

Silver Fern Chemical, Inc.
Safety Data Sheet
Morpholine

Version	Revision Date:	SDS Number:	Date of last issue: 02/09/2022
1.4	02/23/2022	400001020150	Date of first issue: 07/27/2016

Print Date 08/17/2026

SECTION 1. IDENTIFICATION

Product name : MORPHOLINE

Manufacturer or supplier's details

Company name of supplier : Silver Fern Chemical, Inc.
Address : 121 W De La Guerra St STE B
Santa Barbara, CA 93101
Telephone : Phone: 1-866-282-3384
Email : Info@silverfernchemical.com

Emergency telephone number : 24 Hour Emergency Contact
Infotrac 1-800-535-5053 (USA & Canada)
Outside USA & Canada 1-352-323-3500

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	: Category 3
Acute toxicity (Oral)	: Category 4
Acute toxicity (Inhalation)	: Category 3
Acute toxicity (Dermal)	: Category 3
Skin corrosion	: Category 1B
Serious eye damage	: Category 1
Reproductive toxicity	: Category 2
Short-term (acute) aquatic hazard	: Category 3

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H226 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.

Silver Fern Chemical, Inc.
Safety Data Sheet
Morpholine

Version	Revision Date:	SDS Number:	Date of last issue: 02/09/2022
1.4	02/23/2022	400001020150	Date of first issue: 07/27/2016

Print Date 08/17/2026

H361 Suspected of damaging fertility or the unborn child.
H402 Harmful to aquatic life.

Precautionary statements

: Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing mist or vapours.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
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/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal:

P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Silver Fern Chemical, Inc.

Safety Data Sheet

Morpholine

Version 1.4 Revision Date: 02/23/2022 SDS Number: 400001020150 Date of last issue: 02/09/2022
Date of first issue: 07/27/2016

Print Date 08/17/2026

Substance / Mixture : Substance

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
morpholine	110-91-8	90 - 100

The specific chemical identity and/or exact percentage (concentration) of composition may be withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Treat symptomatically.
Get medical attention if symptoms occur.
- If inhaled : If inhaled, remove to fresh air.
Get medical attention if symptoms occur.
- In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
If on skin, rinse well with water.
If on clothes, remove clothes.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.
Keep respiratory tract clear.
Do NOT induce vomiting.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.
- Most important symptoms and effects, both acute and delayed : None known.
- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Avoid inhalation, ingestion and contact with skin and eyes.
No action shall be taken involving any personal risk or without suitable training.
It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
- Notes to physician : Treat symptomatically.

Silver Fern Chemical, Inc.
Safety Data Sheet
Morpholine

Version	Revision Date:	SDS Number:	Date of last issue:
1.4	02/23/2022	400001020150	02/09/2022
			Date of first issue: 07/27/2016

Print Date 08/17/2026

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water spray
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical
- Unsuitable extinguishing media : Exercise caution when using a high volume water jet as it may scatter and spread fire
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon oxides
Nitrogen oxides (NO_x)
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
For safety reasons in case of fire, cans should be stored separately in closed containments.
Use a water spray to cool fully closed containers.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Remove all sources of ignition.
Evacuate personnel to safe areas.
Refer to protective measures listed in sections 7 and 8.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Neutralise with acid.
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material.
Take necessary action to avoid static electricity discharge

Silver Fern Chemical, Inc.

Safety Data Sheet

Morpholine

Version 1.4 Revision Date: 02/23/2022 SDS Number: 400001020150 Date of last issue: 02/09/2022
Date of first issue: 07/27/2016

Print Date 08/17/2026

(which might cause ignition of organic vapours).

Keep away from open flames, hot surfaces and sources of ignition.

- Advice on safe handling : Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Take precautionary measures against static discharges.
Open drum carefully as content may be under pressure.
To avoid spills during handling keep bottle on a metal tray.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : No smoking.
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.
Observe label precautions.
Keep in properly labelled containers.
- Materials to avoid : Do not store near acids.
- Further information on storage stability : Stable under normal conditions.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
morpholine	110-91-8	TWA	20 ppm	ACGIH
		TWA	20 ppm 70 mg/m3	OSHA Z-1
		TWA	20 ppm 70 mg/m3	NIOSH REL
		ST	30 ppm 105 mg/m3	NIOSH REL
		TWA	20 ppm 70 mg/m3	OSHA P0
		STEL	30 ppm 105 mg/m3	OSHA P0

Personal protective equipment

- Respiratory protection : In the case of vapour formation use a respirator with an approved filter.
- Hand protection : Use gloves approved to relevant standards e.g. EN 16523 (Europe), EN 374 (Europe), F739 (US).
- Material : butyl-rubber
- Break through time : > 480 min

Silver Fern Chemical, Inc.

