

### Safety Data Sheet M001302

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

Date of issue: 06/15/2018 Version: 1.0

#### **SECTION 1: Identification**

1.1. Identification

Product form : Substance

Substance name : Hydrofluoric acid, aq

CAS No : 7664-39-3
Product code : M001-3-02
Formula : FH

Synonyms : Hydrogen fluoride / Hydrogen fluoride, anhydrous / Fluorohydrogen / Hydrofluoric acid,

anhydrous / Hydrogen fluoride / Hydrogen fluoride, anhydrous / Fluorohydrogen / Hydrofluoric

acid, anhydrous

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Laboratory chemicals

Manufacture of substances

Scientific research and development

### 1.3. Details of the supplier of the safety data sheet

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

#### **Classification (GHS-US)**

Acute Tox. 2 (Oral) H300 - Fatal if swallowed
Acute Tox. 2 (Dermal) H310 - Fatal in contact with skin

Acute Tox. 1 (Inhalation) H330 - Fatal if inhaled Acute Tox. 2 (Inhalation:vapour) H330 - Fatal if inhaled

Skin Corr. 1A H314 - Causes severe skin burns and eye damage Skin Corr. 1B H314 - Causes severe skin burns and eye damage

Eye Dam. 1 H318 - Causes serious eye damage STOT SE 3 H335 - May cause respiratory irritation

Full text of H-phrases: see section 16

### 2.2. Label elements

### **GHS-US** labeling

Hazard pictograms (GHS-US)





GHS05

GHS06

GHS07

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H300+H310+H330 - Fatal if swallowed, in contact with skin or if inhaled

H314 - Causes severe skin burns and eye damage

H335 - May cause respiratory irritation

Precautionary statements (GHS-US) : P260 - Do not breathe fumes, mist, spray, vapors

P262 - Do not get in eyes, on skin, or on clothing P264 - Wash skin thoroughly after handling

P270 - Do not eat, drink or smoke when using this product P271 - Use only outdoors or in a well-ventilated area

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P284 - In case of inadequate ventilation wear respiratory protection P301+P310 - If swallowed: Immediately call a poison center/doctor/... P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting

P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse

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skin with water/shower

P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing

P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact

lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor/ physician

P320 - Specific treatment is urgent (see supplemental first aid instructions on this label)

P321 - Specific treatment (see supplemental first aid instructions on this label)

P330 - Rinse mouth

P361 - Take off immediately all contaminated clothing

P363 - Wash contaminated clothing before reuse

P403+P233 - Store in a well-ventilated place. Keep container tightly closed

P405 - Store locked up

P501 - Dispose of contents/container to an approved waste disposal plant

#### 2.3. Other hazards

No additional information available

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable

### **SECTION 3: Composition/information on ingredients**

#### 3.1. Substance

Name : Hydrofluoric acid, aq

CAS No : 7664-39-3

| Name                         | Product identifier | %       | Classification (GHS-US)  |
|------------------------------|--------------------|---------|--|
| Hydrogen fluoride, anhydrous | (CAS No) 7664-39-3 | 48 - 52 | Simple Asphy, H380<br>Liquefied gas, H280<br>Acute Tox. 2 (Oral), H300<br>Acute Tox. 1 (Dermal), H310<br>Acute Tox. 2 (Inhalation:vapour),<br>H330<br>Skin Corr. 1A, H314<br>Eye Dam. 1, H318<br>STOT SE 3, H335 |
| Water                        | (CAS No) 7732-18-5 | 48 - 52 | Not classified   |

Full text of H-phrases: see section 16

#### 3.2. Mixture

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 immediate medical advice/attention.

First-aid measures after skin contact : Wash with plenty of soap and water. Remove contaminated clothing and shoes. In case of skin contact, wearing rubber gloves rub 2.5% calcium gluconate gel continuously into the affected

area for 1.5 hours or until further medical care is available. Get immediate medical

advice/attention.

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 immediate 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 immediate medical advice/attention.

#### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : The most important known symptoms and effects are described in the labelling (see section

2.2) and/or in section 11.

Symptoms/injuries after inhalation : Material is destructive to tissue of the mucuous membranes and upper respiratory tract. Cough,

shortness of breath, headache, nausea.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Absorption of excessive F- can result in acute systemic fluorosis with hypocalcemia, interference with various metabolic functions and organ damage (heart, liver, kidneys).

## **SECTION 5: Firefighting measures**

#### 5.1. Extinguishing media

Suitable extinguishing media : The product is not flammable.

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#### 5.2. Special hazards arising from the substance or mixture

Fire hazard : Hydrogen fluoride.

Explosion hazard : Risk of explosion if heated under confinement. Use water spray or fog for cooling exposed

containers.

