



DATASHEET

ENVIRO-SCRUB VT

DESCRIPTION

Enviro-Scrub VT is a liquid solution which removes H₂S from hydrocarbon liquids, natural gas, gas streams, waste-water streams, and scrubber systems. This product is non-hazardous and reacts immediately to produce a non-reversible, non-hazardous stable compound. Unlike caustic based products, Enviro-Scrub VT is not effected by carbon dioxide. This product is a cost effective alternative to liquid caustic, sodium hypochlorite, sodium nitrate, liquid sponge and other forms of H₂S control. The reacted solution is water soluble, forms fewer solids, and is readily biodegradable.

PRODUCT USES & APPLICATIONS

- Tank Cleaning
- Waste Water Odor Control
- Vapor Scrubber Systems
- Municipals
- Remediation

APPLICATION INSTRUCTIONS

Dilution Rate	10% by volume
Application Method	Spray System or Scrubber
Reaction Rate	5# (1.8 gallons) of pure Enviro-Scrub VT is needed to neutralize 1# of H ₂ S

Additional Instructions: Strongest solution should be injected at the back of the system. This allows weaker solution to be reacted first in the scrubber so that the exiting solution has been fully reacted. Contact Vapor Tech for more explanation.

HAZARDOUS INFORMATION

Specific Hazard	Eye and skin irritant
Flash Point (°F)	Above 120°
Biodegradability	Excellent
pH	10-11.5 (10% solution)
Unusual Hazards	None

PACKAGING INFORMATION

Available Quantities	5, 30, 55, 275, 330 and tanker load
Packaging Material	Poly
Other Information	Do not let product freeze.

CASE STUDY & APPLICATION INFO

December 12, 2007 Asphalt Production Facility

Enviro-Scrub VT was used in a vapor scrubber system to control H₂S stemming from asphalt production. The levels of H₂S before the scrubber were 500-600 ppm. A multi-tower vapor scrubber system was used to treat these vapors. After going through the first tower with the Enviro-Scrub VT the H₂S levels were down to 29. After the second tower the H₂S levels were 0. The third tower was not even needed but is used as extra level of protection. The effluent coming from the scrubber was deemed non-haz and was able to go directly into the sewer.

May 15, 2009 Freeport Chemical Facility

Enviro-Scrub VT was used on a small job for H₂S with one of Vapor Tech's PPS-24 scrubber units. Incoming H₂S levels were 350. After the initial one tower pass the H₂S levels were 0. No polishing carbon media was needed which saved the customer over \$3,000.00.

GHS SAFETY DATA SHEET 'ENVIRO-SCRUB VT'

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Product Name..... Enviro-Scrub VT
 Chemical Use..... Hydrogen Sulfide Neutralizer
 Chemical Family..... Mixture
 Issue Date of SDS..... 7/1/2017

MANUFACTURER:

Vapor Technologies, Inc.
 7200 Williams Street
 Hitchcock, TX 77563
 (409) 316-0173
www.vapor-tech.net

EMERGENCY TELEPHONE NUMBER: (877) 840-0646

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION: Non-Hazardous

<u>Health</u>	<u>Environmental</u>	<u>Physical</u>
Skin Corrosion/Irritation: Category 2	None Known	None Known
Eye Damage/Irritation: Category 2A		
Acute Toxicity/Oral: Category 4		

GHS LABEL:



GHS07 Irritant

SIGNAL WORD:

WARNING

Hazard Statements

H302: Harmful if swallowed.
 H315: Causes skin irritation.
 H319: Causes serious eye irritation.

Precautionary Statements

P264: Wash hands thoroughly after handling.
 P270: Do not eat, drink or smoke when using this product.
 P280: Wear protective gloves.
 P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
 P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
 P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P330: Rinse Mouth.
 P332 + P313: If skin irritation occurs: Get medical advice/attention.
 P362: Take off contaminated clothing and wash before reuse.
 P337 + P313: If eye irritation persists: Get medical advice/attention.

	<u>NFPA</u>
Health	2
Flammability	0
Reactivity	0
Special Notice	-

<u>HMIS</u>	
2	Health
0	Flammability
1	Physical Hazard
B	PPE

0 - Minimal
 1 - Slight
 2 - Moderate
 3 - Serious
 4 - Severe
 B - Safety Glasses & Gloves

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENTS</u>	<u>CAS#</u>	<u>CONCENTRATION</u>
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine	4719-04-4	60-80%
2-aminoethanol	141-43-5	1-2%

Eye Contact..... Immediately flush eyes with plenty of water. Get medical attention if irritation develops or persists.
 Skin Contact..... Remove contaminated clothing. Wash skin with soap and water. Get medical attention if irritation develops or persists.
 Inhalation..... If exposed to excessive levels of fumes, remove to fresh air. Get medical attention if cough or other symptoms develop.
 Ingestion..... **DO NOT INDUCE VOMITING!** Drink one or two glasses of water and get medical attention immediately!

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Use foam, carbon dioxide, or water spray to extinguish flames.
 Unsuitable Extinguishing Media:..... No further relevant information available.
 Combustion Products: None.
 Fire Fighting Instructions..... As with any fire, wear sealed contained breathing apparatus, pressure demand MSHA/NIOSH (approved or equivalent) and full protective gear. Water runoff may cause environmental damage. Dike and collect water used to fight fire.

