Deepak Nitrite Limited

Material Safety Data Sheet	**Nitrosylsulphuric acid (NSA)**

1 Product and Company Identification :

Product Name : **Nitrosylsulphuric acid (NSA)**

Other/Generic Names : Nitrosyl Sulfate;
Nitrosylsulfuric Acid;
Nitrosyl hydrogensulfate;
Sulfuric acid hydrogen (nitrogen oxide) salt;
Sulfuric nitrous anhydride;
Nitrosylsulfuric Acid, 40% wt solution in Sulfuric acid;
Nitrosylsulfuricacid, 40% in sulphuric acid ;
Nitrosyl sulfuric acid solution;

CAS No. : **7782-78-7**

Product use : Nitrosylsulfuric acid is used for diazotization, nitrosation, oxidation and oximation reactions.

Supplier : Deepak Nitrite Ltd.
Aaditya-I, National Highway No. 8, Chhani Road,
Vadodara - 390 024, India
Manufacturing facilities at :
Vadodara, Roha, Taloja & Hyderabad.
Contact no. : +91-9904406400

For Chemical Emergency : Spill, Leak, Fire, Exposure, or Accident, Call CHEMTREC
Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-527-3887

2 Hazard Identification :

GHS classification :
Oxidizing liquid category 2 : H272 : may intensify fire ; Oxidizer
Corrosive liquid category 1 : H290 : May be corrosive to metals. **EC classification :**
O; R 8 Contact with combustible material may cause fire.
C; R 35 Causes severe burns.

Categories of danger : Oxidizing liquids , corrosive **Risk Phrases:**
R 8 : Contact with combustible material may cause fire.
R 14 : Reacts violently with water.
R 29 : Contact with water liberates toxic gas.
R 35 : Causes severe burns.

Safety Phrases:
S 8 : Keep container dry.
S 26 : In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 36/37/39 : Wear suitable protective clothing, gloves and eye/face protection.
S 45 : In case of accident or if you feel unwell, seek medical advice immediately.
(s h o w t h e l a b e l w h e r e p o s s i b l e)

Hazard pictograms

Hazard Symbols: O , C

Oxidizer and Corrosive

Precautionary Statement	P 370 + P 378 : Incase of fire use foam or dry powder for extinction. P 390 : Absorb spillage to prevent material damage. P 406 : Store in corrosive resistant/ container with resistant inner liner
Signal word	Danger
RETCS	CAS # 7782-78-7 not listed
WGK	WGK Germany : 3 Water Danger / Protection
Disposal	Dispose in a manner consistent with federal, state and local regulations.

3 Composition / Information on Ingredients :

Hazardous components :		Nitrosylsulphuric acid
Synonyms		Nitrosyl Sulfate; Nitrosylsulfuric; Nitrososulfuric acid; Nitrosylsulfuric Acid, 40% wt solution in Sulfuric acid; Nitrosylsulfuricacid, 40% in sulphuric acid ; Nitrosyl sulfuric acid solution; Nitrosylschwefelsure; Nitrosylsulfuric acid 40%; Nitrosyl hydrogensulfate; Sulfuric acid hydrogen (nitrogen oxide) salt; Sulfuric nitrous anhydride;
Chemical formula	:	HNO_5S
Molecular weight	:	127.08
CAS No.	:	7782-78-7
UN No.	:	3264
EINECS No.	:	231-964-2
Hazard symbols	:	O, C (Oxidizer, Corrosive)
Risk phrases	:	R-8, 14, 29, 35
Safety phrases	:	S-8, 26, 36/37/39, 45

4 First Aid Measures :

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Aldrich **-** 517070 www.sigma-aldrich.com Page 2 of 5.

If swallowed

Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5 Fire Fighting Measures:

As in any fire, wear a self-contained breathing apparatus, MSHA / NIOSH (approved or equivalent) and full protective gear. Strong oxidizer. Contact with combustible material may cause fire. Water reactive. Material will react with water and and may release flammable and/or toxic gas. Reacts with most metals to form highly flammable hydrogen gas, which can form explosive mixtures with air.

Fire Extinguishing Media : Substance is non combustible. Use most appropriate agent to extinguish surrounding fire. DO NOT USE WATER.

Suitable extinguishing media

Carbon dioxide (CO2) Dry powder

Extinguishing media which shall not be used for safety reasons

Water

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

6 Accidental Release Measures :

Personal precaution: Wear respirator, safety goggles, rubber boots and gloves. Absorb spills with inert material (e.g. sand or earth), then place in suitable container. **Personal precautions**

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. **Methods for cleaning up**

Soak up with inert absorbent material and dispose of as hazardous waste. Do not flush with water. Keep in suitable, closed containers for disposal.