#### 5.3. Advice for firefighters

Firefighting instructions : In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.

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 gas, fumes,

vapor or spray.

#### 6.1.1. For non-emergency personnel

Emergency procedures : Only qualified personnel equipped with suitable protective equipment may intervene.

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".

Emergency procedures : Gas/vapor heavier than air. May accumulate in confined spaces, particularly at or below ground

level.

### 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. Dike for recovery or absorb with appropriate material.

Methods for cleaning up : Take up large spills with pump or vacuum and finish with dry chemical absorbent. Use

explosion-proof equipment. Take up small spills with dry chemical absorbent. Sweep or shovel

spills into appropriate container for disposal. Ventilate area.

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

#### 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.

Incompatible materials : Refer to Section 10 on Incompatible Materials.

Storage area : Store in dry, cool, well-ventilated area.

Special rules on packaging : Do not store in glass.

#### SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

| Hydrofluoric acid, aq (7664-39-3) |                      |                           |
|-----------------------------------|----------------------|---------------------------|
| ACGIH                             | ACGIH TWA (ppm)      | 0.50 ppm                  |
| ACGIH                             | ACGIH Ceiling (ppm)  | 2 ppm                     |
| ACGIH                             | Remark (ACGIH)       | URT, LRT, skin, & eye irr |
| OSHA                              | OSHA PEL (TWA) (ppm) | 3 ppm                     |
| OSHA                              | Remark (OSHA)        | (2) See Table Z-2.        |

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| Hydrogen fluoride, anhydrous (7664-39-3) |                      |                           |
|--|----------------------|---------------------------|
| ACGIH                                    | ACGIH TWA (ppm)      | 0.50 ppm                  |
| ACGIH                                    | ACGIH Ceiling (ppm)  | 2 ppm                     |
| ACGIH                                    | Remark (ACGIH)       | URT, LRT, skin, & eye irr |
| OSHA                                     | OSHA PEL (TWA) (ppm) | 3 ppm                     |
| OSHA                                     | Remark (OSHA)        | (2) See Table Z-2.        |

### 8.2. Exposure 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.

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 : Liquid

Appearance : Colorless gas. Liquid under pressure or at low temperature.

Color : Colorless
Odor : sharp Irritating
Odor threshold : No data available
pH : No data available

Melting point : -83.7 °C

Freezing point : No data available

Boiling point : 112 °C

Flash point : No data available Relative evaporation rate (butyl acetate=1) : No data available Flammability (solid, gas) : No data available : No data available **Explosion limits** : No data available Explosive properties Oxidizing properties : No data available 1053 hPa (at 20 °C) Vapor pressure Relative density No data available Relative vapor density at 20 °C : No data available Specific gravity / density 1.16 g/ml (@ 20 °C) Molecular mass 20.00634 g/mol

Solubility : Water: 719.8 g/l (at 20 °C)

Log Pow : -1.4

Auto-ignition temperature : No data available
Decomposition temperature : No data available
Viscosity : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available

#### 9.2. Other information

No additional information available

### **SECTION 10: Stability and reactivity**

#### 10.1. Reactivity

No additional information available

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#### 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

Alkali metals. Finely divided metals (Al, Mg, Zn). Strong bases. Strong oxidizing agents. Glass.

#### 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: Fatal if swallowed. Dermal: Fatal in contact with skin. Inhalation: Fatal if inhaled. Inhalation:vapour: Fatal if inhaled.

| Hydrofluoric acid, aq (7664-39-3)        |                                |  |
|--|--------------------------------|--|
| LC50 inhalation rat (mg/l)               | 0.79 mg/l (Exposure time: 1 h) |  |
| ATE US (oral)                            | 9.615 mg/kg body weight        |  |
| ATE US (dermal)                          | 50.000 mg/kg body weight       |  |
| ATE US (gases)                           | 10.000 ppmV/4h                 |  |
| ATE US (vapors)                          | 0.790 mg/l/4h                  |  |
| ATE US (dust, mist)                      | 0.790 mg/l/4h                  |  |
| Hydrogen fluoride, anhydrous (7664-39-3) |                                |  |
| LC50 inhalation rat (mg/l)               | 0.79 mg/l (Exposure time: 1 h) |  |
|  |                                |  |

| Hydrogen fluoride, anhydrous (7664-39-3) |                                |
|--|--------------------------------|
| LC50 inhalation rat (mg/l)               | 0.79 mg/l (Exposure time: 1 h) |
| ATE US (oral)                            | 5.000 mg/kg body weight        |
| ATE US (dermal)                          | 5.000 mg/kg body weight        |
| ATE US (vapors)                          | 0.790 mg/l/4h                  |
| ATE US (dust, mist)                      | 0.790 mg/l/4h                  |
|  |                                |

| vvater | (7732-1 | 18-5) |
|--------|---------|-------|
|        |         |       |

LD50 oral rat > 90 ml/kg

Skin corrosion/irritation : Causes severe skin burns and eye damage. Causes severe skin burns and eye damage.

