

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations SDS ID: M017501SD Issue date: 4/27/2022 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form Substance name Chemical name	 Substance Hydrochloric acid, 2 M in diethyl ether hydrogen chloride 7647-01-0
CAS-No.	: 7647-01-0
Product code	: M017-5-01SD
Formula	: CIH
Other means of identification	: MFCD00011324

1.2. Recommended use and restrictions on use

No additional information available

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

Flammable liquids Category 1	H224	Extremely flammable liquid and vapor
Corrosive to metals Category 1	H290	May be corrosive to metals
Acute toxicity (oral) Category 4	H302	Harmful if swallowed
Acute toxicity (inhalation:vapor) Category 3	H331	Toxic if inhaled
Skin corrosion/irritation Category 1A	H314	Causes severe skin burns and eye damage
Serious eye damage/eye irritation Category 1	H318	Causes serious eye damage
Specific target organ toxicity - Single exposure, Category 3, Narcosis	H336	May cause drowsiness or dizziness
Specific target organ toxicity – Single exposure, Category 3,	H335	May cause respiratory irritation
Respiratory tract irritation		
Hazardous to the aquatic environment – Chronic Hazard Category 3	H412	Harmful 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) Hazard statements (GHS US) : Danger

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: H224 - Extremely flammable liquid and vapor H290 - May be corrosive to metals

Safety Data Sheet

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

	H302 - Harmful if swallowed
	H314 - Causes severe skin burns and eye damage
	H318 - Causes serious eye damage
	H331 - Toxic if inhaled
	H335 - May cause respiratory irritation
	H336 - May cause drowsiness or dizziness
	H412 - Harmful to aquatic life with long lasting effects
Precautionary statements (GHS US)	: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No
	smoking.
	P233 - Keep container tightly closed.
	P234 - Keep only in original container.
	P240 - Ground/Bond container and receiving equipment.
	P241 - Use explosion-proof electrical/ventilating/lighting equipment
	P242 - Use only non-sparking tools.
	P243 - Take precautionary measures against static discharge.
	P260 - Do not breathe dust/fume/gas/mist/vapors/spray.
	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.
	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
	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
	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
	P311 - Call a POISON CENTER or doctor/physician
	P321 - Specific treatment (see supplemental first aid instructions on this label)
	P330 - Rinse mouth.
	P363 - Wash contaminated clothing before reuse.
	P370+P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
	P390 - Absorb spillage to prevent material-damage.
	P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
	P403+P235 - Store in a well-ventilated place. Keep cool.
	P405 - Store locked up.
	P406 - Store in corrosive resistant container with a resistant inner liner
	P501 - Dispose of contents/container to an approved waste disposal plant

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

3.1. Substances

Name CAS-No. : Hydrochloric acid, 2 M in diethyl ether

: 7647-01-0

Safety Data Sheet

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

Name	Product identifier	%	GHS US classification
Diethyl ether	CAS-No.: 60-29-7	85 – 100	Flam. Liq. 1, H224 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H336 STOT SE 3, H335
Water	CAS-No.: 7732-18-5	2.5 – 10.5	Not classified
Hydrochloric acid, anhydrous	CAS-No.: 7647-01-0	1.5 – 7.5	Press. Gas (Liq.), H280 Met. Corr. 1, H290 Skin Corr. 1A, H314 Eye Dam. 1, H318 STOT SE 3, H335

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 immediate medical advice/attention. 	
First-aid measures after skin contact	: Wash with plenty of soap and water. Remove contaminated clothing and shoes. 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 (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.	
Symptoms/effects after inhalation	: Material is destructive to tissue of the mucuous membranes and upper respiratory tract. Cough, shortness of breath, headache, nausea.	

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 Unsuitable extinguishing media	Dry powder. Use extinguishing media appropriate for surrounding fire.Water.	
5.2. Specific hazards arising from the chemical		
Fire hazard Explosion hazard	 Thermal decomposition generates: Carbon oxides. Hydrogen chloride. Risk of explosion if heated under confinement. Use water spray or fog for cooling exposed containers. May form flammable/explosive vapor-air mixture. 	

Safety Data Sheet

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

5.3. Special protective equipment	and precautions for fire-fighters
Firefighting instructions Protection during firefighting	 In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. 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 releas	e measures

6.1. Personal precautions, protective equipment and emergency procedures		
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General measures	: Evacuate unnecessary personnel. Ensure adequate air ventilation. May cause suffocation by reducing oxygen available for breathing. 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. Consider the risk of potentially explosive atmospheres. Eliminate every possible source of ignition.	

