SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Sour Water US

Version	Revision Date:	SDS Number:	Print Date: 04/01/2022
1.0	04/01/2022	VRAM00035	Date of last issue: 04/01/2022

SECTION 1. IDENTIFICATION

Product name : Sour Water US

Product code : 002D6735

Manufacturer or supplier's details

Manufacturer/Supplier : **Vertex Refining Alabama LLC**
400 Industrial Pkwy
Ext. East
Saraland, AL 36571

SDS Request : 251-679-7180
Customer Service : 251-679-7180

Emergency telephone number

Spill Information : 1-800-424-9300
Health Information : 1-800-424-9300

Recommended use of the chemical and restrictions on use

Recommended use : Intermediate Refinery Stream.

Restrictions on use :
This product must not be used in applications other than those listed in Section 1 without first seeking the advice of the supplier.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Acute toxicity (Inhalation) : Category 2

Skin corrosion : Category 1B

Eye irritation : Category 1

Short-term (acute) aquatic hazard : Category 2

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : PHYSICAL HAZARDS:
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
H330 Fatal if inhaled.
H314 Causes severe skin burns and eye damage.
ENVIRONMENTAL HAZARDS:
H401 Toxic to aquatic life.

Precautionary statements :

Prevention:

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P271 Use only outdoors or in a well-ventilated area.
P284 In case of inadequate ventilation wear respiratory protection.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.

Response:

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310 Immediately call a POISON CENTER/doctor.
P320 Specific treatment is urgent (see supplemental first aid instructions on this label).
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 or shower.
P363 Wash contaminated clothing before reuse.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage:

P405 Store locked up.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Disposal:

P501 Dispose of contents and container to appropriate waste site or reclaimer in accordance with local and national regulations.

Other hazards which do not result in classification

Hydrogen sulphide (H2S), an extremely flammable and toxic gas, and other hazardous vapours may evolve and collect in the headspace of storage tanks, transport vessels and other enclosed containers.
The classification of this material is based on OSHA HCS 2012 criteria.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	Synonyms	CAS-No.	Concentration (% w/w)
Hydrogen sulfide	hydrogen sulphide (Gas)	7783-06-4	0 - 2
Ammonia	ammonia, anhydrous (Anhydrous)	7664-41-7	0 - 5
Water		7732-18-5	93 - 100

Hydrogen sulphide may be present both in the liquid and the vapour. Composition is complex and varies with the source of the crude oil and the contributing process plants at that time.

SECTION 4. FIRST-AID MEASURES

General advice : DO NOT DELAY.
Keep victim calm. Obtain medical treatment immediately.
Vapourisation of H2S that has been trapped in clothing can be dangerous to rescuers. Maintain respiratory protection to avoid contamination from the victim to rescuer. Mechanical ventilation should be used to resuscitate if at all possible.

If inhaled : Call emergency number for your location / facility.
Remove to fresh air. Do not attempt to rescue the victim unless proper respiratory protection is worn. If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting, or unresponsive, give 100% oxygen with rescue breathing or Cardio-Pulmonary Resuscitation as required and transport to the nearest medical facility.

Casualties suffering ill effects as a result of exposure to hydrogen sulphide should be removed to fresh air.
Do not attempt to rescue the victim unless proper respiratory protection is worn. If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting, or unresponsive, give 100% oxygen with rescue breathing or Cardiopulmonary Resuscitation (CPR) as required and transport to the nearest medical facility.

In case of skin contact : Call emergency number for your location / facility.
Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
All burns should receive medical attention.

In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses, if present and easy to do. Continue rinsing.
Transport to the nearest medical facility for additional treatment.
All burns should receive medical attention.

If swallowed	:	Do not induce vomiting. If victim is alert, rinse mouth and drink 1/2 to 1 glass of water to help dilute the material. Do not give liquids to a drowsy, convulsing, or unconscious person. Transport to nearest medical facility for additional treatment.
Most important symptoms and effects, both acute and delayed	:	Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing. Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, lightheadedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death. Corrosive to skin. Contact with the skin can cause chemical burns, redness, swelling, and tissue damage. Corrosive to eyes. Contact can cause severe eye damage including chemical burns, pain, clouding of the eye surface, inflammation of the eye, and may result in permanent loss of vision. Swallowing of corrosive chemicals may cause immediate pain and burning in the mouth, throat, and stomach followed by vomiting and diarrhea. Burns and tearing of the esophagus and stomach are possible.
Protection of first-aiders	:	When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
Indication of any immediate medical attention and special treatment needed	:	IMMEDIATE TREATMENT IS EXTREMELY IMPORTANT! Artificial respiration and/or oxygen may be necessary. Call a doctor or poison control center for guidance. Treat symptomatically. Hydrogen sulphide (H2S) - CNS asphyxiant. May cause rhinitis, bronchitis and occasionally pulmonary oedema after severe exposure. CONSIDER: Oxygen therapy. Consult a Poison Control Center for guidance.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Not applicable
Unsuitable extinguishing media	:	Not applicable
Specific hazards during fire-	:	Hydrogen sulphide (H2S) and other toxic sulphur oxides may

