |         | 15                    |          |                        |          |                        |          |       |
| US - Hawaii Air Contaminant Limits   | inositol (Particulates not otherwise regulated - Total dust)                  |         | 10                    |          |                        |          |                        |          |       |
| US - Hawaii Air Contaminant Limits   | inositol (Particulates not otherwise regulated - Respirable fraction)         |         | 5                     |          |                        |          |                        |          |       |
| US - Oregon Permissible Exposure Limits (Z3)                                     | inositol (Inert or Nuisance Dust: (d) Respirable fraction)                    |         | 5                     |          |                        |          |                        |          | *     |
| US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants        | inositol (Particulates not otherwise regulated Respirable fraction)           |         | 5                     |          |                        |          |                        |          |       |
| US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants | inositol (Particulates not otherwise regulated (PNOR)(f)-Respirable fraction) |         | 5                     |          |                        |          |                        |          |       |
| US - Michigan Exposure Limits for Air Contaminants                               | inositol (Particulates not otherwise regulated, Respirable dust)              |         | 5                     |          |                        |          |                        |          |       |

### MATERIAL DATA

INOSITOL:

■ These "dusts" have little adverse effect on the lungs and do not produce toxic effects or organic disease. Although there is no dust which does not evoke some cellular response at sufficiently high concentrations, the cellular response caused by P.N.O.C.s has the following characteristics:

- the architecture of the air spaces remain intact,
- scar tissue (collagen) is not synthesised to any degree,
- tissue reaction is potentially reversible.

Extensive concentrations of P.N.O.C.s may:

- seriously reduce visibility,
- cause unpleasant deposits in the eyes, ears and nasal passages,
- contribute to skin or mucous membrane injury by chemical or mechanical action, per se, or by the rigorous skin cleansing procedures necessary for their removal. [ACGIH]

This limit does not apply:

- to brief exposures to higher concentrations
- nor does it apply to those substances that may cause physiological impairment at lower concentrations but for which a TLV has as yet to be determined.

This exposure standard applies to particles which

- are insoluble or poorly soluble\* in water or, preferably, in aqueous lung fluid (if data is available) and
- have a low toxicity (i.e.. are not cytotoxic, genotoxic, or otherwise chemically reactive with lung tissue, and do not emit ionizing radiation, cause immune sensitization, or cause toxic effects other than by inflammation or by a mechanism of lung overload)

## PERSONAL PROTECTION



Consult your EHS staff for recommendations

### EYE

- Safety glasses with side shields.
- Chemical goggles.
- Full face shield.
- Contact lenses pose a special hazard; soft contact lenses may absorb irritants and all lenses concentrate them.

### HANDS/FEET

- Wear general protective gloves: i.e. Disposable polythene gloves or Cotton gloves or Light weight rubber gloves, with Barrier cream preferably Safety footwear.

### OTHER

- Overalls.
- Eyewash unit.
- Barrier cream.
- Skin cleansing cream.

### RESPIRATOR

| Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|-------------------|----------------------|----------------------|------------------------|
| 10 x PEL          | P1<br>Air-line*      | -                    | PAPR-P1                |
| 50 x PEL          | Air-line**           | P2                   | PAPR-P2                |
| 100 x PEL         | -                    | P3<br>Air-line*      | -                      |
| 100+ x PEL        | -                    | Air-line**           | PAPR-P3                |

\* - Negative pressure demand \*\* - Continuous flow

Explanation of Respirator Codes:

Class 1 low to medium absorption capacity filters.

Class 2 medium absorption capacity filters.

Class 3 high absorption capacity filters.

PAPR Powered Air Purifying Respirator (positive pressure) cartridge.

Type A for use against certain organic gases and vapors.

Type AX for use against low boiling point organic compounds (less than 65°C).

Type B for use against certain inorganic gases and other acid gases and vapors.

Type E for use against sulfur dioxide and other acid gases and vapors.

Type K for use against ammonia and organic ammonia derivatives

Class P1 intended for use against mechanically generated particulates of sizes most commonly encountered in industry, e.g. asbestos, silica.

Class P2 intended for use against both mechanically and thermally generated particulates, e.g. metal fume.

