



# SZABO SCANDIC

Part of Europa Biosite

## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!  
See the following pages for more information!



### Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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# 2-Aminophthalylhydrazido-N-acetyl- $\beta$ -D-glucosaminide

sc-220702



The Power is Question

Material Safety Data Sheet

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

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

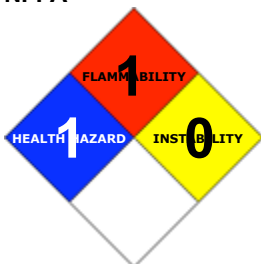
### PRODUCT NAME

2-Aminophthalylhydrazido-N-acetyl- $\beta$ -D-glucosaminide

### STATEMENT OF HAZARDOUS NATURE

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

Chemiluminogenic substrate for N-acetyl-beta-D-glucosaminidase.

### SYNONYMS

C16-H20-N4-O7

## Section 2 - HAZARDS IDENTIFICATION

### CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability:	1	
Toxicity:	2	
Body Contact:	2	
Reactivity:	1	
Chronic:	2	

Min/Nil=0  
Low=1  
Moderate=2  
High=3  
Extreme=4



### CANADIAN WHMIS SYMBOLS



## EMERGENCY OVERVIEW

### RISK

Harmful by inhalation, in contact with skin and if swallowed.

Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

Harmful to aquatic organisms.

### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

##### SWALLOWED

■ Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

■ Hydrazine (and some of its derivatives), is a strong convulsant in laboratory animals and can cause central nervous system (CNS) depression or stimulation. Symptoms of CNS depression may include nonspecific discomfort, giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal. CNS stimulation may produce dyspnea, coughing, bronchospasm, and laryngospasm. Muscular involvement may produce symptoms ranging from fasciculation to spasticity or seizures. Headache, dizziness and confusion may also result as can hyperpyrexia or a sensation of warmth. Other symptoms may include nausea, vomiting, diarrhoea and difficulty in urination. Cardiovascular involvement may produce alterations in blood pressure or arrhythmia.

Pulmonary oedema and cardiovascular collapse also seem to be a feature of acute hydrazine poisonings. Animals that survive for more than a day frequently develop liver necrosis and renal failure. As judged by a few severe poisonings, man reacts like monkey in the sense that liver injury is more severe than kidney failure. Severe hypoglycaemia may develop even earlier than liver necrosis although this is rarely mentioned in the literature.

##### EYE

■ Although the material is not thought to be an irritant, direct contact with the eye may cause transient discomfort characterized by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result. The material may produce foreign body irritation in certain individuals.

##### SKIN

■ Skin contact with the material may be harmful; systemic effects may result following absorption.

■ The material is not thought to be a skin irritant (as classified using animal models). Abrasive damage however, may result from prolonged exposures. Good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

■ 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 dusts, generated by the material, during the course of normal handling, may be harmful.

■ The material is not thought to produce respiratory irritation (as classified using animal models). Nevertheless inhalation of dusts, or fume, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.

■ Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo.

■ 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.

■ Symptoms of inhalation of hydrazine (and some of its derivatives), may include nausea and headache. Central nervous system (CNS) excitability may lead to convulsions and, in severe cases, respiratory arrest and death. Several instances of systemic poisoning, by hydrazine, have been reported in humans. These mainly involve the CNS, respiratory system and stomach. CNS stimulation may produce twitching of the extremities, clonic movements, hyperreflexia, convulsions and pyrexia; these may progress to lethargy, ataxia, confusion, coma and hypotension.

Oliguria, haematuria, hyperglycaemia and/ or hypoglycaemia and elevated LFTs are common. Leucocytosis, parasthaesia and peripheral neuropathies may be delayed for several days.

Respiratory (and dermal) exposure may produce deficits in concentration, comprehension, memory, task performance and mood status. Irritation of the mucous membranes may produce rhinitis, salivation, coughing, choking and dyspnoea.

■ Minor but regular methanol exposures may effect the central nervous system, optic nerves and retinae. Symptoms may be delayed, with headache, fatigue, nausea, blurring of vision and double vision. Continued or severe exposures may cause damage to optic nerves, which may become severe with permanent visual impairment even blindness resulting.

WARNING: Methanol is only slowly eliminated from the body and should be regarded as a cumulative poison which cannot be made non-harmful [CCINFO].

##### CHRONIC HEALTH EFFECTS

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

There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.

There is some evidence that inhaling this product is more likely to cause a sensitization reaction in some persons compared to the general population.

Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung. Prime symptom is breathlessness; lung shadows show on X-ray.

Long-term exposure to methanol vapor, at concentrations exceeding 3000 ppm, may produce cumulative effects characterized by gastrointestinal disturbances (nausea, vomiting), headache, ringing in the ears, insomnia, trembling, unsteady gait, vertigo, conjunctivitis and clouded or double vision. Liver and/or kidney injury may also result. Some individuals show severe eye damage following prolonged exposure to 800 ppm of the vapor.