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 storag	e
7.1. Precautions for safe handling	
Additional hazards when processed Precautions for safe handling	 Handle empty containers with care because residual vapors are flammable. 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. Keep away from ignition sources (including static discharges). Proper grounding procedures to avoid static electricity should be followed. Use only non-sparking tools.
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, incl	uding any incompatibilities
Technical measures	: Comply with applicable regulations.
Storage conditions	: Keep container closed when not in use. Keep away from ignition sources. Moisture sensitive. Keep contents under inert gas.
Incompatible materials	: Refer to Section 10 on Incompatible Materials.
Storage temperature	: 2 – 8 °C Use explosion proof refrigerator

Safety Data Sheet

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

Storage area

: Store in dry, well-ventilated area.

SECTION 8: Exposure controls/personal protection			
8.1. Control parameters			
Hydrochloric acid, 2 M in diethyl ether (7647-01-0)			
No additional information available			
Diethyl ether (60-29-7)	Diethyl ether (60-29-7)		
USA - ACGIH - Occupational Exposure Limits			
Local name	Ethyl ether		
ACGIH OEL TWA [ppm]	400 ppm		
ACGIH OEL STEL [ppm]	500 ppm		
Remark (ACGIH)	CNS impair; URT irr		
USA - OSHA - Occupational Exposure Limits			
Local name	Ethyl ether		
OSHA PEL TWA [1]	1200 mg/m³		
OSHA PEL TWA [2]	400 ppm		

Safety Data Sheet

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

Diethyl ether (60-29-7)	
USA - IDLH - Occupational Exposure Limits	
IDLH [ppm]	1900 ppm (10% LEL)
Hydrochloric acid, anhydrous (7647-01-0)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Hydrogen chloride
ACGIH OEL C [ppm]	2 ppm
Remark (ACGIH)	URT irr
ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA - OSHA - Occupational Exposure Limits	
Local name	Hydrogen chloride
OSHA PEL C	7 mg/m³
OSHA PEL C [ppm]	5 ppm
USA - IDLH - Occupational Exposure Limits	
IDLH [ppm]	50 ppm
USA - NIOSH - Occupational Exposure Limits	
NIOSH REL C	7 mg/m³
NIOSH REL C [ppm]	5 ppm
Water (7732-18-5)	
No additional information available	
8.2. Appropriate engineering controls	

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. Systems under pressure should be regularily checked for leakage. Oxygen detectors should be used when asphyxiating gases may be released. Gas detectors should be used when toxic gases may be released.

Safety Data Sheet

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

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	: Liquid
Color	: Mixture contains one or more component(s) which have the following colour(s): Clear Colorless
Odor	 There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure. Mixture contains one or more component(s) which have the following odour: Sweet choking
Odor threshold	: No data available
рН	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: 34 – 35 °C
Flash point	: -37 °C
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Density	: 0.759 g/ml (@ 20 °C)
Molecular mass	: 36.461 g/mol
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
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

Safety Data Sheet

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

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
Glass. Strong acids. Strong 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)Acute toxicity (dermal)Acute toxicity (inhalation)	Harmful if swallowed. Not classified Toxic if inhaled.
Hydrochloric acid, 2 M in diethyl ether (7647	-01-0)
ATE US (oral)	878.602 mg/kg body weight
ATE US (vapors)	3 mg/l/4h
Diethyl ether (60-29-7)	
LD50 oral rat	1215 mg/kg
LD50 dermal rabbit	20 ml/kg
LC50 Inhalation - Rat [ppm]	32000 ppm/4h
Hydrochloric acid, anhydrous (7647-01-0)	
LD50 oral rat	238 – 277 mg/kg
LD50 dermal rabbit	> 5010 mg/kg
LC50 Inhalation - Rat	1.68 mg/l (Exposure time: 1 h)
Water (7732-18-5)	
LD50 oral rat	> 90 ml/kg
Skin corrosion/irritation : Serious eye damage/irritation : Respiratory or skin sensitization : Germ cell mutagenicity :	Causes severe skin burns. Causes serious eye damage. Not classified Not classified
Carcinogenicity	Not classified

