

SECTION 1: Identification

1.1. Identification

Product form : Substance
 Substance name : Zinc, dust 44
 Chemical name : zinc powder - zinc dust (pyrophoric)
 CAS-No. : 7440-66-6
 Product code : M030-0-01
 Formula : Zn
 Other means of identification : MFCD00011291

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Laboratory chemicals
 Manufacture of substances
 Scientific research and development

1.3. Supplier

SynQuest Laboratories, Inc.
 P.O. Box 309
 Alachua, FL 32615 - United States of America
 T (386) 462-0788 - F (386) 462-7097
info@synquestlabs.com - www.synquestlabs.com

1.4. Emergency telephone number

Emergency number : (844) 523-4086 (3E Company - Account 10069)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Self-heating substances and mixtures Category 2	H252	Self-heating in large quantities; may catch fire
Substances and mixtures which in contact with water emit flammable gases Category 3	H261	In contact with water releases flammable gas
Acute toxicity (oral) Category 4	H302	Harmful if swallowed
Serious eye damage/eye irritation Category 2B	H320	Causes eye irritation
Hazardous to the aquatic environment – Acute Hazard Category 1	H400	Very toxic to aquatic life
Hazardous to the aquatic environment – Chronic Hazard Category 1	H410	Very toxic to aquatic life with long lasting effects

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Warning

Hazard statements (GHS US) :

H252 - Self-heating in large quantities; may catch fire
 H261 - In contact with water releases flammable gas
 H302 - Harmful if swallowed

Zinc, dust 44

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Precautionary statements (GHS US)	: H320 - Causes eye irritation H410 - Very toxic to aquatic life with long lasting effects P231+P232 - Handle under inert gas. Protect from moisture. P235+P410 - Keep cool. Protect from sunlight. P264 - Wash skin thoroughly after handling P270 - Do not eat, drink or smoke when using this product. P273 - Avoid release to the environment. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P301+P312 - If swallowed: Call a POISON CENTER or doctor/ physician if you feel unwell P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P330 - Rinse mouth. P337+P313 - If eye irritation persists: Get medical advice/attention. P370+P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish P391 - Collect spillage. P402+P404 - Store in a dry place. Store in a closed container. P407 - Maintain air gap between stacks/pallets. P413 - Store bulk masses greater than ...kg/...lbs at temperatures not exceeding ...°C/...°F. P420 - Store away from other materials. P501 - Dispose of contents/container to an approved waste disposal plant
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2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	GHS US classification
Zinc, dust 44 (Main constituent)	CAS-No.: 7440-66-6	≤ 100	Self-heat. 2, H252 Water-react. 3, H261 Acute Tox. 4 (Oral), H302 Eye Irrit. 2B, H320 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Move the affected personnel away from the contaminated area.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration. Get medical advice/attention.
First-aid measures after skin contact	: Wash with plenty of soap and water. Get medical advice/attention.

Zinc, dust 44

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

First-aid measures after eye contact	: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
First-aid measures after ingestion	: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth out with water. Get medical advice/attention.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects	: The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.
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4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Dry powder. Use extinguishing media appropriate for surrounding fire. Sand.
Unsuitable extinguishing media	: Do not use extinguishing media containing water.

5.2. Specific hazards arising from the chemical

Fire hazard	: Thermal decomposition generates: Carbon oxides.
Reactivity in case of fire	: Combustible solids.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	: In case of fire: Evacuate area.
Protection during firefighting	: Wear gas tight chemically protective clothing in combination with self contained breathing apparatus. For further information refer to section 8: "Exposure controls/personal protection".

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Evacuate unnecessary personnel. Ensure adequate air ventilation. Do not breathe dust.
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6.1.1. For non-emergency personnel

Emergency procedures	: Only qualified personnel equipped with suitable protective equipment may intervene.
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6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment	: Stop leak if safe to do so.
Methods for cleaning up	: Sweep or shovel spills into appropriate container for disposal. Minimize generation of dust.
Other information	: For disposal of solid materials or residues refer to section 13: "Disposal considerations".