fighting		be given off when this material is heated. Do not depend on sense of smell for warning.
Further information	:	Non-flammable liquid.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Do not breathe mists, aerosols.
Environmental precautions	:	Take measures to minimise the effects on groundwater. Contain residual material at affected sites to prevent material from entering drains (sewers), ditches, and waterways. Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers.
Methods and materials for containment and cleaning up	:	For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers. Avoid contact with skin, eyes and clothing. Observe all relevant local and international regulations. Evacuate the area of all non-essential personnel. Ventilate contaminated area thoroughly.
Additional advice	:	For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet. Local authorities should be advised if significant spillages cannot be contained. This material is covered by EPA's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Petroleum Exclusion. Therefore, releases to the environment may not be reportable under CERCLA. U.S. regulations may require reporting releases of this material to the environment which exceed the reportable quantity (refer to Chapter 15) to the National Response Center at (800) 424-8802.

Under Section 311 of the Clean Water Act (CWA) this material is considered an oil. As such, spills into surface waters must be reported to the National Response Center at (800) 424-8802.

SECTION 7. HANDLING AND STORAGE

Technical measures	:	Avoid breathing of or direct contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material. Prevent spillages.
Advice on safe handling	:	Avoid prolonged or repeated contact with skin. When using do not eat or drink. Earth all equipment. Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. The inherent toxic and olfactory (sense of smell) fatiguing properties of hydrogen sulphide require that air monitoring alarms be used if concentrations are expected to reach harmful levels such as in enclosed spaces, heated transport vessels and spill or leak situations. If the air concentration exceeds 10 ppm, the area should be evacuated unless respiratory protection is in use. Hydrogen sulphide (H2S) and other toxic sulphur oxides may be given off when this material is heated. Do not depend on sense of smell for warning.
Avoidance of contact	:	Not applicable
Product Transfer	:	Keep containers closed when not in use. Even when the product is not itself flammable, such vapours may be present as a result of operations involving a previously handled product, or faulty vapour recovery systems.
Further information on storage stability	:	Drum and small container storage: Drums should be stacked to a maximum of 3 high. Use properly labeled and closable containers. Tank storage: Tanks must be specifically designed for use with this product. Bulk storage tanks should be diked (bunded). Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.

Packaging material	:	Suitable material: For containers and container linings, use materials specifically approved for use with this product. Unsuitable material: Compatibility should be checked with the manufacturer.
Specific use(s)	:	Not applicable.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Hydrogen sulfide	7783-06-4	TWA	5 ppm 7 mg/m3	2009/161/EU
	Further information: This value is for information where there is no national limit value available.			
Hydrogen sulfide		STEL	10 ppm 14 mg/m3	2009/161/EU
	Further information: This value is for information where there is no national limit value available.			
Hydrogen sulfide		TWA	1 ppm	ACGIH
	Further information: Central Nervous System impairment, Upper Respiratory Tract irritation			
Hydrogen sulfide		STEL	5 ppm	ACGIH
	Further information: Central Nervous System impairment, Upper Respiratory Tract irritation			
Hydrogen sulfide		CEIL	20 ppm	OSHA Z-2
Hydrogen sulfide		Peak	50 ppm (10 minutes once only if no other measured exposure occurs)	OSHA Z-2
Hydrogen sulfide		TWA	1 ppm	ACGIH
Hydrogen sulfide		STEL	5 ppm	ACGIH
Ammonia	7664-41-7	TWA	50 ppm 35 mg/m3	OSHA Z-1
Ammonia		TWA	25 ppm (Ammonia)	ACGIH
Ammonia		STEL	35 ppm (Ammonia)	ACGIH

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
Validated exposure measurement methods should be applied by a competent person and sam-

ples analysed by an accredited laboratory.
Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.
National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods http://www.cdc.gov/niosh/
Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods http://www.osha.gov/
Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances http://www.hse.gov.uk/
Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany http://www.dguv.de/inhalt/index.jsp
L'Institut National de Recherche et de Securité, (INRS), France http://www.inrs.fr/accueil

Engineering measures : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances.
Appropriate measures include:
Use sealed systems as far as possible.
Local exhaust ventilation is recommended.
Eye washes and showers for emergency use.

General Information:

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.
Practice good housekeeping.
Define procedures for safe handling and maintenance of controls.
Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.
Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.
Do not ingest. If swallowed then seek immediate medical assistance.

Personal protective equipment

Respiratory protection : If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure Breathing Apparatus.
All respiratory protection equipment and use must be in accordance with local regulations.