When administered orally, hydrazine induced pulmonary adenomas and adenocarcinomas in mice. Inhalation induced lung carcinomas and lymphosarcomas of the spleen in female mice. A study of 423 men, involved in the manufacture of hydrazine revealed three stomach, one prostate and a neurogenic cancer.

### Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	128879-80-1	>90
commercial product may contain		
<a href="#">methanol</a>	67-56-1	5

### 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:
- For advice, contact a Poisons Information Center or a doctor.
- Urgent hospital treatment is likely to be needed.
- If conscious, give water to drink.
- INDUCE vomiting with fingers down the back of the throat, ONLY IF CONSCIOUS. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

NOTE: Wear a protective glove when inducing vomiting by mechanical means.

- In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.
- If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the MSDS should be provided. Further action will be the responsibility of the medical specialist.
- If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the MSDS.

#### EYE

■ If this product comes in contact with the eyes:

- Wash out immediately with fresh 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.
- If pain persists or recurs seek medical attention.
- 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 fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor.

#### NOTES TO PHYSICIAN

■ Treat symptomatically.

In poisonings involving hydrazine:

Correction of early hypoglycaemia, with large parenteral doses of pyridoxine appears to suppress convulsions and other neurological effects.

In man, hydrazine-induced hyperexcitability and coma may respond to massive doses of pyridoxine but there is no evidence that liver necrosis or damage can be prevented or corrected by this antidote.

GOSSELIN, SMITH & HODGE: Clinical Toxicology of Commercial Products, 5 th Ed.

For acute and short term repeated exposures to methanol:

- Toxicity results from accumulation of formaldehyde/formic acid.
- Clinical signs are usually limited to CNS, eyes and GI tract. Severe metabolic acidosis may produce dyspnea and profound systemic effects which may become intractable. All symptomatic patients should have arterial pH measured. Evaluate airway, breathing and circulation.
- Stabilise obtunded patients by giving naloxone, glucose and thiamine.
- Decontaminate with Ipecac or lavage for patients presenting 2 hours post-ingestion. Charcoal does not absorb well; the usefulness of cathartic is not established.
- Forced diuresis is not effective; hemodialysis is recommended where peak methanol levels exceed 50 mg/dL (this correlates with serum bicarbonate levels below 18 mEq/L)
- Ethanol, maintained at levels between 100 and 150 mg/dL, inhibits formation of toxic metabolites and may be indicated when peak methanol levels exceed 20 mg/dL. An intravenous solution of ethanol in D5W is optimal.
- Folate, as leucovorin, may increase the oxidative removal of formic acid. 4-methylpyrazole may be an effective adjunct in the treatment.
- Phenytoin may be preferable to diazepam for controlling seizure.

[Ellenhorn Barceloux: Medical Toxicology] BIOLOGICAL EXPOSURE INDEX - BEI

Determinant	Index	Sampling Time	Comment
1. Methanol in urine	15 mg/l	End of shift	B, NS
2. Formic acid in urine	80 mg/gm creatinine	Before the shift at end of workweek	B, NS

B: Background levels occur in specimens collected from subjects NOT exposed.

NS: Non-specific determinant - observed following exposure to other materials.

## Section 5 - FIRE FIGHTING MEASURES

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

### EXTINGUISHING MEDIA

- 
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

### FIRE FIGHTING

- 
- Alert Emergency Responders and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

### GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- 
- Combustible solid which burns but propagates flame with difficulty.
- 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.
- Dry dust can be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport.
- Build-up of electrostatic charge may be prevented by bonding and grounding.
- Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.

Combustion products include: carbon monoxide (CO), 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 AX-P Filter of sufficient capacity

## Section 6 - ACCIDENTAL RELEASE MEASURES

### MINOR SPILLS

■

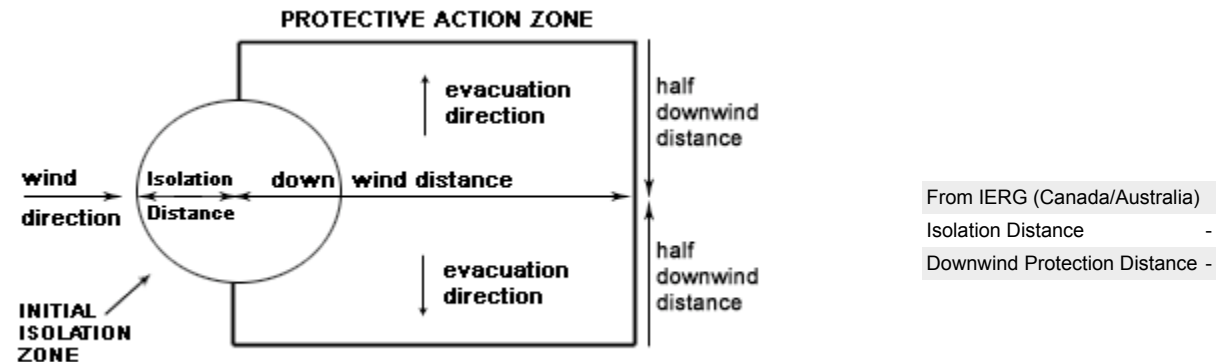
- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Control personal contact by using protective equipment.
- Use dry clean up procedures and avoid generating dust.
- Place in a suitable, labelled container for waste disposal.