Serious eye damage/irritation : Causes serious eye damage.

Respiratory or skin sensitization : Not classified Germ cell mutagenicity : Not classified Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : May cause respiratory irritation.

Specific target organ toxicity (repeated

exposure)

: Not classified

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : Material is destructive to tissue of the mucuous membranes and upper respiratory tract. Cough,

shortness of breath, headache, nausea.

#### **SECTION 12: Ecological information**

#### 12.1. Toxicity

| Hydrofluoric acid, aq (7664-39-3)        |   |
|--|---|
| EC50 Daphnia 1                           | 270 mg/l (Exposure time: 48 h - Species: Daphnia species) |
| Hydrogen fluoride, anhydrous (7664-39-3) |   |
| EC50 Daphnia 1                           | 270 mg/l (Exposure time: 48 h - Species: Daphnia species) |

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#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

| Hydrofluoric acid, aq (7664-39-3)                   |                      |
|---|----------------------|
| BCF fish 1  | (no bioaccumulation) |
| Log Pow   | -1.4                 |
|   |                      |
| Hydrogen fluoride, anhydrous (7664-39-3)            |                      |
| Hydrogen fluoride, anhydrous (7664-39-3) BCF fish 1 | (no bioaccumulation) |

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

### **SECTION 13: Disposal considerations**

#### 13.1. Waste treatment methods

Regional legislation (waste)

U.S. - RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix

VIII to 40 CFR 261. U.S. - RCRA (Resource Conservation & Recovery Act) - U Series Wastes -

Acutaly Taylo Westers & Other Hazardous Characteristics

Acutely Toxic Wastes & Other Hazardous Characteristics.

Waste treatment methods : Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber.

Waste disposal recommendations : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Additional information : Recycle the material as far as possible.

#### **SECTION 14: Transport information**

### **Department of Transportation (DOT)**

In accordance with DOT

Transport document description : UN1790 Hydrofluoric acid (with not more than 60 percent strength), 8, II

UN-No.(DOT) : UN1790

Proper Shipping Name (DOT) : Hydrofluoric acid

with not more than 60 percent strength

Transport hazard class(es) (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136

Hazard labels (DOT) : 8 - Corrosive 6.1 - Poison



Packing group (DOT) : II - Medium Danger

DOT Packaging Non Bulk (49 CFR 173.xxx) : 202 DOT Packaging Bulk (49 CFR 173.xxx) : 243

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DOT Special Provisions (49 CFR 172.102)

: A6 - For combination packaging, if plastic inner packaging are used, they must be packed in tightly closed metal receptacles before packing in outer packaging.

A7 - Steel packaging must be corrosion-resistant or have protection against corrosion. B15 - Packaging must be protected with non-metallic linings impervious to the lading or have a suitable corrosion allowance.

IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. N5 - Glass materials of construction are not authorized for any part of a packaging which is normally in contact with the hazardous material.

N34 - Aluminum construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material.

T8 - 4 178.274(d)(2) Normal..... Prohibited

TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.

TP12 - This material is considered highly corrosive to steel.

DOT Packaging Exceptions (49 CFR 173.xxx) DOT Quantity Limitations Passenger aircraft/rail : 1 L

(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 30 L

CFR 175.75)

: D - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger

vessels in which the limiting number of passengers is exceeded.

: 12 - Keep as cool as reasonably practicable,40 - Stow "clear of living quarters" **DOT Vessel Stowage Other** 

Emergency Response Guide (ERG) Number : 125 (UN1052);157 (UN1790)

Other information : No supplementary information available.

#### TDG

No additional information available

**DOT Vessel Stowage Location** 

#### Transport by sea

: 1790 UN-No. (IMDG)

Proper Shipping Name (IMDG) : HYDROFLUORIC ACID Class (IMDG) : 8 - Corrosive substances

Packing group (IMDG) : II - substances presenting medium danger

#### Air transport

UN-No. (IATA) : 1790

Proper Shipping Name (IATA) : Hvdrofluoric acid Class (IATA) : 8 - Corrosives Packing group (IATA) : II - Medium Danger

### **SECTION 15: Regulatory information**

### 15.1. US Federal regulations

| Hydrofluoric acid, aq (7664-39-3)  |       |
|--|-------|
| Listed on the United States TSCA (Toxic Substances Control Ad<br>Listed on the United States SARA Section 302<br>Subject to reporting requirements of United States SARA Section | ,     |
| SARA Section 302 Threshold Planning Quantity (TPQ) 100 lb  |       |
| SARA Section 313 - Emission Reporting  | 1.0 % |

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

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.

