



## MATERIAL SAFETY DATA SHEET

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Issue Date:

### 1- Chemical Product Information and Company Identification.

**Product Name:** : Morpholine GC Reference Standard, AnStan<sup>®</sup>.  
**Synonym:** : Tetrahydro-2H-1,4-oxazine  
**Product code:** : BS14304.  
**CAS Number:** : 110-91-8.  
**Company Name:** : Briti Scientific.  
**Company Address:** : Plot No:78/B/13, SY-79,Phase-VI, Jeedimetla,Hyderabad-500 055.  
Telangana, India.

### Section 2- Composition / Information on Ingredients.

CAS No.	Chemical Name	Mol. Formula
110-91-8	Tetrahydro-2H-1,4-oxazine	C <sub>4</sub> H <sub>9</sub> NO.

### Section 3- Hazards Identification.

#### Classification

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids: Category 3  
Acute oral toxicity: Category 4  
Acute dermal toxicity: Category 3  
Acute Inhalation Toxicity – Vapors: Category 3  
Skin Corrosion/Irritation: Category 1 B  
Serious Eye Damage/Eye Irritation: Category 1  
Specific target organ toxicity (single exposure): Category 3  
Target Organs - Respiratory system.  
Specific target organ toxicity - (repeated exposure): Category 2  
Target Organs - Liver, Kidney.

#### Label Elements

**Signal Word**

Danger





### **Hazards not otherwise classified (HNOC)**

Signal Word

Danger

Hazard Statements.

Flammable liquid and vapour.

Harmful if swallowed.

Causes severe skin burns and eye damage.

May cause respiratory irritation.

May cause damage to organs through prolonged or repeated exposure.

Toxic in contact with skin or if inhaled.



### **Precautionary Statements:**

**Prevention:** Wash face, hands and any exposed skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wear protective gloves/protective clothing/eye protection/face protection.

Use only outdoors or in a well-ventilated area.

Do not breathe dust/fume/gas/mist/vapors/spray.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking Keep container tightly closed

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Keep cool.

#### **Response:**

Immediately call a POISON CENTER or doctor/physician.

**Inhalation IF INHALED:** Remove victim to fresh air and keep at rest in a position comfortable for breathing.

#### **Skin:**

Wash contaminated clothing before reuse.

**IF ON SKIN (or hair):** Take off immediately all contaminated clothing. Rinse skin with water/shower

#### **Eyes**

**IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

#### **Ingestion:**

Rinse mouth





Do NOT induce vomiting

**Fire:**

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction.

**Storage:**

Store locked up.

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

**Disposal:**

Dispose of contents/container to an approved waste disposal plant.

**Hazards not otherwise classified (HNOC)**

None identified

**Section 4- First Aid Measures.**

**General Advice:** Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Eye Contact:** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention if symptoms occur.

**Skin Contact:** Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

**Inhalation:** If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Remove to fresh air. If not breathing give artificial respiration. Call a physician or poison control center immediately.

**Most important symptoms and effects:**

None reasonably foreseeable. Causes burns by all exposure routes. Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated.

**Ingestion:** Do NOT induce vomiting. Get medical attention.

**Most important symptoms and effects:** No information available.

**Notes to Physician:** Treat symptomatically.

**Section 5- Fire Fighting Measures.**

**Suitable Extinguishing Media:** Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam, water mist may be used to closed containers.

**Unsuitable Extinguishing Media:** No information available.

**Flash Point:** 32 °C / 89.6 °F.

**Method -** No information available.

**Autoignition Temperature:** 255 °C / 491 °F.





### Explosion Limits

Upper 11.2%

Lower 2%

**Sensitivity to Mechanical Impact:** No information available.

**Sensitivity to Static Discharge:** No information available.

### Specific Hazards Arising from the Chemical:

Keep product and empty container away from heat and sources of ignition. Thermal decomposition can lead to release of irritating gases and vapors.

### Hazardous Combustion Products:

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Nitrogen oxides (NO<sub>x</sub>). Thermal decomposition can lead to release of irritating gases and vapors.

### Protective Equipment and Precautions for Firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

### NFPA

Health	Flammability	Instability	Physical hazards
3	3	1	N/A

## Section 6- Accidental Release Measures.

**Personal Precautions:** Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Take precautionary measures against static discharges.

**Environmental Precautions:** Should not be released into the environment. See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

### Methods for Containment and Clean Up:

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

## Section 7- Handling and Storage.

**Handling:** Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Take precautionary measures against static discharges. Do not taste







**Storage:** Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Keep away from heat, sparks and flame. Keep in properly labeled containers. Flammables area. Incompatible Materials. Strong oxidising agents.

## Section 8- Exposure Control/Personal Protection.

### Exposure Guidelines:

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL(TWA)
Morpholine	TWA:20 ppm Skin	(Vacated) TWA:20 ppm (Vacated) TWA: 70 mg/m <sup>3</sup> (Vacated) STEL: 30 ppm (Vacated) STEL: 105 mg/m <sup>3</sup> Skin TWA: 20 ppm TWA: 70 mg/m <sup>3</sup>	IDLH: 1400 ppm TWA: 20 ppm TWA: 70 mg/m <sup>3</sup> STEL: 30 ppm STEL: 105 mg/m <sup>3</sup>	TWA: 20 ppm

**Engineering Measures:** Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical /ventilating/ lighting equipment. Ensure adequate ventilation, especially in confined areas.