### MAJOR SPILLS

■ Moderate hazard.

- CAUTION: Advise personnel in area.
- Alert Emergency Responders and tell them location and nature of hazard.
- Control personal contact by wearing protective clothing.
- Prevent, by any means available, spillage from entering drains or water courses.
- Recover product wherever possible.
- IF DRY: Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal. IF WET: Vacuum/shovel up and place in labelled containers for disposal.
- ALWAYS: Wash area down with large amounts of water and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

### PROTECTIVE ACTIONS FOR SPILL



From US Emergency Response Guide 2000 Guide No guide found.

### FOOTNOTES

1 PROTECTIVE ACTION ZONE is defined as the area in which people are at risk of harmful exposure. This zone assumes that random changes in wind direction confines the vapour plume to an area within 30 degrees on either side of the predominant wind direction, resulting in a crosswind protective action distance equal to the downwind protective action distance.

2 PROTECTIVE ACTIONS should be initiated to the extent possible, beginning with those closest to the spill and working away from the site in the downwind direction. Within the protective action zone a level of vapour concentration may exist resulting in nearly all unprotected persons becoming incapacitated and unable to take protective action and/or incurring serious or irreversible health effects.

3 INITIAL ISOLATION ZONE is determined as an area, including upwind of the incident, within which a high probability of localised wind reversal may expose nearly all persons without appropriate protection to life-threatening concentrations of the material.

4 SMALL SPILLS involve a leaking package of 200 litres (55 US gallons) or less, such as a drum (jerrican or box with inner containers). Larger packages leaking less than 200 litres and compressed gas leaking from a small cylinder are also considered "small spills". LARGE SPILLS involve many small leaking packages or a leaking package of greater than 200 litres, such as a cargo tank, portable tank or a "one-tonne" compressed gas cylinder.

5 Guide No guide found. is taken from the US DOT emergency response guide book.

6 IERG information is derived from CANUTEC - Transport Canada.

### 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.

### EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	5000ppm
--	---------

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	1000ppm
--	---------

other than mild, transient adverse effects without perceiving a clearly defined odour is:

o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	200ppm
--	--------

American Industrial Hygiene Association (AIHA)

Ingredients considered according exceed the following cutoffs

Very Toxic (T+)	>= 0.1%	Toxic (T)	>= 3.0%
R50	>= 0.25%	Corrosive (C)	>= 5.0%
R51	>= 2.5%		
else	>= 10%		

where percentage is percentage of ingredient found in the mixture

## Section 7 - HANDLING AND STORAGE

### PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
  - Wear protective clothing when risk of exposure occurs.
  - Use in a well-ventilated area.
  - Prevent concentration in hollows and sumps.
  - DO NOT enter confined spaces until atmosphere has been checked.
  - DO NOT allow material to contact humans, exposed food or food utensils.
  - Avoid contact with incompatible materials.
  - When handling, DO NOT eat, drink or smoke.
  - Keep containers securely sealed when not in use.
  - Avoid physical damage to containers.
  - Always wash hands with soap and water after handling.
  - Work clothes should be laundered separately.
  - Launder contaminated clothing before re-use.
  - Use good occupational work practice.
  - Observe manufacturer's storing and handling recommendations.
  - Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
- Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.
- Do NOT cut, drill, grind or weld such containers.
  - In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

### RECOMMENDED STORAGE METHODS

- Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

### STORAGE REQUIREMENTS

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

### 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
Canada - British Columbia Occupational Exposure Limits	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methanol)	200		250					Skin
Canada - Ontario Occupational Exposure Limits	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methanol)	200	260	250	325				Skin
US - Minnesota Permissible Exposure Limits (PELs)	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methyl alcohol)	200	260	250	325				
US ACGIH Threshold Limit Values (TLV)	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methanol)	200		250					TLV Basis: headache; eye damage. BEI
US NIOSH Recommended Exposure Limits (RELs)	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methyl alcohol)	200	260	250	325				[skin]
Canada - Alberta Occupational Exposure Limits	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methanol (Methyl alcohol))	200	262	250	328				
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methyl alcohol)	200	260	250	325				
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methyl alcohol)	200	260						
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methyl alcohol)	200	260	250	310				



