

## Section 1. Identification

### 1.1 Product Identifier 1847

Product Name MORPHOLINE  
CAS Number 110-91-8  
REACH Registration No 01-2119496057-30-XXXX  
Molecular Formula  $\text{NHCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2$  = 87.12

### 1.2 Relevent identified uses of the substance or mixture & uses advised against

Uses of Material Chemical for industrial and laboratory use. Not suitable for domestic use.

### 1.3 Supplier Vickers Laboratories Ltd



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LS28 6QW  
UNITED KINGDOM

Phone 44 0113 2362811  
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### 1.4 Emergency Telephone (08:00-16:30) +44(0) 113 2362811 (24hr) 112 (Have this document to hand)

## Section 2. Hazards Identification

### 2.1 Classification of the substance or mixture

#### Classification according to regulation 1272/2008/EC

Flammable liquid, category 3  
Skin corrosion/irritation, category 1B  
Acute toxicity, category 4 (oral)  
Acute toxicity, category 4 (dermal)  
Acute toxicity, category 4 (inhalation)

H226: Flammable liquid and vapour.  
H314: Causes severe skin burns and eye damage.  
H302: Harmful if swallowed.  
H312: Harmful in contact with skin.  
H332: Harmful if inhaled.

### 2.2 Label elements

#### Labelling according to regulation 1272/2008/EC

Signal word Danger

Hazard Pictograms



Hazard Statements	Flammable liquid and vapour. Harmful if inhaled. Harmful in contact with skin. Harmful if swallowed. Causes severe skin burns and eye damage.
Precautionary Statements	Keep away from heat / sparks/open flames/hot surfaces - No smoking. Wear protective gloves / protective clothing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do and continue rinsing. IF ON SKIN: Wash with plenty of soap and water.

## Section 3. Composition

### 3.1 Substances

Component	CAS No.	EEC No.	REACH No.	Conc w/w	CLP Classification (1272/2008/CE)
Morpholine	110-91-8	203-815-1	01-2119496057-30-XXXX	>98%	Flam. Liq. 3, Skin Corr. 1B, Acute Tox. 4 (O), Acute Tox. 4 (D), Acute Tox. 4 (I)

## Section 4. First Aid

### 4.1 Description of first aid measures

Eyes	Irrigate thoroughly with plenty of water for at least 10 minutes, holding the eye open. OBTAIN MEDICAL ATTENTION.
Skin	Swab contaminated skin with a mixture of 70 parts polyethylene glycol and 30 parts alcohol. OBTAIN MEDICAL ATTENTION.
Inhalation	Remove from exposure. Keep warm and at rest. If there is difficulty in breathing give oxygen if available. If breathing stops or shows signs of failing, apply artificial resuscitation. OBTAIN MEDICAL ATTENTION URGENTLY.
Ingestion	Wash out the patients mouth thoroughly with water. OBTAIN MEDICAL ATTENTION URGENTLY.
Personal protection for first aiders	Wear protective gloves / eye protection.

### 4.2 Most important symptoms and effects, both acute & delayed.

No further relevant information available.

### 4.3 Indication of any immediate medical attention and special treatment needed.

No further relevant information available.

## Section 5. Fire Fighting

### 5.1 Extinguishing media

Extinguishing Media	Alcohol resistant foam, dry powder, or carbon dioxide. Use water spray to keep fire exposed containers cool.
Unsuitable Media	Do not use water jet.

### 5.2 Special hazards arising from the substance or mixture

Hazards	Vapour-air mixtures are explosive.
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### 5.3 Advice for firefighters

Advice for firefighters	Evacuate area immediately. Keep up wind. Avoid exposure to toxic vapours and fumes. Fire-fighters should wear protective clothing and breathing apparatus.
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## Section 6. Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal Protection	Ensure no sources of ignition. Only re-enter area with full protective clothing and breathing apparatus. Do not allow other people to enter area. Do not allow general use of area until it is safe to do so.
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### 6.2 Environmental precautions

Environmental	Keep material out of sewers, storm drains, surface waters and soil. Notify the Environmental Agency and local Environmental Health Officer if major spillage occurs.
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### 6.3 Methods and material for containment and cleaning up

Major Spillage	Contain and absorb on inert material. Transfer absorbent to container for removal. Wash area down with copious amounts of water.
Minor Spillage	Wash area down with copious amounts of water.

#### 6.4 Reference to other sections

See section 8.2 for information on protective equipment and section 13 for information on disposal.

## Section 7. Storage & Handling

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Do not breath vapours. Do not allow to contaminate clothing.  
Ensure Local Exhaust Ventilation maintains vapour concentrations below the recommended limits.

### 7.2 Conditions for safe storage, including any incompatibilities

Well ventilated, cool, dry storage . Keep containers closed when not in use.

### 7.3 Specific end use(s)

See section 1.2.

## Section 8. Workplace Exposure & Personal Protection

### 8.1 Control parameters

Component	CAS No	Concentration	Workplace Exposure Limits		
			Long Term (8hr TWA)	Short Term 15min period	
Morpholine	110-91-8	>98%	10.0 ppm	36.0 mg/m-3	20.0 ppm 72.0 mg/m-3

Exposure data source(s) IOELV: Indicative Occupational Exposure Limit Value.