### Personal Protective Equipment

**Eye/face Protection:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin and body protection:** Impervious clothing. Chemical resistant apron. Boots. Impervious gloves.

**Respiratory Protection:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

### Hygiene Measures:

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Provide regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wear suitable gloves and eye/face protection.

## Section 9- Physical and Chemical Properties.

**Appearance:** Colorless Liquid.  
**Odor:** Amine compounds.  
**Odor Threshold:** No information available.  
**pH:** No information available.  
**Melting Point/Range:** -5 °C.  
**Boiling Point/Range:** 129 °C.





**Flash Point:** 32 °C.  
**Evaporation Rate:** No information available.  
**Flammability (solid,gas):** Not applicable.  
**Flammability or explosive limits:**  
 Upper 11.2%.  
 Lower 2%.  
**Vapor Pressure:** No information available.  
**Density:** 1.00 g/cm<sup>3</sup>.  
**Solubility:** Soluble in acetone.  
**Partition coefficient; n-octanol/water:** No data available.  
**Autoignition Temperature** 255 °C / 491 °F.  
**Decomposition Temperature:** No data available.  
**Viscosity:** No information available.  
**Molecular formula:** C<sub>9</sub>H<sub>9</sub>NO.  
**Molecular Weight:** 87.12 g/mol.

### Section 10- Stability and Reactivity.

**Reactive Hazard:** None known, based on information available

**Stability:** Hygroscopic.

**Conditions to Avoid:** Incompatible products. Keep away from open flames, hot surfaces and sources of ignition.

**Incompatible Materials:** Strong oxidizing agents.

**Hazardous Decomposition Products:** Nitrogen oxides (NO<sub>x</sub>), Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>) Thermal decomposition can lead to release of irritating gases and vapors.

**Hazardous Polymerization:** Hazardous polymerization does not occur.

**Hazardous Reactions:** None under normal processing.

### Section 11- Toxicological Information.

#### Acute Toxicity

Product Information

Oral LD50: Category 4.

Dermal LD50: Category 3.

Vapor LC50: Category 4.

#### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Morpholine	1050 mg/kg (Rat) 1900 mg/kg (Rat)	310 mg/kg (Rabbit) 500 mg/kg (Rabbit)	LC50 > 8000 ppm (Rat) 8h





**Toxicologically Synergistic Products:** No information available  
**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation:** Causes burns by all exposure routes.

**Sensitization:** No information available

**Mutagenic Effects:** No information available

**Reproductive Effects:** No information available.

**Developmental Effects:** No information available.

**Teratogenicity:** No information available.

STOT - single exposure Respiratory system.

STOT - repeated exposure Liver Kidney.

**Aspiration hazard:** No information available

**Symptoms / effects, both acute and delayed:** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting; Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

**Endocrine Disruptor Information:** No information available.

**Other Adverse Effects:** See actual entry in RTECS for complete information. properties have not been fully investigated.

## Section 12- Ecological Information.

**Ecotoxicity:** Do not empty into drains.

**Persistence and Degradability:** Soluble in water persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation:** No information available.

**Mobility:** Will likely be mobile in the environment due to its water solubility.

## Section 13- Disposal Considerations.

**Waste Disposal Methods:** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## Section 14- Transport Information.

### **DOT**

UN-No: UN2054

Proper Shipping Name: MORPHOLINE

Hazard Class: 8

Subsidiary Hazard Class: 3

Packing Group: I



**TDG**

UN-No: UN2054  
Proper Shipping Name: MORPHOLINE  
Hazard Class: 8  
Subsidiary Hazard Class: 3  
Packing Group: I

**IATA**

UN-No: UN2054  
Proper Shipping Name: MORPHOLINE  
Hazard Class: 8  
Subsidiary Hazard Class: 3  
Packing Group: I

**IMDG/IMO**

UN-No: UN2054  
Proper Shipping Name: MORPHOLINE  
Hazard Class; 8  
Subsidiary Hazard Class: 3  
Packing Group: I

**Section 15- Regulatory Information.****Legend:**

TSCA - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

**TSCA 12(b)** - Notices of Export: Not applicable.

**U.S. Federal Regulations**

SARA 313: Not applicable.

SARA 311/312: Hazard Categories See section 2 for more information.

CWA (Clean Water Act) Not applicable.

**Clean Air Act:** Not applicable.

**OSHA –**

Occupational Safety and Health Administration: Not applicable.

**CERCLA:** Not applicable.

**California Proposition 65:** This product does not contain any Proposition 65 chemicals.

**Other International Regulations**

**Mexico** - Grade Serious risk, Grade 3.







### Section 16- Other Information.

Briti Scientific provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

