

# SILVER FERN CHEMICAL



## Safety Data Sheet

### N,N-Dimethylformamide

#### SECTION 1: IDENTIFICATION

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**Product Name:** N,N-Dimethylformamide

**CAS Number:** 68-12-2

**Chemical Name:** N,N-Dimethylformamide

**Synonyms:** *N,N*-Dimethylmethanamide

**Company**

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**Business Contact**

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**24 Hour Emergency Contact**

Infotrac 800-535-5053  
Outside USA & Canada 352-323-3500

#### SECTION 2: HAZARD IDENTIFICATION

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Danger



H226 Flammable liquid and vapor  
H312 + H332 Harmful in contact with skin or if inhaled  
H319 Causes serious eye irritation.  
H360 May damage fertility or the unborn child.

#### SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

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CAS #	Content (W/W)	Hazardous Ingredients
68-12-2	90-100%	N,N-Dimethylformamide



## SECTION 4: FIRST AID MEASURES

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### If inhaled

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

### In case of skin contact

Wash off with soap and plenty of water. 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.

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## SECTION 5: FIRE FIGHTING MEASURES

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**Flash Point:** 58 °C (136 °F) - closed cup

**Lower/Upper explosion limit:** Upper explosion limit: 15.2 %(V)

Lower explosion limit: 2.2 %(V)

### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### Special hazards arising from the substance or mixture

Carbon oxides, nitrogen oxides (NO<sub>x</sub>)

### Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### Further information

Use water spray to cool unopened containers.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

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**Personal precautions:** Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

**Environmental precautions:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**Further information:** 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.

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## SECTION 7: HANDLING AND STORAGE

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**Handling:** Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge.

**Storage:** 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.

## SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

### Components with workplace control parameters:

Component	CAS No.	Value	Control Parameters	Basis
N,N-Dimethylformamide	68-12-2	TWA	10ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Liver damage Substances for which there is a Biological Exposure Index or Indices Not classifiable as a human carcinogen Danger of cutaneous absorption		
		TWA	10 ppm 30 mg/m <sup>3</sup>	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	10 ppm 30 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Skin designation The value in mg/m <sup>3</sup> is approximate.		
		TWA	10 ppm 30 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		Potential for dermal absorption		

### Biological occupational exposure limits:

Component	CAS No.	Parameters	Value	Biological specimen	Basis
N,N-Dimethylformamide	68-12-2	N-Methylformamide	15mg/l	In urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			
		N-Acetyl-S-(N-methylcarbamoyl)cysteine	40mg/l	In urine	ACGIH - Biological Exposure Indices (BEI)
		Prior to last shift in workweek			

### Derived No Effect Level (DNEL)

Application Area	Exposure routes	Health effect	Value
Workers	Skin Contact	Acute systemic effects	26.3mg/kg BW/d
Workers	Inhalation	Acute systemic effects	30 mg/m <sup>3</sup>
Workers	Skin Contact	Long-term systemic effects	3.31mg/kg BW/d
Workers	Inhalation	Long-term systemic effects	15 mg/m <sup>3</sup>
Workers	Inhalation	Long-term local effects	15 mg/m <sup>3</sup>
Workers	Inhalation	Acute local effects	30 mg/m <sup>3</sup>

### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

## Personal Protective Equipment (PPE)

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

Full contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 480 min

Splash contact

Material: Nature latex/chloroprene

Minimum layer thickness: 0.6 mm

Break through time: 30 min

**Eye protection:** Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**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.

### **Control of environmental exposure**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

## **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

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Appearance	Form: liquid, clear, colorless
Odor	amine-like
Odor Threshold	no data available
pH	6.7
Melting point/freezing point	Melting point/range: -61 °C (-78 °F)
Initial boiling point and boiling range	153 °C (307 °F)
Flash point	58 °C (136 °F) - closed cup
Evaporation rate	no data available
Flammability (solid, gas)	no data available
Upper/lower flammability or explosive limits	Upper explosion limit: 15.2 %(V) Lower explosion limit: 2.2 %(V)

<b>Vapor pressure</b>	3.6 hPa (10 mmHg) at 20 °C (68 °F) 5.16 hPa (3.87 mmHg) at 25 °C (77 °F)
<b>Vapor density</b>	2.52 - (Air = 1.0)
<b>Relative density</b>	0.944 g/mL
<b>Water solubility</b>	completely miscible
<b>Auto-ignition temperature</b>	no data available
<b>Partition coefficient: n-octanol/water</b>	log Pow: -1.01

## SECTION 10: STABILITY AND REACTIVITY

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**Conditions to avoid:** Heat, flames and sparks.