6.4. Reference to other sections

No additional information available

Zinc, dust 44

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Ensure good ventilation of the work station. Do not breathe fumes, mist, spray, vapors. Wear personal protective equipment. Avoid contact with skin and eyes.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Comply with applicable regulations.
- Storage conditions : Keep container closed when not in use. Air sensitive. Moisture sensitive. Keep contents under inert gas.
- Incompatible materials : Refer to Section 10 on Incompatible Materials.
- Storage area : Store in dry, well-ventilated area.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Zinc, dust 44 (7440-66-6)

No additional information available

8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

protective gloves. 29 CFR 1910.138: Hand Protection

Eye protection:

Chemical goggles or safety glasses. Face shield. 29 CFR 1910.133: Eye and Face Protection

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of inadequate ventilation wear respiratory protection. 29 CFR 1910.134: Respiratory Protection

Other information:

Safety shoes. 29 CFR 1910.136: Foot Protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Solid
- Appearance : Gray dust, lustrous powder or ingot.
- Color : Gray
- Odor : odorless

Zinc, dust 44

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Odor threshold	: No data available
pH	: No data available
Melting point	: 420 °C
Freezing point	: No data available
Boiling point	: 907 °C
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: 1.33 hPa (at 487 °C)
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Density	: 7.134 g/cm ³ (at 20 °C)
Molecular mass	: 65.409 g/mol
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: 680 °C (dust cloud)
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Keep away from heat, sparks and flame.

10.5. Incompatible materials

Acids. Bases. Oxidizing agents.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Hazardous decomposition products in case of fire, see Section 5.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified

Zinc, dust 44

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Acute toxicity (inhalation) : Not classified

Zinc, dust 44 (7440-66-6)	
LD50 oral rat	630 mg/kg
ATE US (oral)	630 mg/kg body weight

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Causes eye irritation.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified
Viscosity, kinematic : No data available
Symptoms/effects : The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

SECTION 12: Ecological information

12.1. Toxicity

Zinc, dust 44 (7440-66-6)	
LC50 - Fish [1]	2.16 – 3.05 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 - Crustacea [1]	0.139 – 0.908 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 - Fish [2]	0.211 – 0.269 mg/l (Exposure time: 96 h - Species: Pimephales promelas [semi-static])

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional legislation (waste) : U.S. - RCRA (Resource Conservation Recovery Act) - TSD Facilities Ground Water Monitoring. U.S. - RCRA (Resource Conservation Recovery Act) - Phase 4 LDR Rule - Universal Treatment Standards. U.S. - RCRA (Resource Conservation Recovery Act) - List for Hazardous Constituents. U.S. - RCRA (Resource Conservation Recovery Act) - Constituents for Detection Monitoring.
Waste treatment methods : Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber.
Product/Packaging disposal recommendations : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Additional information : Recycle the material as far as possible.

Zinc, dust 44

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 14: Transport information

14.1. UN number

DOT NA No : UN3077
UN-No. (TDG) : Not applicable
UN-No. (IMDG) : 3077
UN-No. (IATA) : 3077

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Environmentally hazardous substances, solid, n.o.s.
Proper Shipping Name (TDG) : Not applicable
Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Proper Shipping Name (IATA) : Environmentally hazardous substance, solid, n.o.s.

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : 9
Hazard labels (DOT) : 9



TDG

Transport hazard class(es) (TDG) : Not applicable

IMDG

Transport hazard class(es) (IMDG) : 9
Hazard labels (IMDG) : 9



IATA

Transport hazard class(es) (IATA) : 9
Hazard labels (IATA) : 9



14.4. Packing group

Packing group (DOT) : III
Packing group (TDG) : Not applicable
Packing group (IMDG) : III
Packing group (IATA) : III

14.5. Environmental hazards

Dangerous for the environment : Yes

Zinc, dust 44

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Marine pollutant : Yes



Other information : No supplementary information available.