Safety Data Sheet

Morpholine

Version	Revision Date:	SDS Number:	Date of last issue: 02/09/2022
1.4	02/23/2022	400001020150	Date of first issue: 07/27/2016

Print Date 08/17/2026

Material	:	Silver Shield(R) gloves
Break through time	:	> 480 min
Remarks	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Eye protection	:	Eye wash bottle with pure water Tightly fitting safety goggles Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Impervious clothing 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. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	colourless
Odour	:	ammoniacal
Odour Threshold	:	No data is available on the product itself.
pH	:	11 Concentration: 250 g/l
Freezing point	:	23.2 °F / -4.9 °C
Boiling point	:	264 °F / 129 °C (1,013 hPa)
Flash point	:	90 °F / 32 °C Method: DIN 51755 Part 1, closed cup
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data is available on the product itself.
Flammability (liquids)	:	No data is available on the product itself.
Upper explosion limit / Upper flammability limit	:	11.2 - 15.2 %(V)
Lower explosion limit / Lower flammability limit	:	1.4 - 1.8 %(V)
Vapour pressure	:	9.8 hPa (68.5 °F / 20.3 °C) Method: OECD Test Guideline 104
Relative vapour density	:	3

Silver Fern Chemical, Inc.

Safety Data Sheet

Morpholine

Version	Revision Date:	SDS Number:	Date of last issue: 02/09/2022
1.4	02/23/2022	400001020150	Date of first issue: 07/27/2016

Print Date 08/17/2026

Relative density	:	1.0007 (68 °F / 20 °C)
Density	:	1.0007 g/cm3 (68 °F / 20 °C)
Solubility(ies)		
Water solubility	:	completely miscible
Solubility in other solvents	:	Solvent: Methanol Description: soluble
		Solvent: Diethylether Description: soluble
		Solvent: Acetone Description: soluble
Partition coefficient: n-octanol/water	:	log Pow: -0.84 (77 °F / 25 °C) pH: 10.3
		log Pow: -2.55 (77 °F / 25 °C) pH: 7
Auto-ignition temperature	:	491 °F / 255 °C Method: DIN Method, other
Decomposition temperature	:	No data is available on the product itself.
Self-Accelerating decomposition temperature (SADT)	:	No data is available on the product itself.
Viscosity		
Viscosity, dynamic	:	2.23 mPa.s (68 °F / 20 °C)
Explosive properties	:	No data is available on the product itself.
Oxidizing properties	:	None.
Molecular weight	:	87.1 g/mol
Particle size	:	No data is available on the product itself.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Vapours may form explosive mixture with air.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	None known.
Hazardous decomposition products	:	carbon monoxide carbon dioxide Nitrogen oxides (NOx)

Silver Fern Chemical, Inc.

Safety Data Sheet

Morpholine

Version	Revision Date:	SDS Number:	Date of last issue: 02/09/2022
1.4	02/23/2022	400001020150	Date of first issue: 07/27/2016

Print Date 08/17/2026

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate: 1,685 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: 3.01 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: 501.25 mg/kg
Method: Calculation method

Components:

morpholine:

Acute oral toxicity : LD50 (Rat, male and female): ca. 1,900 mg/kg
Method: OECD Test Guideline 401
Assessment: The component/mixture is moderately toxic after single ingestion.

LD50 (Rat, male): 1,680 mg/kg
Method: OECD Test Guideline 401
Assessment: The component/mixture is moderately toxic after single ingestion.

Acute inhalation toxicity : LC0 (Rat, male and female): 8 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403
Assessment: The component/mixture is toxic after short term inhalation.

Acute dermal toxicity : LD50 (Rabbit, male): ca. 500 mg/kg
Method: OECD Test Guideline 402
Assessment: The component/mixture is toxic after single contact with skin.

Skin corrosion/irritation

Components:

morpholine:

Species : Rabbit
Assessment : Causes burns.
Method : OECD Test Guideline 404
Result : Causes burns.
GLP : no

Silver Fern Chemical, Inc.