US - California Permissible Exposure Limits for Chemical Contaminants	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methyl alcohol; methanol)	200	260	250	325	1000	
US - Idaho - Limits for Air Contaminants	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methyl alcohol)	200	260				
US - Hawaii Air Contaminant Limits	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methyl alcohol (methanol))	200	260	250	325		
US - Alaska Limits for Air Contaminants	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methyl alcohol (Methanol))	200	260	250	310		
US - Michigan Exposure Limits for Air Contaminants	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methyl alcohol)	200	260	250	325		
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methyl alcohol (methanol) - Skin)	200	260	250	310		
US - Washington Permissible exposure limits of air contaminants	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methanol (Methyl alcohol))	200		250			
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methyl alcohol (methanol))	200		250			Skin
US - Oregon Permissible Exposure Limits (Z-1)	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methyl alcohol (methanol))	200	260				
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methyl alcohol)	200	260				
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methyl alcohol)	200	262	250	328		
US OSHA Permissible Exposure Levels (PELs) - Table Z1	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methyl alcohol)	200	260				
Canada - Northwest Territories Occupational Exposure Limits (English)	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methyl alcohol (Methanol) - Skin)	200	262	250	328		
Canada - Nova Scotia Occupational Exposure Limits	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methanol)	200		250			TLV Basis: headache; eye damage. BEI
Canada - Prince Edward Island Occupational Exposure Limits	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Methanol)	200		250			TLV Basis: headache; eye damage. BEI
US OSHA Permissible Exposure Levels (PELs) - Table Z3	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Inert or Nuisance Dust: (d) Respirable fraction)			5			
US OSHA Permissible Exposure Levels (PELs) - Table Z3	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Inert or Nuisance Dust: (d) Total dust)			15			

US - Oregon Permissible Exposure Limits (Z-3)	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Inert or Nuisance Dust: Respirable fraction)	5						(d)
US - Oregon Permissible Exposure Limits (Z-3)	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (Inert or Nuisance Dust: Total dust)	10						(d)
Canada - British Columbia Occupational Exposure Limits	methanol (Methanol)	200	250					Skin
Canada - Ontario Occupational Exposure Limits	methanol (Methanol)	200	260	250	325			Skin
US - Minnesota Permissible Exposure Limits (PELs)	methanol (Methyl alcohol)	200	260	250	325			
US ACGIH Threshold Limit Values (TLV)	methanol (Methanol)	200		250				TLV Basis: headache; eye damage. BEI
US NIOSH Recommended Exposure Limits (RELs)	methanol (Methyl alcohol)	200	260	250	325			[skin]
Canada - Alberta Occupational Exposure Limits	methanol (Methanol (Methyl alcohol))	200	262	250	328			
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	methanol (Methyl alcohol)	200	260	250	325			
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	methanol (Methyl alcohol)	200	260					
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	methanol (Methyl alcohol)	200	260	250	310			
US - California Permissible Exposure Limits for Chemical Contaminants	methanol (Methyl alcohol; methanol)	200	260	250	325	1000		
US - Idaho - Limits for Air Contaminants	methanol (Methyl alcohol)	200	260					
US - Hawaii Air Contaminant Limits	methanol (Methyl alcohol (methanol))	200	260	250	325			
US - Alaska Limits for Air Contaminants	methanol (Methyl alcohol (Methanol))	200	260	250	310			
US - Michigan Exposure Limits for Air Contaminants	methanol (Methyl alcohol)	200	260	250	325			
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	methanol (Methyl alcohol (methanol) - Skin)	200	260	250	310			
US - Washington Permissible exposure limits of air contaminants	methanol (Methanol (Methyl alcohol))	200		250				
Canada - Saskatchewan Occupational Health and Safety Regulations -	methanol (Methyl alcohol (methanol))	200		250				Skin

Contamination Limits

US - Oregon Permissible Exposure Limits (Z-1)	methanol (Methyl alcohol (methanol))	200	260			
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	methanol (Methyl alcohol)	200	260			
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	methanol (Methyl alcohol)	200	262	250	328	
US OSHA Permissible Exposure Levels (PELs) - Table Z1	methanol (Methyl alcohol)	200	260			
Canada - Northwest Territories Occupational Exposure Limits (English)	methanol (Methyl alcohol (Methanol) - Skin)	200	262	250	328	
Canada - Nova Scotia Occupational Exposure Limits	methanol (Methanol)	200		250		TLV Basis: headache; eye damage. BEI
Canada - Prince Edward Island Occupational Exposure Limits	methanol (Methanol)	200		250		TLV Basis: headache; eye damage. BEI

EMERGENCY EXPOSURE LIMITS

Material	o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide					
Original IDLH Value (ppm)	methanol					
Original IDLH Value (ppm)						

**MATERIAL DATA**

METHANOL:

O-AMINOPHTHALYLHYDRAZIDO-N-ACETYL-BETA-D-GLUCOSAMINIDE:

■ For methanol:

Odour Threshold Value: 4.2-5960 ppm (detection), 53.0-8940 ppm (recognition)

NOTE: Detector tubes for methanol, measuring in excess of 50 ppm, are commercially available.