Safety Data Sheet

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

Hydrochloric acid, anhydrous (7647-01-0)	
IARC group	3 - Not classifiable
Reproductive toxicity	: Not classified
STOT-single exposure	: May cause drowsiness or dizziness. May cause respiratory irritation.
Diethyl ether (60-29-7)	
STOT-single exposure	May cause drowsiness or dizziness. May cause respiratory irritation.
Hydrochloric acid, anhydrous (7647-01-0)	
STOT-single exposure	May cause respiratory irritation.
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.
Symptoms/effects 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 Diethyl ether (60-29-7) LC50 - Fish [1] 2560 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through]) LC50 - Fish [2] > 10000 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential	
Diethyl ether (60-29-7)	
Partition coefficient n-octanol/water (Log Pow)	0.82 (at 23 °C)
12.4. Mobility in soil	

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations	S
13.1. Disposal methods	
Waste treatment methods Product/Packaging disposal recommendations Additional information	 Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber. Dispose of contents/container in accordance with licensed collector's sorting instructions. Recycle the material as far as possible.

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 UN-No. (TDG) UN-No. (IMDG) UN-No. (IATA)	: UN1155 : Not applicable : 1155 : 1155
14.2. UN proper shipping name	
Proper Shipping Name (DOT) Proper Shipping Name (TDG) Proper Shipping Name (IMDG) Proper Shipping Name (IATA)	 Diethyl ether Not applicable DIETHYL ETHER (ETHYL ETHER) Diethyl ether
14.3. Transport hazard class(es)	
DOT Transport hazard class(es) (DOT) Hazard labels (DOT)	: 3 : 3
TDG Transport hazard class(es) (TDG)	: Not applicable
IMDG Transport hazard class(es) (IMDG) Hazard labels (IMDG)	: 3 : 3
IATA Transport hazard class(es) (IATA) Hazard labels (IATA)	
14.4. Packing group	
Packing group (DOT) Packing group (TDG) Packing group (IMDG) Packing group (IATA)	: I : Not applicable : I : I
14.5. Environmental hazards	
Other information	: No supplementary information available.