Respirator selection, use and maintenance should be in accordance with the requirements of the OSHA Respiratory Protection Standard, 29 CFR 1910.134.

Always wear a self-contained breathing apparatus or full-face airline respirator when using this chemical.

In areas where hydrogen sulphide vapours may accumulate, a positive-pressure air-supplied respirator is advised.

Hand protection

Remarks	:	Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739, AS/NZS:2161) made from the following materials may provide suitable chemical protection: When prolonged or frequent repeated contact occurs, Nitrile gloves may be suitable. (Breakthrough time of > 240 minutes.) For incidental contact/splash protection Neoprene, PVC gloves may be suitable. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
Eye protection	:	Wear goggles for use against liquids and gas, combined with face shield with chin guard.
Skin and body protection	:	Where risk of splashing or in spillage clean up, use chemical resistant one-piece overall with integral hood, chemical resistant knee length boots and chemical resistant gloves. Otherwise use chemical resistant apron and gauntlets.
Protective measures	:	Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
Hygiene measures	:	Ensure that all local regulations regarding handling and storage facilities are followed.

Environmental exposure controls

General advice	:	Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour. Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation. Information on accidental release measures are to be found in section 6. Take appropriate measures to fulfil the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	off-white
Odour	:	Odourless to faint odour of rotten eggs.
Odour Threshold	:	Data not available
pH	:	Data not available
Melting point/freezing point	:	Data not available
Initial boiling point and boiling range	:	>= 100 °C / >= 212 °F
Flash point	:	>= 100 °C / >= 212 °F
Evaporation rate	:	Data not available
Upper explosion limit / upper flammability limit	:	Data not available
Lower explosion limit / Lower flammability limit	:	Data not available
Vapour pressure	:	Not applicable
Relative vapour density	:	Data not available
Relative density	:	Data not available
Density	:	1,000.0 kg/m3 (15.0 °C / 59.0 °F)
Solubility(ies)		

Water solubility	:	soluble
Solubility in other solvents	:	Data not available
Partition coefficient: n-octanol/water	:	Data not available
Auto-ignition temperature	:	Data not available
Decomposition temperature	:	Data not available
Viscosity		
Viscosity, kinematic	:	Not applicable
Conductivity	:	This material is not expected to be a static accumulator.

SECTION 10. STABILITY AND REACTIVITY

Chemical stability	:	Stable under normal conditions of use.
Possibility of hazardous reactions	:	No hazardous reaction is expected when handled and stored according to provisions
Conditions to avoid	:	Heat
Incompatible materials	:	Not applicable
Hazardous decomposition products	:	Hydrogen sulphide. Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment	:	Information given is based on product data, a knowledge of the components and the toxicology of similar products.Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Information on likely routes of exposure
Skin and eye contact are the primary routes of exposure although exposure may occur through inhalation or following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity	:	LD 50 (Rat): > 2,000 mg/kg Remarks: Low toxicity:

Based on available data, the classification criteria are not met.

Acute inhalation toxicity : LC 50 (Rat): >0,5 - <=2,0
Exposure time: 4 h
Remarks: Highly toxic and may be fatal if inhaled. (Hydrogen Sulfide)

Acute dermal toxicity : LD 50 (Rabbit): > 2,000 mg/kg
Remarks: Low toxicity:
Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Product:
Remarks: Causes severe burns.

Serious eye damage/eye irritation

Product:
Remarks: Causes serious eye damage.

Remarks: Irritating to eyes. (Hydrogen Sulfide)

Respiratory or skin sensitisation

Product:
Remarks: Not a sensitiser.
Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Product:

: Remarks: Not mutagenic., Based on available data, the classification criteria are not met.

Germ cell mutagenicity- Assessment : This product does not meet the criteria for classification in categories 1A/1B.

Carcinogenicity

Product:
Remarks: Not a carcinogen., Based on available data, the classification criteria are not met.

Carcinogenicity - Assessment : This product does not meet the criteria for classification in categories 1A/1B.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

: Remarks: Does not impair fertility., Not a developmental toxicant., Based on available data, the classification criteria are not met.

Reproductive toxicity - Assessment : This product does not meet the criteria for classification in categories 1A/1B.

STOT - single exposure

Product:

Remarks: Inhalation of vapours or mists cause irritation to the respiratory system. (Hydrogen Sulfide)

STOT - repeated exposure

Product:

Remarks: Low systemic toxicity on repeated exposure., Based on available data, the classification criteria are not met.

Aspiration toxicity

Product:

Not an aspiration hazard.

Further information

Product:

Remarks: Classifications by other authorities under varying regulatory frameworks may exist.