Class P3 intended for use against all particulates containing highly toxic materials, e.g. beryllium.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

Use appropriate NIOSH-certified respirator based on informed professional judgement. In conditions where no reasonable estimate of exposure can be made, assume the exposure is in a concentration IDLH and use NIOSH-certified full face pressure demand SCBA with a minimum service life of 30 minutes, or a combination full facepiece pressure demand SAR with auxiliary self-contained air supply. Respirators provided only for escape from IDLH atmospheres shall be NIOSH-certified for escape from the atmosphere in which they will be used.

### ENGINEERING CONTROLS

- General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear an approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

| Type of Contaminant:  | Air Speed:                  |
|---|-----------------------------|
| solvent, vapors, degreasing etc., evaporating from tank (in still air)  | 0.25-0.5 m/s (50-100 f/min) |
| aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation) | 0.5-1 m/s (100-200 f/min.)  |
| direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)  | 1-2.5 m/s (200-500 f/min)   |

grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion). 2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

| Lower end of the range                                    | Upper end of the range             |
|---|------------------------------------|
| 1: Room air currents minimal or favorable to capture      | 1: Disturbing room air currents    |
| 2: Contaminants of low toxicity or of nuisance value only | 2: Contaminants of high toxicity   |
| 3: Intermittent, low production.                          | 3: High production, heavy use      |
| 4: Large hood or large air mass in motion                 | 4: Small hood - local control only |

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### PHYSICAL PROPERTIES

Solid.

Mixes with water.

|                           |                   |                                |                |
|---------------------------|-------------------|--------------------------------|----------------|
| State                     | Divided solid     | Molecular Weight               | 180.2          |
| Melting Range (°F)        | 435.2- 440.6      | Viscosity                      | Not available  |
| Boiling Range (°F)        | Not available.    | Solubility in water (g/L)      | Miscible       |
| Flash Point (°F)          | Not applicable    | pH (1% solution)               | 7              |
| Decomposition Temp (°F)   | 419- 420.8 dehydr | pH (as supplied)               | Not applicable |
| Autoignition Temp (°F)    | Not available.    | Vapour Pressure (mmHG)         | Not applicable |
| Upper Explosive Limit (%) | Not available.    | Specific Gravity (water=1)     | 1.52-1.75      |
| Lower Explosive Limit (%) | Not available.    | Relative Vapor Density (air=1) | Not applicable |
| Volatile Component (%vol) | Not applicable    | Evaporation Rate               | Not applicable |

### APPEARANCE

White crystals, soluble in water. Odourless and sweet taste. Available in anhydrous and hydrated form. There are nine isomeric forms of inositol. Only myo-inositol - cis 1,2,3,5-trans-4,6-hexahydroxycyclohexane has vitamin activity.

## Section 10 - CHEMICAL STABILITY

### CONDITIONS CONTRIBUTING TO INSTABILITY

- 
- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerization will not occur.

### STORAGE INCOMPATIBILITY

- Avoid reaction with oxidizing agents.
- Avoid strong acids, bases.

For incompatible materials - refer to Section 7 - Handling and Storage.

## Section 11 - TOXICOLOGICAL INFORMATION

inositol

### TOXICITY AND IRRITATION

- Not available. Refer to individual constituents.

## Section 12 - ECOLOGICAL INFORMATION

Refer to data for ingredients, which follows:  
INOSITOL:

### Ecotoxicity

|            |                         |                  |                 |          |
|------------|-------------------------|------------------|-----------------|----------|
| Ingredient | Persistence: Water/Soil | Persistence: Air | Bioaccumulation | Mobility |
| inositol   | LOW                     |                  | LOW             | HIGH     |

## Section 13 - DISPOSAL CONSIDERATIONS

### Disposal Instructions

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

|

- Recycle wherever possible or consult manufacturer for recycling options.
- Dilute with water and flush to sewer.
- Decontaminate empty containers with water.
- Recycle containers if possible, or dispose of in authorized landfill.

## Section 14 - TRANSPORTATION INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: DOT, IATA, IMDG

## Section 15 - REGULATORY INFORMATION

**inositol (CAS: 87-89-8) is found on the following regulatory lists;**

"Canada Domestic Substances List (DSL)", "US Food Additive Database", "US Toxic Substances Control Act (TSCA) - Inventory"

## Section 16 - OTHER INFORMATION

*Reasonable care has been taken in the preparation of this information, but the author makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The author makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. For additional technical information please call our toxicology department on +800 CHEMCALL.*

■ Classification of the mixture 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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