14.6. Special precautions for user

DOT

UN-No.(DOT) : UN3077

Zinc, dust 44

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

DOT Special Provisions (49 CFR 172.102)	: 8 - A hazardous substance that is not a hazardous waste may be shipped under the shipping description "Other regulated substances, liquid or solid, n.o.s.", as appropriate. In addition, for solid materials, special provision B54 applies. 146 - This description may be used for a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in 171.8 of this subchapter, or any hazard class as defined in Part 173 of this subchapter, if it is designated as environmentally hazardous by the Competent Authority of the country of origin, transit or destination. 335 - Mixtures of solids that are not subject to this subchapter and environmentally hazardous liquids or solids may be classified as "Environmentally hazardous substances, solid, n.o.s," UN3077 and may be transported under this entry, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each transport unit must be leak-proof when used as bulk packaging. 384 - For transportation by motor vehicle, substances meeting the conditions for high viscosity flammable liquids as prescribed in §173.121(b)(1)(i), (b)(1)(ii), and (b)(1)(iv) of this subchapter, may be reassigned to Packing Group III under the following conditions: A112 - Notwithstanding the quantity limits shown in Column (9A) and (9B) for this entry, the following IBCs are authorized for transportation aboard passenger and cargo-only aircraft. Each IBC may not exceed a maximum net quantity of 1,000 kg: a. Metal: 11A, 11B, 11N, 21A, 21B and 21N b. Rigid plastics: 11H1, 11H2, 21H1 and 21H2 c. Composite with plastic inner receptacle: 11HZ1, 11HZ2, 21HZ1 and 21HZ2 d. Fiberboard: 11G e. Wooden: 11C, 11D and 11F (with inner liners) f. Flexible: 13H2, 13H3, 13H4, 13H5, 13L2, 13L3, 13L4, 13M1 and 13M2 (flexible IBCs must be sift-proof and water resistant or must be fitted with a sift-proof and water resistant liner). B54 - Open-top, sift-proof rail cars are also authorized. B120 - The use of flexible bulk containers conforming to the requirements in subpart R and subpart S of part 178 of this subchapter is permitted. IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2). IP3 - Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner. N20 - A 5M1 multi-wall paper bag is authorized if transported in a closed transport vehicle. N91 - The use of a non specification sift-proof, non-bulk, metal can with or without lid, or a non specification sift-proof, non-bulk fiber drum, with or without lid is authorized when transporting coal tar pitch compounds by motor vehicle or rail freight. The fiber drum must be fabricated with a three ply wall, as a minimum. The coal tar pitch compound must be in a solid mass during transportation. T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2) TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 155
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 213
DOT Packaging Bulk (49 CFR 173.xxx)	: 240
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: No limit

Zinc, dust 44

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : No limit
DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

TDG

Emergency Response Guide (ERG) Number : 171

IMDG

Special provision (IMDG) : 274, 335, 966, 967, 969
Limited quantities (IMDG) : 5 kg
Excepted quantities (IMDG) : E1
Packing instructions (IMDG) : LP02, P002
Packing provisions (IMDG) : PP12
IBC packing instructions (IMDG) : IBC08
IBC special provisions (IMDG) : B3
Tank instructions (IMDG) : BK1, BK2, BK3, T1
Tank special provisions (IMDG) : TP33
EmS-No. (Fire) : F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE
EmS-No. (Spillage) : S-F - SPILLAGE SCHEDULE Foxtrot - WATER-SOLUBLE MARINE POLLUTANTS
Stowage category (IMDG) : A

IATA

PCA Excepted quantities (IATA) : E1
PCA Limited quantities (IATA) : Y956
PCA limited quantity max net quantity (IATA) : 30kgG
PCA packing instructions (IATA) : 956
PCA max net quantity (IATA) : 400kg
CAO packing instructions (IATA) : 956
CAO max net quantity (IATA) : 400kg
Special provision (IATA) : A97, A158, A179, A197, A215
ERG code (IATA) : 9L

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Zinc, dust 44 (7440-66-6)

Subject to reporting requirements of United States SARA Section 313

CERCLA RQ	454 kg no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm
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All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory, except for:

Zinc, dust 44	CAS-No. 7440-66-6	100%
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Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Zinc, dust 44	CAS-No. 7440-66-6	100%
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Zinc, dust 44

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

15.2. International regulations

CANADA

Zinc, dust 44 (7440-66-6)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Zinc, dust 44 (7440-66-6)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Zinc, dust 44 (7440-66-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Japanese ENCS (Existing New Chemical Substances) inventory
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (Vietnam - National Chemical Inventory)

15.3. US State regulations

Zinc, dust 44 (7440-66-6)

State or local regulations	U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
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California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of H-phrases	
H252	Self-heating in large quantities; may catch fire
H261	In contact with water releases flammable gas
H302	Harmful if swallowed
H320	Causes eye irritation
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

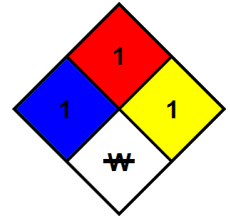
NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.
NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.

Zinc, dust 44

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

NFPA reactivity : 1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.
NFPA specific hazard : W - Materials that react violently or explosively with water.



Hazard Rating
Health : 1 Slight Hazard - Irritation or minor reversible injury possible
Flammability : 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)
Physical : 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

Safety Data Sheet (SDS), USA

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 offered solely for your consideration, investigation, and verification. It does not represent any guarantee of the properties of the product nor that the hazard precautions or procedures described are the only ones which exist. SynQuest shall not be held liable or any damage resulting from handling or from contact with the above product.