Safety Data Sheet

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

14.6. Special precautions for user

DOT UN-No.(DOT)	: UN1155
DOT Special Provisions (49 CFR 172.102)	: T11 - 6 178.274(d)(2) Normal 178.275(d)(3) 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.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 150
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 201
DOT Packaging Bulk (49 CFR 173.xxx)	: 243
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 1L
DOT Quantity Limitations Cargo aircraft only (49	: 30 L
CFR 175.75)	
DOT Vessel Stowage Location	: E - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a
ő	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 is prohibited from
	carriage on passenger vessels in which the limiting number of passengers is exceeded.
DOT Vessel Stowage Other	: 40 - Stow "clear of living quarters"
TDG Emergency Response Guide (ERG) Number	: 127
Emergency Response Guide (ERG) Number	: 127
Emergency Response Guide (ERG) Number	
Emergency Response Guide (ERG) Number IMDG Limited quantities (IMDG)	: 0
Emergency Response Guide (ERG) Number IMDG Limited quantities (IMDG) Excepted quantities (IMDG)	: 0 : E3
Emergency Response Guide (ERG) Number IMDG Limited quantities (IMDG) Excepted quantities (IMDG) Packing instructions (IMDG)	: 0 : E3 : P001
Emergency Response Guide (ERG) Number IMDG Limited quantities (IMDG) Excepted quantities (IMDG) Packing instructions (IMDG) Tank instructions (IMDG)	: 0 : E3 : P001 : T11
Emergency Response Guide (ERG) Number IMDG Limited quantities (IMDG) Excepted quantities (IMDG) Packing instructions (IMDG) Tank instructions (IMDG) Tank special provisions (IMDG)	: 0 : E3 : P001 : T11 : TP2
Emergency Response Guide (ERG) Number IMDG Limited quantities (IMDG) Excepted quantities (IMDG) Packing instructions (IMDG) Tank instructions (IMDG) Tank special provisions (IMDG) EmS-No. (Fire)	 : 0 : E3 : P001 : T11 : TP2 : F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS
Emergency Response Guide (ERG) Number IMDG Limited quantities (IMDG) Excepted quantities (IMDG) Packing instructions (IMDG) Tank instructions (IMDG) Tank special provisions (IMDG) EmS-No. (Fire) EmS-No. (Spillage)	 : 0 : E3 : P001 : T11 : TP2 : F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS : S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS
Emergency Response Guide (ERG) Number IMDG Limited quantities (IMDG) Excepted quantities (IMDG) Packing instructions (IMDG) Tank instructions (IMDG) Tank special provisions (IMDG) EmS-No. (Fire) EmS-No. (Spillage) Stowage category (IMDG)	 : 0 : E3 : P001 : T11 : TP2 : F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS : S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS : E
Emergency Response Guide (ERG) Number IMDG Limited quantities (IMDG) Excepted quantities (IMDG) Packing instructions (IMDG) Tank instructions (IMDG) Tank special provisions (IMDG) EmS-No. (Fire) EmS-No. (Spillage)	 : 0 : E3 : P001 : T11 : TP2 : F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS : S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS
Emergency Response Guide (ERG) Number IMDG Limited quantities (IMDG) Excepted quantities (IMDG) Packing instructions (IMDG) Tank instructions (IMDG) Tank special provisions (IMDG) EmS-No. (Fire) EmS-No. (Spillage) Stowage category (IMDG) Flash point (IMDG)	 : 0 : E3 : P001 : T11 : TP2 : F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS : S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS : E
Emergency Response Guide (ERG) Number IMDG Limited quantities (IMDG) Excepted quantities (IMDG) Packing instructions (IMDG) Tank instructions (IMDG) Tank special provisions (IMDG) EmS-No. (Fire) EmS-No. (Spillage) Stowage category (IMDG) Flash point (IMDG) IATA	 : 0 : E3 : P001 : T11 : TP2 : F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS : S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS : E : -40°C c.c.
Emergency Response Guide (ERG) Number IMDG Limited quantities (IMDG) Excepted quantities (IMDG) Packing instructions (IMDG) Tank instructions (IMDG) Tank special provisions (IMDG) EmS-No. (Fire) EmS-No. (Spillage) Stowage category (IMDG) Flash point (IMDG) IATA PCA Excepted quantities (IATA)	 : 0 : E3 : P001 : T11 : TP2 : F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS : S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS : E
Emergency Response Guide (ERG) Number IMDG Limited quantities (IMDG) Excepted quantities (IMDG) Packing instructions (IMDG) Tank instructions (IMDG) Tank special provisions (IMDG) EmS-No. (Fire) EmS-No. (Spillage) Stowage category (IMDG) Flash point (IMDG) IATA PCA Excepted quantities (IATA) PCA Limited quantities (IATA)	 : 0 : E3 : P001 : T11 : TP2 : F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS : S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS : E : -40°C c.c.
Emergency Response Guide (ERG) Number IMDG Limited quantities (IMDG) Excepted quantities (IMDG) Packing instructions (IMDG) Tank instructions (IMDG) Tank special provisions (IMDG) EmS-No. (Fire) EmS-No. (Spillage) Stowage category (IMDG) Flash point (IMDG) IATA PCA Excepted quantities (IATA) PCA limited quantity max net quantity (IATA)	 : 0 : E3 : P001 : T11 : TP2 : F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS : S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS : E : -40°C c.c.
Emergency Response Guide (ERG) Number IMDG Limited quantities (IMDG) Excepted quantities (IMDG) Packing instructions (IMDG) Tank instructions (IMDG) Tank special provisions (IMDG) EmS-No. (Fire) EmS-No. (Spillage) Stowage category (IMDG) Flash point (IMDG) Flash point (IMDG) IATA PCA Excepted quantities (IATA) PCA Limited quantities (IATA) PCA limited quantity max net quantity (IATA) PCA packing instructions (IATA)	 0 E3 P001 T11 TP2 F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS E -40°C c.c.
Emergency Response Guide (ERG) Number IMDG Limited quantities (IMDG) Excepted quantities (IMDG) Packing instructions (IMDG) Tank instructions (IMDG) Tank special provisions (IMDG) EmS-No. (Fire) EmS-No. (Spillage) Stowage category (IMDG) Flash point (IMDG) IATA PCA Excepted quantities (IATA) PCA limited quantity max net quantity (IATA) PCA packing instructions (IATA) PCA max net quantity (IATA)	 : 0 : E3 : P001 : T11 : TP2 : F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS : S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS : E : -40°C c.c.
Emergency Response Guide (ERG) Number IMDG Limited quantities (IMDG) Excepted quantities (IMDG) Packing instructions (IMDG) Tank instructions (IMDG) Tank special provisions (IMDG) EmS-No. (Fire) EmS-No. (Spillage) Stowage category (IMDG) Flash point (IMDG) IATA PCA Excepted quantities (IATA) PCA Limited quantities (IATA) PCA limited quantity max net quantity (IATA) PCA max net quantity (IATA) PCA max net quantity (IATA) PCA packing instructions (IATA)	 : 0 : E3 : P001 : T11 : TP2 : F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS : S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS : E : -40°C c.c. : E3 : Forbidden : Forbidden : Forbidden : 351 : 1L : 361
Emergency Response Guide (ERG) Number IMDG Limited quantities (IMDG) Excepted quantities (IMDG) Packing instructions (IMDG) Tank instructions (IMDG) Tank special provisions (IMDG) EmS-No. (Fire) EmS-No. (Spillage) Stowage category (IMDG) Flash point (IMDG) IATA PCA Excepted quantities (IATA) PCA limited quantity max net quantity (IATA) PCA packing instructions (IATA) PCA max net quantity (IATA)	 : 0 : E3 : P001 : T11 : TP2 : F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS : S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS : E : -40°C c.c. : E3 : Forbidden : Forbidden : Forbidden : 351 : 1L