Remarks: H2S has a broad range of effects dependent on the airborne concentration and length of exposure: 0.02 ppm odour threshold, smell of rotten eggs; 10 ppm eye and respiratory tract irritation; 100 ppm coughing, headache, dizziness, nausea, eye irritation, loss of sense of smell in minutes; 200 ppm potential for pulmonary oedema after >20-30 minutes; 500 ppm loss of consciousness after short exposures, potential for respiratory arrest; >1000ppm immediate loss of consciousness, may lead rapidly to death, prompt cardiopulmonary resuscitation may be required. Do not depend on sense of smell for warning. H2S causes rapid olfactory fatigue (deadens sense of smell). There is no evidence that H2S will accumulate in the body tissue after repeated exposure.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Incomplete ecotoxicological data are available for this product. The information given below is based partly on a knowledge of the components and the ecotoxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) : Remarks: Toxic
LL/EL/IL50 > 1 <= 10 mg/l

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) : Remarks: Toxic
LL/EL/IL50 > 1 <= 10 mg/l

Toxicity to algae (Acute toxicity) : Remarks: Toxic
LL/EL/IL50 > 1 <= 10 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

Toxicity to microorganisms (Acute toxicity) : Remarks: Toxic
LL/EL/IL50 > 1 <= 10 mg/l

Persistence and degradability

Product:

Biodegradability : Remarks: Major constituents are inherently biodegradable.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Does not bioaccumulate significantly.

Mobility in soil

Product:

Mobility : Remarks: Dissolves in water.

Other adverse effects

no data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Recover or recycle if possible.
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
Do not dispose into the environment, in drains or in water courses
Do not dispose of tank water bottoms by allowing them to drain into the ground.
Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.

Contaminated packaging : Send to drum recoverer or metal reclaimer.
Drain container thoroughly.
Do not pollute the soil, water or environment with the waste container.
Comply with any local recovery or waste disposal regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

International Regulations

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

Not applicable for product as supplied. MARPOL Annex 1 rules apply for bulk shipments by sea.

Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information **:** Not for Transport. If product needs to be shipped by rail, vessel, air, or truck, the product needs to be tested for Dangerous Goods classification before release into transport.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Ammonia	7664-41-7	100	2000

*: Vertex HSSE classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore re-leases to the environment are not reportable under CERCLA., The components with RQs are given for information.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

Components	CAS-No.	Component TPQ (lbs)
Ammonia	7664-41-7	500
Hydrogen sulfide	7783-06-4	500

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

Ammonia	7664-41-7	>= 5 - < 10 %
Hydrogen sulfide	7783-06-4	>= 1 - < 5 %

SARA 311/312 Hazards : Skin corrosion or irritation
Acute toxicity (any route of exposure)
Serious eye damage or eye irritation

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Hydrogen sulfide	7783-06-4	>= 1 - < 5 %

Clean Water Act

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Hydrogen sulfide	7783-06-4	2 %
Ammonia	7664-41-7	5 %

US State Regulations

Pennsylvania Right To Know

Ammonia	7664-41-7
Hydrogen sulfide	7783-06-4

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

California List of Hazardous Substances

Ammonia	7664-41-7
Hydrogen sulfide	7783-06-4

California List of Acutely Hazardous Chemicals, Toxics and Reactives

Ammonia	7664-41-7
Hydrogen sulfide	7783-06-4

Other regulations:

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reactivity): 3, 1, 0

Full text of other abbreviations

2009/161/EU	:	2009/161/EU
ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
OSHA Z-2	:	USA. Occupational Exposure Limits (OSHA) - Table Z-2
2009/161/EU / STEL	:	Short term exposure limit
2009/161/EU / TWA	:	Limit Value - eight hours
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
ACGIH / STEL	:	Short-Term Exposure Limit (STEL)
OSHA Z-1 / TWA	:	8-hour time weighted average
OSHA Z-2 / CEIL	:	Acceptable ceiling concentration
OSHA Z-2 / Peak	:	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift
Abbreviations and Acronyms	:	The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites. ACGIH = American Conference of Governmental Industrial Hygienists ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road AICS = Australian Inventory of Chemical Substances ASTM = American Society for Testing and Materials BEL = Biological exposure limits BTEX = Benzene, Toluene, Ethylbenzene, Xylenes CAS = Chemical Abstracts Service CEFIC = European Chemical Industry Council CLP = Classification Packaging and Labelling COC = Cleveland Open-Cup DIN = Deutsches Institut fur Normung DMEL = Derived Minimal Effect Level DNEL = Derived No Effect Level DSL = Canada Domestic Substance List EC = European Commission EC50 = Effective Concentration fifty ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals ECHA = European Chemicals Agency EINECS = The European Inventory of Existing Commercial Chemical Substances EL50 = Effective Loading fifty ENCS = Japanese Existing and New Chemical Substances

Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level
OE_HPV = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of Chemicals
RID = Regulations Relating to International Carriage of Dangerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

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