Safety Data Sheet

Morpholine

Version	Revision Date:	SDS Number:	Date of last issue: 02/09/2022
1.4	02/23/2022	400001020150	Date of first issue: 07/27/2016

Print Date 08/17/2026

Serious eye damage/eye irritation

Components:

morpholine:

Species	:	Rabbit
Result	:	Risk of serious damage to eyes.
Assessment	:	Risk of serious damage to eyes.
Method	:	OECD Test Guideline 405

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

Components:

morpholine:

Genotoxicity in vitro	:	Test Type: reverse mutation assay Test system: Salmonella tryphimurium and E. coli Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: Not classified due to inconclusive data.
-----------------------	---	---

Test Type: sister chromatid exchange assay
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 479
Result: negative

Test Type: unscheduled DNA synthesis assay
Test system: rat hepatocytes
Metabolic activation: without metabolic activation
Method: OECD Test Guideline 482
Result: negative

Test Type: gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: without metabolic activation
Method: OECD Test Guideline 476
Result: positive

Genotoxicity in vivo	:	Test Type: Chromosome aberration test in vitro Application Route: Oral Dose: 500 mg/kg Result: negative
----------------------	---	--

Germ cell mutagenicity - Assessment	:	Animal testing did not show any mutagenic effects.
-------------------------------------	---	--

Carcinogenicity

Components:

morpholine:

Species	:	Rat, male and female
Application Route	:	Inhalation
Exposure time	:	52 weeks
Activity duration	:	6 h

Silver Fern Chemical, Inc.

Safety Data Sheet

Morpholine

Version	Revision Date:	SDS Number:	Date of last issue: 02/09/2022
1.4	02/23/2022	400001020150	Date of first issue: 07/27/2016

Print Date 08/17/2026

Dose : 0/36/181/543 mg/m³
 Frequency of Treatment : 5 days/week
 NOAEL : > 543 mg/m³
 Method : OECD Test Guideline 453
 Result : negative

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.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Components:

morpholine:

Effects on fertility : Species: Rat, male and female
 Application Route: Oral
 Dose: 60/200/600 mg/kg bw/day
 General Toxicity - Parent: NOAEL: 60 mg/kg body weight
 General Toxicity F1: NOAEL: 600 mg/kg body weight
 Method: OECD Test Guideline 443
 Remarks: Information given is based on data obtained from similar substances.

Effects on foetal development : Test Type: Pre-natal
 Species: Rat, females
 Application Route: Oral
 Dose: 75/250/750 mg/kg bw/day
 Duration of Single Treatment: 14 d
 General Toxicity Maternal: NOAEL: 75 mg/kg body weight
 Developmental Toxicity: NOAEL: 750 mg/kg body weight
 Method: OECD Test Guideline 414
 Result: No teratogenic effects
 Remarks: Information given is based on data obtained from similar substances.

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Repeated dose toxicity

Components:

morpholine:

Species : Rat, male and female
 NOEC : 36 mg/m³

Silver Fern Chemical, Inc.

Safety Data Sheet

Morpholine

Version	Revision Date:	SDS Number:	Date of last issue: 02/09/2022
1.4	02/23/2022	400001020150	Date of first issue: 07/27/2016

Print Date 08/17/2026

Application Route	:	Inhalation
Test atmosphere	:	vapour
Exposure time	:	104 weeks 6 h
Number of exposures	:	5 d/week
Dose	:	0/10/50/150 ppm
Method	:	OECD Test Guideline 452
Species	:	Rat, male and female
NOAEL	:	60 mg/kg
Application Route	:	oral (gavage)
Dose	:	60/200/600 mg/kg bw/day
Method	:	Subchronic toxicity
Remarks	:	Information given is based on data obtained from similar substances.

Aspiration toxicity

No data available

Experience with human exposure

No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Product:

Remarks : Solvents may degrease the skin.

Remarks : Solvents may degrease the skin.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

morpholine:

Toxicity to fish : LC50 (Oryzias latipes (Orange-red killifish)): > 100 mg/l
End point: mortality
Exposure time: 96 h
Test substance: Fresh water
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 45 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 64.6 mg/l
Exposure time: 72 h

Silver Fern Chemical, Inc.