### 8.2 Exposure controls

Respiratory Protection	Use L.E.V. or natural ventilation to maintain vapour concentrations below exposure limits. If not, use a well maintained chemical cartridge organic vapour respirator, or use self contained breathing apparatus.
Hand Protection	Use solvent resistant gloves.
Eye Protection	Use tightly fitting chemical splash proof glasses or goggles.
Skin Protection	Avoid contact with skin. If skin contact or contamination of clothing is likely, protective clothing must be worn.
Special Hazards	No special precautions required.

## Section 9. Physical & Chemical Properties

### 9.1 Information on basic physical and chemical properties

Appearance	Clear colourless liquid.
Odour	Characteristic amine odour.
pH	Not applicable
Boiling Point	128.9°C
Melting Point	-4.9°C
Flash Point	31°C (Closed cup)
Upper Flammable Limit	15.2%
Lower Flammable Limit	1.5%
Auto Ignition	255°C
Explosive Properties	Moderate/severe in confined spaces.
Oxidising Properties	No.
Vapour Pressure	5.2504mmHg @ 20°C
Relative Density	1.0017
Water Solubility	Completely miscible in water.

### 9.2 Other information

No data available.

## Section 10. Stability & Reactivity

10.1	Reactivity	No data available.
10.2	Chemical Stability	Stable under normal conditions
10.3	Possibility of hazardous reactions	No data available.
10.4	Conditions to Avoid	Hot surfaces, naked flames or other sources of ignition.
10.5	Incompatible Materials	Acids. Strong oxidising agents.
10.6	Hazardous Decomposition Products	Burning will produce toxic fumes of NO <sub>x</sub> , carbon monoxide and/or carbon dioxide.

## Section 11. Toxicological Information

### 11.1 Information on toxicological effects

Eyes	Both the vapour and liquid may, be extremely irritating to eyes and can cause chemical eye burns.
Skin	Contact with the liquid may cause burns. May be absorbed through the skin.
LD50 Skin	500mg/kg Rabbit
Ingestion	Harmful if swallowed.
LD50 Oral	1450mg/kg Rat
Inhalation	Harmful by inhalation.
LD50 Inhalation	8000ppm Rat (8 hours)
TCLo	Not available
Carcinogenicity	Not considered to be a carcinogen.
Mutagenicity	Not considered to be a mutagen.
Reproductive Effects	None identified.

## Section 12. Ecological

12.1	Toxicity	Presents no serious environmental problem.
	LC50 Algal	>310mg/l Green algae (72 hours)
	LC50 Crustacea	100mg/l Daphnia magna (24 hours)
	LC50 Fish	180 - 380mg/l Rainbow Trout (96 hours)
12.2	Persistence and degradability	No data available.
12.3	Bioaccumulative potential	No data available.
12.4	Mobility in soil	No data available.
12.5	Results of PBT & vPvB assessment	Assessment not required.
12.6	Other adverse effects	None known at present.

## Section 13. Disposal Considerations

### 13.1 Waste treatment methods

Disposal Methods	Dispose of via an authorised waste disposal contractor to an approved waste disposal site, observing all local and national regulations.
Contaminated Packaging	Use a licensed waste disposer.

## Section 14. Transport Information

<b>14.1 UN Number</b>	2054
<b>14.2 Proper Shipping Name</b>	Morpholine
<b>14.3 Transport classes</b>	
UN classification	8
Subsidiary hazard(s)	3
Transport category	1
ADR Hazard ID	883
Tunnel Restriction Code	D/E
<b>14.4 Packing Group</b>	I
<b>14.5 Environment hazards</b>	See section 12.
<b>14.6 Special precautions for user</b>	No special precautions required.
<b>14.7 Transport in bulk</b>	Not transported in bulk.



## Section 15. Regulatory Information

### 15.1 Safety, health and environment regulations specific for substance/mixture.

#### Classification, Labeling & Packaging of Substances & Mixtures Regulations (1272/2008/CE)

**Classification** Flammable liquid, category 3; Skin corrosion/irritation, category 1B; Acute toxicity, category 4 (oral); Acute toxicity, category 4 (dermal); Acute toxicity, category 4 (inhalation)

**Signal word** Danger

**Hazard Pictograms**



**Hazard Statements** H226, H332, H312, H302, H314  
Flammable liquid and vapour. Harmful if inhaled. Harmful in contact with skin. Harmful if swallowed. Causes severe skin burns and eye damage.

**Precautionary Statements** P210, P280, P305+P351+P338, P302+P352  
Keep away from heat / sparks/open flames/hot surfaces - No smoking. Wear protective gloves / protective clothing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do and continue rinsing. IF ON SKIN: Wash with plenty of soap and water.

### 15.2 Chemical safety assessment

Assessment not required.

## Section 16. Other Information

The information contained in this document only covers the hazards presented by this material, it DOES NOT constitute a workplace risk assessment. See sections 11 for toxicological information and section 12 for ecological information.

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