Exposure at or below the recommended TLV-TWA is thought to substantially reduce the significant risk of headache, blurred vision and other ocular and systemic effects.

Odour Safety Factor (OSF)

OSF=2 (METHANOL).

**PERSONAL PROTECTION**



Consult your EHS staff for recommendations

**EYE**

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

**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.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.

- polychloroprene
- nitrile rubber
- butyl rubber
- fluorocautchouc
- polyvinyl chloride

Gloves should be examined for wear and/ or degradation constantly.

## OTHER

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

## RESPIRATOR

- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory . These may be government mandated or vendor recommended.
- Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- Use approved positive flow mask if significant quantities of dust becomes airborne.
- Try to avoid creating dust conditions.

## RESPIRATOR

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

- 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.
- If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered. Such protection might consist of:

(a): particle dust respirators, if necessary, combined with an absorption cartridge;

(b): filter respirators with absorption cartridge or canister of the right type;

(c): fresh-air hoods or masks

- Build-up of electrostatic charge on the dust particle, may be prevented by bonding and grounding.
- Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to efficiently remove the contaminant.

Type of Contaminant:	Air Speed:
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 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 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.

Does not mix with water.

State	Divided solid	Molecular Weight	380.4
Melting Range (°F)	361.4	Viscosity	Not Applicable
Boiling Range (°F)	Not available	Solubility in water (g/L)	Partly miscible
Flash Point (°F)	Not available	pH (1% solution)	Not applicable
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)	Not Applicable
Volatile Component (%vol)	Negligible	Evaporation Rate	Not available
Gas group	IIA		

### APPEARANCE

Solid; does not mix well with water.

log Kow -0.82- -0.66

Material	Value

## 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.

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

## Section 11 - TOXICOLOGICAL INFORMATION

O-AMINOPHTHALYLHYDRAZIDO-N-ACETYL-BETA-D-GLUCOSAMINIDE

### TOXICITY AND IRRITATION

■ No significant acute toxicological data identified in literature search.

METHANOL:

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

TOXICITY	IRRITATION
Oral (human) LDLo: 143 mg/kg	Skin (rabbit): 20 mg/24 h-Moderate
Oral (man) LDLo: 6422 mg/kg	Eye (rabbit): 40 mg-Moderate
Oral (man) TDLo: 3429 mg/kg	Eye (rabbit): 100 mg/24h-Moderate
Oral (rat) LD50: 5628 mg/kg	
Inhalation (human) TClO: 86000 mg/m <sup>3</sup>	
Inhalation (human) TClO: 300 ppm	
Inhalation (rat) LC50: 64000 ppm/4h	
Dermal (rabbit) LD50: 15800 mg/kg	

■ The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

### SKIN

o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	ND	Notes	Skin
o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	ND	Skin	Yes
o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants - Skin	Skin Designation	X
o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants - Skin	Skin Designation	X
o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	US - Washington Permissible exposure limits of air contaminants - Skin	Skin	X
o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	ND	Skin Designation	Yes
o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	ND	Notation	Skin
o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	US - Minnesota Permissible Exposure Limits (PELs) - Skin	Skin Designation	X
o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	US - Hawaii Air Contaminant Limits - Skin Designation	Skin Designation	X
o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	ND	Skin Designation	X
o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	US OSHA Permissible Exposure Levels (PELs) - Skin	Skin Designation	X
o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	ND	Skin	X
o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	US - California Permissible Exposure Limits for Chemical Contaminants - Skin	Skin	X

o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	US - California Permissible Exposure Limits for Chemical Contaminants - Skin	Skin	S
o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	Canada - Alberta Occupational Exposure Limits - Skin	Substance Interaction	1
methanol	ND	Notes	Skin
methanol	US - Hawaii Air Contaminant Limits - Skin Designation	Skin Designation	X
methanol	ND	Skin	X
methanol	US - California Permissible Exposure Limits for Chemical Contaminants - Skin	Skin	X

## Section 12 - ECOLOGICAL INFORMATION

Refer to data for ingredients, which follows:

METHANOL:

O-AMINOPHTHALYLHYDRAZIDO-N-ACETYL-BETA-D-GLUCOSAMINIDE:

■ DO NOT discharge into sewer or waterways.

O-AMINOPHTHALYLHYDRAZIDO-N-ACETYL-BETA-D-GLUCOSAMINIDE:

■ Harmful to aquatic organisms.

■ Based on data for a number of hydrazines, the material may be hazardous to plant life and aquatic organisms. Hydrazine, itself, has a high acute toxicity to algae, fish and daphnids.