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| Hydrogen fluoride, anhydrous  | CAS No 7664-39-3    | 48 - 52% |
|---|---------------------|----------|
| Hydrogen fluoride, anhydrous (7664-39-3)  |                     |          |
| Listed on the United States SARA Section 302<br>Subject to reporting requirements of United State | es SARA Section 313 |          |
| SARA Section 302 Threshold Planning Quantity (TPQ)  | 100 lb              |          |
| SARA Section 313 - Emission Reporting   | 1.0 %               |          |

#### 15.2. International regulations

| CANADA                                  |  |
|---|--|
| Hydrofluoric acid, aq (7664-39-3)       |  |
| Listed on the Canadian DSL (Domestic Su | istances List)   |
| WHMIS Classification                    | Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class E - Corrosive Material |
| Hydrogen fluoride, anhydrous (7664-39   | -3)  |
| Listed on the Canadian DSL (Domestic Su | stances List)  |
| WHMIS Classification                    | Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class E - Corrosive Material |
| Water (7732-18-5)                       |  |
| Listed on the Canadian DSL (Domestic Su | stances List)  |
| WHMIS Classification                    | Uncontrolled product according to WHMIS classification criteria  |
|   |  |

#### **EU-Regulations**

No additional information available

#### National regulations

### Hydrofluoric acid, aq (7664-39-3)

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory

Listed on the Korean ECL (Existing Chemicals List)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Japanese Poisonous and Deleterious Substances Control Law

Japanese Pollutant Release and Transfer Register Law (PRTR Law)

Listed on the Canadian IDL (Ingredient Disclosure List)

Listed on INSQ (Mexican national Inventory of Chemical Substances)

Listed on Turkish inventory of chemical

### Hydrogen fluoride, anhydrous (7664-39-3)

Listed on the AICS (Australian Inventory of Chemical Substances)

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Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory

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### Water (7732-18-5)

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#### 15.3. US State regulations

| Hydrofluoric acid, aq (7664-39-3)  |  |
|--|--|
| , and the second | U.S Massachusetts - Right To Know List<br>U.S New Jersey - Right to Know Hazardous Substance List<br>U.S Pennsylvania - RTK (Right to Know) - Environmental Hazard List<br>U.S Pennsylvania - RTK (Right to Know) List |

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

#### Hydrogen fluoride, anhydrous (7664-39-3)

- U.S. Massachusetts Right To Know List
- U.S. New Jersey Right to Know Hazardous Substance List
- U.S. Pennsylvania RTK (Right to Know) Environmental Hazard List
- U.S. Pennsylvania RTK (Right to Know) List

### **SECTION 16: Other information**

#### Full text of H-phrases:

| Acute Tox. 1 (Dermal)            | Acute toxicity (dermal) Category 1                          |
|----------------------------------|---|
| Acute Tox. 1 (Inhalation)        | Acute toxicity (inhalation) Category 1                      |
| Acute Tox. 2 (Dermal)            | Acute toxicity (dermal) Category 2                          |
| Acute Tox. 2 (Inhalation:vapour) | Acute toxicity (inhalation:vapour) Category 2               |
| Acute Tox. 2 (Oral)              | Acute toxicity (oral) Category 2                            |
| Eye Dam. 1                       | Serious eye damage/eye irritation Category 1                |
| Liquefied gas                    | Gases under pressure Liquefied gas                          |
| Simple Asphy                     | Simple Asphyxiant   |
| Skin Corr. 1A                    | Skin corrosion/irritation Category 1A                       |
| Skin Corr. 1B                    | Skin corrosion/irritation Category 1B                       |
| STOT SE 3                        | Specific target organ toxicity (single exposure) Category 3 |
| H280                             | Contains gas under pressure; may explode if heated          |
| H300                             | Fatal if swallowed  |
| H310                             | Fatal in contact with skin                                  |
| H314                             | Causes severe skin burns and eye damage                     |
| H318                             | Causes serious eye damage                                   |
| H330                             | Fatal if inhaled  |
| H335                             | May cause respiratory irritation                            |
| H380                             | May displace oxygen and cause rapid suffocation             |

NFPA health hazard : 4 - Very short exposure could cause death or serious

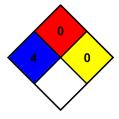
residual injury even though prompt medical attention was

given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions,

and are not reactive with water.



HMIS III Rating

Health : 4 Severe Hazard - Life-threatening, major or permanent damage may result from single or

repeated overexposures

\* - Chronic (long-term) health effects may result from repeated overexposure

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT

react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

SDS US (GHS HazCom 2012)

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.

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