SECCION 1: Identificación de la sustancia/mixto o de la empresa/unidad encomendada

1.1 Identificadores del producto
   Producto: Morfolina
   CAS-No.: 110-91-8

1.2 Uso identificado del producto o del mixto y usos recomendados
   Uso identificado: Laboratorio químicos, Industrial & for professional use only.

1.3 Detalles del proveedor del hoja de datos de seguridad
   Compañía: Central Drug House (P) Ltd
   7/28 Vardaan House
   New Delhi-10002
   INDIA
   Teléfono: +91 11 49404040
   Email: care@cdhfinechemical.com

1.4 Número de teléfono de emergencia
   Número de teléfono de emergencia: +91 11 49404040 (9:00am - 6:00 pm) [Horas de oficina]

SECCION 2: Identificación de riesgos

2.1 Clasificación del producto o mixto
   Clasificación según la Regulación (CE) No 1272/2008
   Flammable liquids (Category 3), H226
   Acute toxicity, Oral (Category 4), H302
   Acute toxicity, Inhalation (Category 3), H331
   Acute toxicity, Dermal (Category 3), H311
   Skin corrosion (Category 1A), H314
   Para el texto completo de las H-Statements mencionadas en esta sección, consulte la Sección 16.

2.2 Elementos de etiquetado
   Etiquetado según la Regulación (CE) No 1272/2008
   Pictograma

   Símbolo de advertencia: Peligro
   Aviso de peligro: Flammable liquid and vapour.
H302 Harmful if swallowed.
H311 + H331 Toxic in contact with skin or if inhaled.
H314 Causes severe skin burns and eye damage.

Precautionary statement(s)
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P370 + P378 In case of fire: Use dry powder or dry sand to extinguish.

Supplemental Hazard Statements none

2.3 Other hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances
Synonyms: Tetrahydro-1,4-oxazine
Formula: C₄H₉NO
Molecular weight: 87.12 g/mol
CAS-No.: 110-91-8
EC-No.: 203-815-1
Index-No.: 613-028-00-9

Hazardous ingredients according to Regulation (EC) No 1272/2008

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morpholine</td>
<td>Flam. Liq. 3; Acute Tox. 4;</td>
<td>&lt;= 100 %</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>110-91-8</td>
<td></td>
</tr>
<tr>
<td>EC-No.</td>
<td>203-815-1</td>
<td>Acute Tox. 3; Skin Corr. 1A;</td>
</tr>
<tr>
<td>Index-No.</td>
<td>613-028-00-9</td>
<td>H226, H302, H331, H311, H314</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of 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.
If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Nitrogen oxides (NOx)

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
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.

Hygroscopic.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Components with workplace control parameters
8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABK (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).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance
   Form: liquid
   Colour: colourless

b) Odour
   unpleasant

c) Odour Threshold
   No data available

d) pH
   10.6 at 5 g/l at 20 °C

e) Melting point/freezing point
   Melting point/range: -7 - -5 °C - lit.

f) Initial boiling point and boiling range
   126.0 - 130.0 °C

g) Flash point
   31 °C - closed cup

h) Evaporation rate
   No data available

i) Flammability (solid, gas)
   No data available

j) Upper/lower flammability or explosive limits
   Upper explosion limit: 10.8 %(V)
   Lower explosion limit: 1.8 %(V)

k) Vapour pressure
   41 hPa at 38 °C
   9 hPa at 20 °C

l) Vapour density
   3.01 - (Air = 1.0)

m) Relative density
   0.996 g/cm3 at 25 °C
n) Water solubility: completely miscible
o) Partition coefficient: n-octanol/water: log Pow: -2.55 at 25 °C
p) Auto-ignition temperature: 255 °C at 1.013 hPa
q) Decomposition temperature: No data available
r) Viscosity: No data available
s) Explosive properties: No data available
t) Oxidizing properties: No data available

9.2 Other safety information
Relative vapour density: 3.01 - (Air = 1.0)

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - male and female - 1.900 mg/kg (OECD Test Guideline 401)
LD50 Dermal - Rabbit - male - 500 mg/kg (OECD Test Guideline 402)

Skin corrosion/irritation
Skin - Rabbit
Result: Causes severe burns. (OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Corrosive (OECD Test Guideline 405)

Respiratory or skin sensitisation
Buehler Test - Guinea pig
Result: Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity
unscheduled DNA synthesis assay
rat hepatocytes
Result: negative
Hamster - female
Result: negative

Carcinogenicity
Carcinogenicity - Mouse - Oral
IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Morpholine)

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
Repeated dose Rat - female - Oral - LOAEL : 500 mg/kg
RTECS: QD6475000
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity
Toxicity to fish static test LC50 - Oncorhynchus mykiss (rainbow trout) - 380 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates Immobilization EC50 - Daphnia magna (Water flea) - 45 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae static test EC50 - Pseudokirchneriella subcapitata - 28 mg/l - 96 h

12.2 Persistence and degradability
Biodegradability aerobic - Exposure time 25 d
Result: 93 % - Readily biodegradable

12.3 Bioaccumulative potential
Bioaccumulation Cyprinus carpio (Carp) - 0,5 mg/l
Bioconcentration factor (BCF): < 2,8 (OECD Test Guideline 305C)

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects
Harmful to aquatic life.

SECTION 13: Disposal considerations
13.1 Waste treatment methods
Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number
ADR/RID: 2054 IMDG: 2054 IATA: 2054

14.2 UN proper shipping name
ADR/RID: MORPHOLINE IMDG: MORPHOLINE IATA: Morpholine

14.3 Transport hazard class(es)
ADR/RID: 8 (3) IMDG: 8 (3) IATA: 8 (3)

14.4 Packaging group
ADR/RID: I IMDG: I IATA: I

14.5 Environmental hazards
ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user
No data available

SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

15.2 Chemical Safety Assessment
For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H311 + H331 Toxic in contact with skin or if inhaled.
H314 Causes severe skin burns and eye damage.
H331 Toxic if inhaled.

Further information
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 applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.