METHANOL:

■ For methanol:

log Kow: -0.82- -0.66

Half-life (hr) air: 427

Half-life (hr) H2O surface water: 5.3-64

Henry's atm m3 /mol: 1.35E-04

BOD 5 0.76-1.12

COD: 1.05-1.50, 99%

ThOD: 1.5

BCF: 0.2-10

Environmental Fate:

ERRESTRIAL FATE: An estimated Koc value of 1 indicates that methanol is expected to have very high mobility in soil. Volatilisation of methanol from moist soil surfaces is expected to be an important fate process given a Henry's Law constant of 4.55x10<sup>-6</sup> atm-cu m/mole. The potential for volatilisation of methanol from dry soil surfaces may exist based upon a vapor pressure of 127 mm Hg. Biodegradation is expected to be an important fate process for methanol based on half-lives of 1 and 3.2 days measured in a sandy silt loam and sandy loam from Texas and Mississippi, respectively.

AQUATIC FATE: The estimated Koc indicates that methanol is not expected to adsorb to suspended solids and sediment. Volatilisation from water surfaces is expected based upon a Henry's Law constant. Using this Henry's Law constant estimated volatilisation half-lives for a model river and model lake are 3 and 35 days, respectively. A BCF of less than 10 measured in fish, suggests bioconcentration in aquatic organisms is low. Hydrolysis and photolysis in sunlit surface waters is not expected to be an important environmental fate process for methanol since this compound lacks functional groups that hydrolyse or absorb light under environmentally relevant conditions. Methanol has been shown to undergo rapid biodegradation in a variety of screening studies using sewage seed and activated sludge inoculum, which suggests that biodegradation will occur in aquatic environments.

ATMOSPHERIC FATE: According to a model of gas/particle partitioning of semivolatile organic compounds in the atmosphere and vapour pressure, methanol is expected to exist solely as a vapor in the ambient atmosphere. Vapour-phase methanol is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals(SRC); the half-life for this reaction in air is estimated to be 17 days, calculated from its rate constant of 9.4x10<sup>-13</sup> cu cm/molecule-sec at 25 deg C.

Ecotoxicity:

Fish LC50 (96 h) fathead minnow (*Pimephales promelus*) 29000 mg/l; rainbow trout (*Oncorhynchus mykiss*) 19000 mg/l; bluegill (*Lepomis macrochirus*) 15400 mg/l

Fish LC50 (7 d): guppy 10860 mg/l (14 d): 11.5 mg/l (semistatic)

Daphnia pulex LC50 (18 h): 19500 mg/l

Brine shrimp (*Artemia salina*) LC50 24 h): 1101.46-1578.84 mg/l (static)

Brown shrimp (*Crangon crangon*) LC50 (96 h): 1340 mg/l (semistatic)

Mussel (*Mytilus edulis*) LC50 (96 h): 15900 mg/l

Marine bacterium (*Photobacterium phosphoreum*) LC50 (4 h): 7690 mg/l

Protozoa (*Tetrahymena pyriformis*) LC50 (48 h) 18756 mg/l.

### Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide	LOW		LOW	HIGH
methanol	HIGH		LOW	HIGH

### GESAMP/EHS COMPOSITE LIST - GESAMP Hazard Profiles

Name / Cas No / RTECS No	EHS	TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3	
E2- / CAS:12887 9- 80- 1 / PC1400000			951	441	0	NI	0	R	0	0	3	(3)	(4)	2	2	T	DE	3

Legend: EHS=EHS Number (EHS=GESAMP Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships) NRT=Net Register Tonnage, A1a=Bioaccumulation log Pow, A1b=Bioaccumulation BCF, A1=Bioaccumulation, A2=Biodegradation, B1=Acute aquatic toxicity LC/EC1C50 (mg/l), B2=Chronic aquatic toxicity NOEC (mg/l), C1=Acute mammalian oral toxicity LD50 (mg/kg), C2=Acute mammalian dermal toxicity LD50 (mg/kg), C3=Acute mammalian inhalation toxicity LC50 (mg/kg), D1=Skin irritation & corrosion, D2=Eye irritation & corrosion, D3=Long-term health effects, E1=Tainting, E2=Physical effects on wildlife & benthic habitats, E3=Interference with coastal amenities, For column A2: R=Readily biodegradable, NR=Not readily biodegradable. For column D3: C=Carcinogen, M=Mutagenic, R=Reprotoxic, S=Sensitising, A=Aspiration hazard, T=Target organ systemic toxicity, L=Lung injury, N=Neurotoxic, I=Immunotoxic. For column E1: NT=Not tainting (tested), T=Tainting test positive. For column E2: Fp=Persistent floater, F=Floater, S=Sinking substances. The numerical scales start from 0 (no hazard), while higher numbers reflect increasing hazard. (GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships)

## Section 13 - DISPOSAL CONSIDERATIONS

### US EPA Waste Number & Descriptions

#### B. Component Waste Numbers

When methanol is present as a solid waste as a discarded commercial chemical product, off-specification species, as a container residue, or a spill residue, use EPA waste number U154 (waste code I).

