

# N,N'-Diacetyl-L-cystine

sc-212323

Material Safety Data Sheet



The Power to Question

Hazard Alert Code Key: **EXTREME** **HIGH** **MODERATE** **LOW**

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

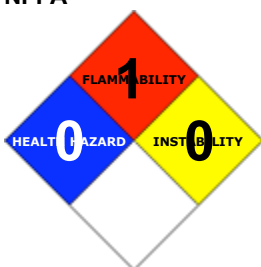
### PRODUCT NAME

N,N'-Diacetyl-L-cystine

### 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

### SYNONYMS

C10-H16-N2-O6-S2, "L-cystine, N, N' -diacetyl-", "cystine, N, N' -diacetyl-, L-", "cystine, N, N-diacetyl-", "N, N' -diacetylcystine", "acetylcysteine impurity"

## Section 2 - HAZARDS IDENTIFICATION

### CHEMWATCH HAZARD RATINGS

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

### 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.

■ 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.

#### CHRONIC HEALTH EFFECTS

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

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

NAME	CAS RN	%
N,N'-diacetyl-L-cystine	5545-17-5	>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 eyes: · Wash out immediately with water. · If irritation continues, seek medical attention.

##### SKIN

■ If skin contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

##### 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

Upper Explosive Limit (%):	Not available.
Specific Gravity (water=1):	Not available
Lower Explosive Limit (%):	Not available
Relative Vapor Density (air=1):	>1

#### EXTINGUISHING MEDIA

· Water spray or fog.

· Foam.

#### FIRE FIGHTING

- Alert Emergency Responders and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves for fire only.

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

- Solid which exhibits difficult combustion or is difficult to ignite.
- Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.

Combustion products include: carbon monoxide (CO), sulfur oxides (SO<sub>x</sub>), ammonia and nitrogen oxides (NO<sub>x</sub>).

#### **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:

Particulate

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

#### **MINOR SPILLS**

- Clean up all spills immediately.
- Avoid contact with skin and eyes.

#### **MAJOR SPILLS**

- 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 generating and breathing dust.
- Limit all unnecessary personal contact.
- Wear protective clothing when risk of exposure occurs.

#### **RECOMMENDED STORAGE METHODS**

- Glass container.

Plastic container.

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.

- Check that containers are clearly labeled.

Packaging as recommended by manufacturer.

#### **STORAGE REQUIREMENTS**

- 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 and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

## **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 (Z-3)	N,N'-diacetyl-L-cystine (Inert or Nuisance Dust: (d) Total dust)		10						Oregon Permissible Exposure Limits (PELs) are different than the federal limits.

US OSHA Permissible Exposure Levels (PELs) - Table Z3	N,N'-diacetyl- L-cystine (Inert or Nuisance Dust: (d) Respirable fraction)	5	
US OSHA Permissible Exposure Levels (PELs) - Table Z3	N,N'-diacetyl- L-cystine (Inert or Nuisance Dust: (d) Total dust)	15	
US - Hawaii Air Contaminant Limits	N,N'-diacetyl- L-cystine (Particulates not other wise regulated - Total dust)	10	
US - Hawaii Air Contaminant Limits	N,N'-diacetyl- L-cystine (Particulates not other wise regulated - Respirable fraction)	5	
US - Oregon Permissible Exposure Limits (Z-3)	N,N'-diacetyl- L-cystine (Inert or Nuisance Dust:(d) Respirable fraction)	5	Oregon Permissible Exposure Limits (PELs) are different than the federal limits.
Canada - Ontario Occupational Exposure Limits	N,N'-diacetyl- L-cystine (Particles (Insoluble or Poorly Soluble) Not Otherwise)	10 (I)	
Canada - British Columbia Occupational Exposure Limits	N,N'-diacetyl- L-cystine (Particles (Insoluble or Poorly Soluble) Not Otherwise Classified (PNOC))	10 (N)	
Canada - Ontario Occupational Exposure Limits	N,N'-diacetyl- L-cystine (Specified (PNOS) / Particules (insolubles ou peu solubles) non précisées par ailleurs)	3 (R)	
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	N,N'-diacetyl- L-cystine (Particulates not otherwise regulated Respirable fraction)	5	
US - California Permissible Exposure Limits for Chemical Contaminants	N,N'-diacetyl- L-cystine (Particulates not otherwise regulated	5	(n)

