

## MATERIAL SAFETY DATA SHEET

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Version 1.6

## Section 1 - Product and Company Information

Product Name	BISBENZIMIDE HOECHST NO 33342 TRIHYDROCHLORIDE
Product Number	B2261
Brand	SIAL
Company	Sigma-Aldrich
Address	3050 Spruce Street SAINT LOUIS MO 63103 US
Technical Phone:	800-325-5832
Fax:	800-325-5052
Emergency Phone:	314-776-6555

## Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
BISBENZIMIDE HOECHST NO 33342	23491-52-3	Yes
TRIHYDROCHLORIDE HYDRATE		

Ingredient Name	CAS #	Percent	SARA 313
THE FOLLOWING SUBSTANCES ARE PRESENT	None		
AS RESIDUAL COMPONENTS OF PRODUCTION.			
ACETONITRILE	75-05-8	<= 2	Yes

Formula C<sub>27</sub>H<sub>28</sub>N<sub>6</sub>O · 3HCl · xH<sub>2</sub>O

## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

Toxic (USA) Harmful (EU).

Toxic in contact with skin. Harmful by inhalation and if swallowed. Risk of serious damage to eyes.

This material can produce a cyanide-like effect. Target organ(s): Central nervous system. Liver.

## HMIS RATING

HEALTH: 2\*

FLAMMABILITY: 0

REACTIVITY: 1

## NFPA RATING

HEALTH: 2

FLAMMABILITY: 0

REACTIVITY: 1

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

## Section 4 - First Aid Measures

## ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

#### INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

#### DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

#### EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

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### Section 5 - Fire Fighting Measures

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#### FLASH POINT

N/A

#### AUTOIGNITION TEMP

N/A

#### FLAMMABILITY

N/A

#### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

#### FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.  
Specific Hazard(s): Emits toxic fumes under fire conditions.

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### Section 6 - Accidental Release Measures

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#### PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

#### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

#### METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

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### Section 7 - Handling and Storage

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#### HANDLING

User Exposure: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

#### STORAGE

Suitable: Keep tightly closed.  
Store at -20°C

#### SPECIAL REQUIREMENTS

Light sensitive.

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## Section 8 - Exposure Controls / PPE

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### ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

### PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

### GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

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## Section 9 - Physical/Chemical Properties

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Appearance	Physical State: Solid	
Property	Value	At Temperature or Pressure
Molecular Weight	562 AMU	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	N/A	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	N/A	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	N/A	
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	N/A	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

N/A = not available

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## Section 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Conditions of Instability: May discolor on exposure to light.

Materials to Avoid: Strong oxidizing agents.

#### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides, Hydrogen chloride gas.

#### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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### Section 11 - Toxicological Information

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#### ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: May cause eye irritation.

Inhalation: Material is irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion: Harmful if swallowed.

#### TARGET ORGAN(S) OR SYSTEM(S)

Liver. Kidneys. Central nervous system. Blood. Lungs.

#### SIGNS AND SYMPTOMS OF EXPOSURE

This material can produce a cyanide like effect. Always have a cyanide first-aid kit present when using this material. The onset of symptoms is generally delayed pending conversion to cyanide. Adverse effects may include nausea, vomiting, diarrhea, headache, dizziness, rashes and cyanosis. Other symptoms include mental excitement or depression, drowsiness, impaired perception, incoordination, stupor, coma, and death.

#### CONDITIONS AGGRAVATED BY EXPOSURE

Acetonitrile is metabolized in the liver to water, formic acid, and hydrogen cyanide. The cyanide is further metabolized to thiocyanate.

#### CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

#### CHRONIC EXPOSURE - MUTAGEN

Result: Scientific studies have indicated that this material has the capacity to bind to DNA and the potential to cause breaks in the DNA strand which lead to mutations. However, this material has not been listed as a Mutagen by an authoritative governmental source.

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### Section 12 - Ecological Information

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No data available.

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### Section 13 - Disposal Considerations

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#### APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

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### Section 14 - Transport Information

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DOT

Proper Shipping Name: None  
Non-Hazardous for Transport: This substance is  
considered to be non-hazardous for transport.

IATA

Non-Hazardous for Air Transport: Non-hazardous for air  
transport.

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Section 15 - Regulatory Information

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EU ADDITIONAL CLASSIFICATION

Symbol of Danger: Xn  
Indication of Danger: Harmful.  
R: 22-37/38  
Risk Statements: Harmful if swallowed. Irritating to respiratory  
system and skin.  
S: 36/37  
Safety Statements: Wear suitable protective clothing and gloves.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Toxic (USA) Harmful (EU).  
Risk Statements: Toxic in contact with skin. Harmful by  
inhalation and if swallowed. Risk of serious damage to eyes.  
Safety Statements: In case of contact with eyes, rinse  
immediately with plenty of water and seek medical advice. Wear  
suitable protective clothing, gloves, and eye/face protection.  
In case of accident or if you feel unwell, seek medical advice  
immediately (show the label where possible).  
US Statements: This material can produce a cyanide-like effect.  
Target organ(s): Central nervous system. Liver.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes  
NOTES: This product is or contains a component that is subject  
to SARA313 reporting requirements.

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in  
accordance with the hazard criteria of the CPR, and the MSDS  
contains all the information required by the CPR.  
DSL: Yes  
NDSL: No

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Section 16 - Other Information

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DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not  
purport to be all inclusive and shall be used only as a guide. The  
information in this document is based on the present state of our  
knowledge and is applicable to the product with regard to  
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