#### 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. 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.
- Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: Burial in a licensed land-fill or Incineration in a licensed apparatus (after admixture with suitable combustible material)
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

## Section 14 - TRANSPORTATION INFORMATION

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

## Section 15 - REGULATORY INFORMATION



### REGULATIONS

#### ND

Ingredient	CAS	% de minimus concentration
methanol	67-56-1	1.0



ND

Ingredient	CAS	RQ
methanol	67-56-1	5000 lb (2270 kg)

**o-aminophthalylhydrazido-N-acetyl-beta-D-glucosaminide (CAS: 128879-80-1) is found on the following regulatory lists;**

"Canada - Alberta Ambient Air Quality Objectives","Canada - Alberta Occupational Exposure Limits","Canada - British Columbia Occupational Exposure Limits","Canada - Northwest Territories Occupational Exposure Limits (English)","Canada - Nova Scotia Occupational Exposure Limits","Canada - Ontario Occupational Exposure Limits","Canada - Prince Edward Island Occupational Exposure Limits","Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)","Canada - Saskatchewan Industrial Hazardous Substances","Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits","Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances","Canada Domestic Substances List (DSL)","Canada Ingredient Disclosure List (SOR/88-64)","Canada National Pollutant Release Inventory (NPRI)","Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)","Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (French)","GESAMP/EHS Composite List - GESAMP Hazard Profiles","IMO IBC Code Chapter 17: Summary of minimum requirements","IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances","International Council of Chemical Associations (ICCA) - High Production Volume List","OECD Representative List of High Production Volume (HPV) Chemicals","US - Alaska Limits for Air Contaminants","US - California Air Toxics ""Hot Spots"" List (Assembly Bill 2588) Substances for which emissions must be quantified","US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List","US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELS)","US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)","US - California Permissible Exposure Limits for Chemical Contaminants","US - California Toxic Air Contaminant List Category II","US - Connecticut Hazardous Air Pollutants","US - Hawaii Air Contaminant Limits","US - Idaho - Limits for Air Contaminants","US - Maine Chemicals of High Concern List","US - Massachusetts Oil & Hazardous Material List","US - Michigan Exposure Limits for Air Contaminants","US - Minnesota Hazardous Substance List","US - Minnesota Permissible Exposure Limits (PELs)","US - New Jersey Right to Know Hazardous Substances","US - Oregon Permissible Exposure Limits (Z-1)","US - Rhode Island Hazardous Substance List","US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US - Vermont Hazardous wastes which are Discarded Commercial Chemical Products or Off-Specification Batches of Commercial Chemical Products or Spill Residues of Either","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US - Washington Discarded Chemical Products List - ""U"" Chemical Products","US - Washington Permissible exposure limits of air contaminants","US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants","US ACGIH Threshold Limit Values (TLV)","US CAA (Clean Air Act) - HON Rule - Organic HAPs (Hazardous Air Pollutants)","US Clean Air Act - Hazardous Air Pollutants","US Cosmetic Ingredient Review (CIR) Cosmetic ingredients found safe, with qualifications","US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides","US DOE Temporary Emergency Exposure Limits (TEELs)","US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes","US EPA Acute Exposure Guideline Levels (AEGs) - Interim","US EPA High Production Volume Program Chemical List","US EPCRA Section 313 Chemical List","US FDA Indirect Food Additives: Adhesives and Components of Coatings - Substances for Use Only as Components of Adhesives - Adhesives","US Food Additive Database","US List of Lists - Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-to-Know Act (EPCRA) and Section 112(r) of the Clean Air Act","US NFPA 30A Typical Flammable and Combustible Liquids Found at Motor Fuel Dispensing Facilities","US NFPA 30B Manufacture and Storage of Aerosol Products - Chemical Heat of Combustion","US NIOSH Recommended Exposure Limits (RELs)","US OSHA Permissible Exposure Levels (PELs) - Table Z1","US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide","US RCRA (Resource Conservation & Recovery Act) - List of Hazardous Wastes","US RCRA (Resource Conservation & Recovery Act) - Phase 4 LDR Rule - Universal Treatment Standards","US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants","US Toxic Substances Control Act (TSCA) - Inventory"