7 Handling & Storage :

Handling: Do not breathe dust, vapor, mist or gas. Avoid contact with eyes, skin, and clothing. Use only in chemical hood.

Storage: Keep container tightly closed. Store in a cool dry place. Do not store near combustible material. Store under an inert atmosphere.

Handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Normal measures for preventive fire protection.

Storage

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Handle and store under inert gas.

Do not store near combustible materials. Keep refrigerated. (Store below 4_C/39_F.) Store in a tightly closed container. Store in a dry area. Store under an inert atmosphere.

8 Exposure Control / Personal Protection :

Respiratory protection

Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.

Eye protection

Tightly fitting safety goggles. Face shield (8-inch minimum).

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9 Physical And Chemical Properties :

Colour	: Clear yellow to green viscous liquid
Odour	: Pungent
pH	: < 2
Boiling Point/range	: > 100 deg C
Melting point	: -10℃
Flash Point	: Data not available
Explosion properties	: Data not available
Density	: 1.890 – 1.895 g/cm^3 (at 20 ℃)
Solubility in water	: Decomposes

10 Stability And Reactivity :

Stable under normal temperatures and pressures. Moisture sensitive. Incompatible with strong oxidizing agents, bases, halides, reducing agents, water and finely powdered metals.
Hazardous Decomposition Products: Nitrogen oxides and oxides of sulphur. Nitrosylsulfuric acid is an oxidizing agent. Neutralizes chemical bases in exothermic reactions. An attempt to diazotize dinitroaniline using Nitrosylsulfuric acid resulted in an explosion with loss of life. The event was blamed on the high concentration of the reactants dinitroaniline hydrochloride and Nitrosylsulfuric acid [MCA Case History 1763. 1971].

11 Toxicological Information :

Acute toxicity	: CAS # 7664-93-9 (Sulphuric acid) Draize test, rabbit, eye: 250 µg Severe; Oral, rat: LD_{50} = 2140 mg/Kg ; Inhalation, rat LC_{50} = 510 mg/m^3; Inhalation, mouse LC_{50} = 320 mg/m^3 CAS # 7782-78-7 (Nitrosylsulphuric acid) Data not available
RTECS#	: CAS # 7664-93-9 WS5600000 CAS # 7782-78-7 not listed
Carcinogenicity	: Sulfuric acid - ACGIH: A2 - Suspected Human Carcinogen (contained in strong inorganic acid mists) California: carcinogen, initial date 3/14/03 (Strong inorganic acid mists containing sulfuric acid). NTP: Known carcinogen (Strong inorganic acid mists containing s). IARC: Group 1 Carcinogen Nitrosylsulfuric acid - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Health Warnings	This chemical may cause skin/ eye irritation and burns (corrosive). Symptoms After Inhalation. Irritation of nose, throte and airway. Sneezing. Coughing, damage, Tearing eyes. Symptoms After Ingestion : Smarting in mouth and throat, stomach.
Route of entry	Inhalation, Skin absorption, Ingestion.
Target organs	Eyes, Gastrointestinal tract. Respiratory system, lungs, skin, mucous membranes
Chronic exposure	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.

12 Ecological Information :

Acute fish toxicity	Data not available

13 Disposal Considerations :

Dispose of in a manner consistent with federal, state and local regulations.

Product

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14 Transport Information :

UN No. : 3264 **Hazard Class : 8** **Packing Group : II**

Proper shipping name : Nitrosylsulphuric acid, Liquid

Declaration for land shipment : As above

Declaration for sea shipment : As Above

Declaration for air shipment (IATA) : As above

15 Regulatory Information :

Oxidizer and Corrosive

Symbols : O, C

Risk phrases

R 8 : Contact with combustible material may cause fire.

R 14 : Reacts violently with water.

R 29 : Contact with water liberates toxic gas.

R 35 : Causes severe burns.

Safety phrases

S 8 : Keep container dry.

S 26 : In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 36/37/39 : Wear suitable protective clothing, gloves and eye/face protection.

S 45 : In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

WGK (Water Danger/Protection)
CAS# 7782-78-7: 3
Canada - DSL/NDSL
CAS# 7782-78-7 is listed on Canada's DSL List.
Canadian Ingredient Disclosure List
CAS# 7782-78-7 is listed on the Canadian Ingredient Disclosure List.
TSCA
CAS# 7782-78-7 is listed on the TSCA inventory.

16 Other Information:

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