Safety Data Sheet

Morpholine

Version	Revision Date:	SDS Number:	Date of last issue: 02/09/2022
1.4	02/23/2022	400001020150	Date of first issue: 07/27/2016

Print Date 08/17/2026

Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 31 mg/l
Exposure time: 72 h
Test substance: Fresh water
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : NOEC (Fish): > 1 mg/l
Test substance: Fresh water

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10 (Daphnia magna (Water flea)): 8.134 mg/l
Exposure time: 21 d
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 211

Toxicity to microorganisms : EC20 (activated sludge): > 1,000 mg/l
Exposure time: 0.5 h
Test Type: static test
Method: OECD Test Guideline 209

Persistence and degradability

Components:

morpholine:

Biodegradability : aerobic
Inoculum: Sewage (STP effluent)
Result: Readily biodegradable.
Biodegradation: 93 %
Exposure time: 25 d
Method: OECD Test Guideline 301E

Photodegradation : Test Type: Air
Degradation (direct photolysis): 50 %

Bioaccumulative potential

Components:

morpholine:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): < 2.8
Exposure time: 42 d
Test substance: Fresh water
Method: flow-through test
Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: -0.84 (77 °F / 25 °C)
pH: 10.3

log Pow: -2.55 (77 °F / 25 °C)
pH: 7

Silver Fern Chemical, Inc.

Safety Data Sheet

Morpholine

Version	Revision Date:	SDS Number:	Date of last issue: 02/09/2022
1.4	02/23/2022	400001020150	Date of first issue: 07/27/2016

Print Date 08/17/2026

Mobility in soil

Components:

morpholine:

Distribution among environmental compartments : Koc: 0.2401
Koc: 7.356

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82
Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of contents and container in accordance with all local, regional, national and international regulations.
Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No. : UN 2054
Proper shipping name : Morpholine
Class : 8
Subsidiary risk : 3
Packing group : I
Labels : Corrosive, Flammable Liquids
Packing instruction (cargo aircraft) : 854
Packing instruction (passenger aircraft) : 850

IMDG-Code

UN number : UN 2054



Silver Fern Chemical, Inc.

Safety Data Sheet

Morpholine

Version	Revision Date:	SDS Number:	Date of last issue: 02/09/2022
1.4	02/23/2022	400001020150	Date of first issue: 07/27/2016

Print Date 08/17/2026

Proper shipping name : MORPHOLINE
Class : 8
Subsidiary risk : 3
Packing group : I
Labels : 8 (3)
EmS Code : F-E, S-C
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

UN/ID/NA number : UN 2054
Proper shipping name : Morpholine
Class : 8
Subsidiary risk : 3
Packing group : I
Labels : CORROSIVE, FLAMMABLE LIQUID
ERG Code : 132
Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Acute toxicity (any route of exposure)
Reproductive toxicity
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).



California Prop. 65 Safe Drinking Water and Toxic Enforcement Act of 1986

WARNING: This product can expose you to chemicals including 2-methoxyethanol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

The components of this product are reported in the following inventories:

DSL : All components of this product are on the Canadian DSL

Silver Fern Chemical, Inc.

Safety Data Sheet

Morpholine

Version	Revision Date:	SDS Number:	Date of last issue: 02/09/2022
1.4	02/23/2022	400001020150	Date of first issue: 07/27/2016

Print Date 08/17/2026

AIIC	: On the inventory, or in compliance with the inventory
NZIoC	: On the inventory, or in compliance with the inventory
ENCS	: On the inventory, or in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: On the inventory, or in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
TCSI	: On the inventory, or in compliance with the inventory
TSCA	: All substances listed as active on the TSCA inventory

Inventories

AIIC (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TECI (Thailand), TSCA (USA)

TSCA - 5(a) Significant New Use Rule List of Chemicals

No substances are subject to a Significant New Use Rule.

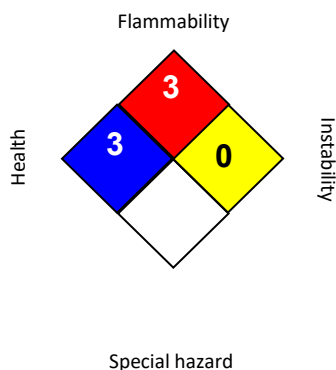
US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV:

HEALTH	*	3
FLAMMABILITY		3
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard

Revision Date : 02/23/2022

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL : USA. NIOSH Recommended Exposure Limits



Silver Fern Chemical, Inc.

Safety Data Sheet

Morpholine

Version	Revision Date:	SDS Number:	Date of last issue: 02/09/2022
1.4	02/23/2022	400001020150	Date of first issue: 07/27/2016

Print Date 08/17/2026

OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA P0 / TWA	:	8-hour time weighted average
OSHA P0 / STEL	:	Short-term exposure limit
OSHA Z-1 / TWA	:	8-hour time weighted average

DISCLAIMER OF RESPONSIBILITY

The information on this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this SDS information may not be applicable.