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

Not applicable

Safety Data Sheet

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

SECTION 15: Regulatory information 15.1. US Federal regulations All components of this product are present and listed as Active 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. CAS-No. 7647-01-0 1.5 - 7.5%Hydrochloric acid, anhydrous Diethyl ether (60-29-7) 100 lb CERCLA RQ Hydrochloric acid, anhydrous (7647-01-0) CERCLA RQ 5000 lb SARA Section 302 Threshold Planning Quantity 500 (gas only) (TPQ) **15.2. International regulations** CANADA

Diethyl ether (60-29-7)

Listed on the Canadian DSL (Domestic Substances List)

Hydrochloric acid, anhydrous (7647-01-0)

Listed on the Canadian DSL (Domestic Substances List)

Water (7732-18-5)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Diethyl ether (60-29-7)

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

Hydrochloric acid, anhydrous (7647-01-0)

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

Safety Data Sheet

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

Water (7732-18-5)

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

National regulations

Diethyl ether (60-29-7)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory) 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 Japanese ISHL (Industrial Safety and Health Law) Listed on KECL/KECI (Korean Existing Chemicals Inventory) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on CICR (Turkish Inventory and Control of Chemicals) Listed on the TCSI (Taiwan Chemical Substance Inventory)

Hydrochloric acid, anhydrous (7647-01-0)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory) 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 KECL/KECI (Korean Existing Chemicals Inventory) 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 Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on CICR (Turkish Inventory and Control of Chemicals)

Water (7732-18-5)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)

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

Listed on KECL/KECI (Korean Existing Chemicals Inventory)

Listed on NZIoC (New Zealand Inventory of Chemicals)

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

Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

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

Component	State or local regulations
Diethyl ether(60-29-7)	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
Hydrochloric acid, anhydrous(7647-01-0)	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

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

Safety Data Sheet

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

Full text of H-phr	rases	
H224	Extremely flammable liquid and vapor	
H280	Contains gas under pressure; may explode if heated	
H290	May be corrosive to metals	
H302	Harmful if swallowed	
H314	Causes severe skin burns and eye damage	
H315	Causes skin irritation	
H318	Causes serious eye damage	
H319	Causes serious eye irritation	
H331	Toxic if inhaled	
H335	May cause respiratory irritation	
H336	May cause drowsiness or dizziness	
H412	Harmful to aquatic life with long lasting effects	
NFPA health hazar NFPA fire hazard NFPA reactivity	 3 - Materials that, under emergency conditions, can cause serious or permanent injury. 3 - Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions. 0 - Material that in themselves are normally stable, even under fire conditions. 	
Hazard Rating Health Flammability	 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given * - Chronic (long-term) health effects may result from repeated overexposure 3 Serious Hazard - Materials capable of ignition under almost all normal temperature conditions. Includes flammable liquids with flash points below 73 F and boiling points above 100 F. as well 	
Physical	as liquids with flash points between 73 F and 100 F. (Classes IB IC) : 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.	

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.