Respirable fraction)				<p>Bold print identifies substances for which the Oregon Permissible Exposure Limits (PELs) are different than the federal Limits. PNOR means “particles not otherwise regulated.”</p>
US - Oregon Permissible Exposure Limits (Z-1)	N,N'-diacetyl-L-cystine (Particulates not otherwise regulated (PNOR) (f) Total Dust)	-	10	
US - Michigan Exposure Limits for Air Contaminants	N,N'-diacetyl-L-cystine (Particulates not otherwise regulated, Respirable dust)		5	
US - Oregon Permissible Exposure Limits (Z-1)	N,N'-diacetyl-L-cystine (Particulates not otherwise regulated (PNOR) (f) Respirable Fraction)	-	5	
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	N,N'-diacetyl-L-cystine (Particulates not otherwise regulated (PNOR)(f)-Respirable fraction)		5	
Canada - Prince Edward Island Occupational Exposure Limits	N,N'-diacetyl-L-cystine (Particles (Insoluble or Poorly Soluble) [NOS] Inhalable particles)		10	<p>See Appendix B current TLV/BEI Book</p>

ENDOELTABLE

## PERSONAL PROTECTION



## RESPIRATOR

- particulate.

## EYE

- Safety glasses with side shields
- Chemical goggles.

## 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.
- Barrier cream.

## ENGINEERING CONTROLS

- Use in a well-ventilated area.
- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### PHYSICAL PROPERTIES

Solid.

Mixes with water.

State	Divided solid	Molecular Weight	324.36
Melting Range (°F)	Not available	Boiling Range (°F)	Not available
Solubility in water (g/L)	Miscible	Flash Point (°F)	Not available
pH (1% solution)	Not available	Decomposition Temp (°F)	Not available.
pH (as supplied)	Not applicable	Autoignition Temp (°F)	Not available
Vapour Pressure (mmHG)	Negligible	Upper Explosive Limit (%)	Not available.
Specific Gravity (water=1)	Not available	Lower Explosive Limit (%)	Not available
Relative Vapor Density (air=1)	>1	Volatile Component (%vol)	Negligible
Evaporation Rate	Not applicable		

### APPEARANCE

Solid; mixes with water.

## Section 10 - CHEMICAL STABILITY

### CONDITIONS CONTRIBUTING TO INSTABILITY

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

### STORAGE INCOMPATIBILITY

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

Incompatible with heavy metal salts.

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

## Section 11 - TOXICOLOGICAL INFORMATION

N,N'-diacetyl-L-cystine

### TOXICITY AND IRRITATION

#### N,N'-DIACETYL-L-CYSTINE:

- No significant acute toxicological data identified in literature search.

## Section 12 - ECOLOGICAL INFORMATION

No data

### Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
N,N'-diacetyl-L-cystine	HIGH	No Data Available	LOW	HIGH

## Section 13 - DISPOSAL CONSIDERATIONS

### Disposal Instructions

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

- Consult manufacturer for recycling options and recycle where possible .
- Consult Waste Management Authority for disposal.

## Section 14 - TRANSPORTATION INFORMATION

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

## Section 15 - REGULATORY INFORMATION

**N,N'-diacetyl-L-cystine (CAS: 5545-17-5) is found on the following regulatory lists;**

"US - Hawaii Air Contaminant Limits", "US - Oregon Permissible Exposure Limits (Z-3)", "US OSHA Permissible Exposure Levels (PELs) - Table Z3"

## 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 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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