Regulations for ingredients

**methanol (CAS: 67-56-1) is found on the following regulatory lists;**

"Canada - Alberta Ambient Air Quality Objectives","Canada - Alberta Occupational Exposure Limits","Canada - British Columbia Occupational Exposure Limits","Canada - Northwest Territories Occupational Exposure Limits (English)","Canada - Nova Scotia Occupational Exposure Limits","Canada - Ontario Occupational Exposure Limits","Canada - Prince Edward Island Occupational Exposure Limits","Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)","Canada - Saskatchewan Industrial Hazardous Substances","Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits","Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances","Canada Domestic Substances List (DSL)","Canada Ingredient Disclosure List (SOR/88-64)","Canada National Pollutant Release Inventory (NPRI)","Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)","Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (French)","GESAMP/EHS Composite List - GESAMP Hazard Profiles","IMO IBC Code Chapter 17: Summary of minimum requirements","IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances","International Council of Chemical Associations (ICCA) - High Production Volume List","OECD Representative List of High Production Volume (HPV) Chemicals","US - Alaska Limits for Air Contaminants","US - California Air Toxics ""Hot Spots"" List (Assembly Bill 2588) Substances for which emissions must be quantified","US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List","US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELS)","US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)","US - California Permissible Exposure Limits for Chemical Contaminants","US - California Toxic Air Contaminant List Category II","US - Connecticut Hazardous Air Pollutants","US - Hawaii Air Contaminant Limits","US - Idaho - Limits for Air Contaminants","US - Maine Chemicals of High Concern List","US - Massachusetts Oil & Hazardous Material List","US - Michigan Exposure Limits for Air Contaminants","US - Minnesota Hazardous Substance List","US - Minnesota Permissible Exposure Limits (PELs)","US - New Jersey Right to Know Hazardous Substances","US - Oregon Permissible Exposure Limits (Z-1)","US - Rhode Island Hazardous Substance List","US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US - Vermont Hazardous wastes which are Discarded Commercial Chemical Products or Off-Specification Batches of Commercial Chemical Products or Spill Residues of Either","US - Vermont

Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants", "US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants", "US - Washington Discarded Chemical Products List - ""U"" Chemical Products", "US - Washington Permissible exposure limits of air contaminants", "US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants", "US ACGIH Threshold Limit Values (TLV)", "US CAA (Clean Air Act) - HON Rule - Organic HAPs (Hazardous Air Pollutants)", "US Clean Air Act - Hazardous Air Pollutants", "US Cosmetic Ingredient Review (CIR) Cosmetic ingredients found safe, with qualifications", "US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides", "US DOE Temporary Emergency Exposure Limits (TEELs)", "US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes", "US EPA Acute Exposure Guideline Levels (AEGs) - Interim", "US EPA High Production Volume Program Chemical List", "US EPCRA Section 313 Chemical List", "US FDA Indirect Food Additives: Adhesives and Components of Coatings - Substances for Use Only as Components of Adhesives - Adhesives", "US Food Additive Database", "US List of Lists - Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-to-Know Act (EPCRA) and Section 112(r) of the Clean Air Act", "US NFPA 30A Typical Flammable and Combustible Liquids Found at Motor Fuel Dispensing Facilities", "US NFPA 30B Manufacture and Storage of Aerosol Products - Chemical Heat of Combustion", "US NIOSH Recommended Exposure Limits (RELs)", "US OSHA Permissible Exposure Levels (PELs) - Table Z1", "US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide", "US RCRA (Resource Conservation & Recovery Act) - List of Hazardous Wastes", "US RCRA (Resource Conservation & Recovery Act) - Phase 4 LDR Rule - Universal Treatment Standards", "US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants", "US Toxic Substances Control Act (TSCA) - Inventory"

## Section 16 - OTHER INFORMATION

### LIMITED EVIDENCE

- Cumulative effects may result following exposure\*.
- Limited evidence of a carcinogenic effect\*.
- Possible respiratory sensitizer\*.
- Vapors potentially cause drowsiness and dizziness\*.

\* (limited evidence).

### REPRODUCTIVE HEALTH GUIDELINES

■ Established occupational exposure limits frequently do not take into consideration reproductive end points that are clearly below the thresholds for other toxic effects. Occupational reproductive guidelines (ORGs) have been suggested as an additional standard. These have been established after a literature search for reproductive no-observed-adverse effect-level (NOAEL) and the lowest-observed-adverse-effect-level (LOAEL). In addition the US EPA's procedures for risk assessment for hazard identification and dose-response assessment as applied by NIOSH were used in the creation of such limits. Uncertainty factors (UFs) have also been incorporated.

Ingredient	ORG	UF	Endpoint	CR	Adeq TLV
methanol	262 mg/m3	NA	NA	NA	Yes

■ These exposure guidelines have been derived from a screening level of risk assessment and should not be construed as unequivocally safe limits. ORGS represent an 8-hour time-weighted average unless specified otherwise. CR = Cancer Risk/10000; UF = Uncertainty factor; TLV believed to be adequate to protect reproductive health; LOD: Limit of detection Toxic endpoints have also been identified as: D = Developmental; R = Reproductive; TC = Transplacental carcinogen Jankovic J., Drake F.: A Screening Method for Occupational Reproductive Health Risk: American Industrial Hygiene Association Journal 57: 641-649 (1996).

*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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