SECTION 6 - ACCIDENTAL RELEASE MEASURE

Personal Precautions:..... Prevent contact with skin and eyes. See Section 8.
 Environmental Precautions..... Prevent entry of product into drains, sewers, surface or ground water.
 Methods for Cleaning Up:..... Clean up spills immediately. Absorb spill with inert material (e.g., dry sand or earth), then place in a suitable container for disposal.

SECTION 7 - HANDLING AND STORAGE

Handling:..... Avoid contact with eyes, skin and clothing. Do not eat, drink or smoke when using this product. Wear protective gloves, clothing and eye protection when handling this product. Use in well ventilated areas.
 Storage..... Store in cool place in original container and keep away from direct sunlight. Keep container closed when not in use.
 Shelf-Life..... 12 Months
 Storage Temperature..... 5 - 43°C (41 - 110°F)

SECTION 8 EXPOSURE CONTROL / PERSONAL PROTECTION

EXPOSURE LIMITS:	Component	ACGIH (TLV)	ACGIH (STEL)	OSHA (PEL)
	2-aminoethanol	STEL 15mg/m3	6ppm 15 minutes	15mg/m3 15 minutes

Engineering Controls..... Good general ventilation should be sufficient to control airborne levels.

Personal Protective Equipment (PPE):

Eye Protection..... Wear safety-goggles with side shields (or goggles). Contact lenses should not be worn.
 Skin Protection..... Wear chemical resistant gloves.
 Respiratory Protection..... Avoid breathing vapors or mist.
 General Hygiene Consideration..... There are no known health hazards associated with this product when used as recommended.
 The following general hygiene considerations are recognized as common, good industrial hygiene practices:

- Wash hands after use and before eating.
- Avoid breathing vapors.
- Wear safety glasses and gloves.

Exposure Limits..... Not established for product as whole.

SECTION 9 - PHYSICAL & CHEMICAL PROPERTIES

Appearance..... Light Amber to dark Amber.
 Odor..... Amine-Like.
 Vapor Pressure..... 1.3 to 2.4 kPa (10 to 18mm Hg)
 Odor Threshold..... Not Determined.
 Vapor density..... >1 (Air = 1)
 pH..... 10 - 11.5 (10% Solution in Distilled Water).
 Relative Density..... Not Determined.
 Melting point/Freezing point:..... Not Determined / 30°F
 Solubility in water..... 100%
 Initial boiling point and range..... 230°F / Not Determined.
 Flash Point..... None.
 Evaporation rate..... Not Determined.
 Flammability (solid, gas):..... Excessive heat (>297F) will result in decomposition to formaldehyde
 Upper/Lower flammability or explosive limits:..... Not Established.
 Partition coefficient..... -1.3
 Auto igniting temperature..... Not Determined.
 Decomposition temperature..... Not Determined.
 Viscosity..... Dynamic (room temperature): 60-100 cP
 Specific Gravity (water = 1)..... 1.09

Reactivity..... No dangerous reaction known under conditions of normal use.
Chemical Stability..... Stable.
Hazardous Polymerization..... Will not occur.
Incompatibilities..... Strong Acids and Oxidizers.
Decomposition Products..... NOx, Carbon Oxides, Formaldehyde.

SECTION 11 - TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:..... Inhalation, Eye and Skin Contact

Acute symptoms and effects:

Eye..... Severe eye irritation. May cause burns.
Skin..... Moderately irritating to the skin.
Ingestion..... Moderately toxic. May cause gastric distress such as nausea, vomiting, diarrhea.
Inhalation:..... Prolonged or repeated exposure may cause irritation and burning to tissue.

Chronic Exposure:..... Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Toxicity Data: **LD50** **LC50**
 Not Known Not Known

Carcinogenicity..... Not a known carcinogen.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:..... No further relevant information available.
Mobility in soil:..... No further relevant information available.
Degradability:..... Expected to readily biodegrade.
Bioaccumulation:..... No further relevant information available.

SECTION 13 - DISPOSAL CONSIDERATION

ENVIRO-SCRUBV VT is not considered a hazardous waste under Federal Hazardous Waste Regulations 40 CFR 261. Please be advised, however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local authorities regarding the proper disposal of this material.

(Note: Adding chemicals, processing or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate, or otherwise inappropriate).

SECTION 14 - TRANSPORTATION INFORMATION

- A. **USA:** UN Number..... Not Regulated.
- D.O.T UN Proper Shipping Name..... Not Regulated.
- Packaging group..... Not Regulated.
- Technical Shipping Name..... Not Regulated.
- D.O.T. Label..... Not Regulated.
- D.O.T. Placard..... Not Regulated.
- Freight Class Package..... Class 55
- B. **CANADA:** TDG..... Not Regulated.
- C. **ENGLAND:** Approved Carriage List..... Not Regulated.

SECTION 15 - REGULATORY INFORMATION

- A. **USA:** TSCA Status..... All ingredients listed on TSCA Inventory.
- SARA TITLE III, 302/303 EHS..... None
- SARA TITLE III, 304 HS..... None
- SARA TITLE III, 311/312..... None
- SARA TITLE III, 313..... None
- B. **CANADA:** DSL/NDSL..... All ingredients are listed.
- WHMIS..... Not Classified.
- C. **EC:** EINECS..... All ingredients are listed.

SECTION 16 - OTHER INFORMATION

For details on specific requirements, you should contact the appropriate agency in your state.

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