**Substances to avoid:** Strong oxidizing agents

**Hazardous reactions:** Stable under recommended storage conditions.

**Decomposition products:** no data available

## SECTION 11: TOXICOLOGICAL INFORMATION

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### Acute toxicity

LD50 Oral - rat - > 2,800 mg/kg

LC50 Inhalation: rat - 4 h - 9-15 mg/l

LD50 Dermal - rabbit - 1,500 mg/kg

### Skin corrosion/irritation

Skin - Human

Result: Mild Skin Irritation - 24 hours

### Serious eye damage/eye irritation

Eyes - rabbit

Result: Moderate eye irritation

### Respiratory or skin sensitization

No data available

### Germ cell mutagenicity

mouse

lymphocyte

Mutation in mammalian somatic cells.

### Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (N,N-Dimethylformamide)

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.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

#### Reproductive toxicity

May cause congenital malformation in the fetus.

#### Additional Information

RTECS: LQ2100000

Warning: intolerance for alcohol can occur up to 4 days after dimethylformamide exposure. N,N-dimethylformamide is considered to be a potent liver toxin., Vomiting, Diarrhea, Abdominal pain, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

## SECTION 12: ECOLOGICAL INFORMATION

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#### Toxicity

Toxicity to fish

LC50 - Oncorhynchus mykiss (rainbow trout) - 9,000 - 13,000 mg/l - 96 h  
LC50 - Lepomis macrochirus (Bluegill) - 6,700 - 7,500 mg/l - 96 h  
LC50 - Pimephales promelas (fathead minnow) - 10,400 - 10,800 mg/l - 96 h  
LC50 - Oncorhynchus mykiss (rainbow trout) - 9,800 mg/l - 96 h  
LC50 - Lepomis macrochirus (Bluegill) - 6,300 mg/l - 96 h  
LC50 - Pimephales promelas (fathead minnow) - 10,600 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates

EC50 - Daphnia magna (Water flea) - 9,600 - 13,100 mg/l - 48 h  
EC50 - Daphnia magna (Water flea) - 15,700 mg/l - 48 h

Toxicity to algae

LC50 - Desmodesmus subspicatus (green algae) - > 500 mg/l - 96 h

Persistence and degradability

Biodegradability Result: > 90 % - Readily biodegradable.

## SECTION 13: DISPOSAL CONSIDERATIONS

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#### 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. Contact a licensed professional waste disposal service to dispose of this material.

#### Contaminated packaging

Dispose of as unused product.

## SECTION 14: TRANSPORT INFORMATION

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#### DOT (US)

UN number: 2265 Class: 3 Packing group: III

Proper shipping name: N,N-Dimethylformamide

Reportable Quantity (RQ): 100 lbs

Marine pollutant: No

Poison Inhalation Hazard: No

**IMDG**

UN number: 2265 Class: 3 Packing group: III EMS-No: F-E, S-D  
 Proper shipping name: N,N-DIMETHYLFORMAMIDE  
 Marine pollutant: No

**IATA**

UN number: 2265 Class: 3 Packing group: III  
 Proper shipping name: N,N-Dimethylformamide

*This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.*

**SECTION 15: REGULATORY INFORMATION**

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REACH No. : 01-2119475605-32-XXXX

**SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

The following components are subject to reporting levels established by SARA Title III, Section 313:

N,N-Dimethylformamide	CAS-No.	Revision Date
	68-12-2	2007-07-01

**SARA 311/312 Hazards**

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

N,N-Dimethylformamide	CAS-No.	Revision Date
	68-12-2	2007-07-01

**Pennsylvania Right To Know Components**

N,N-Dimethylformamide	CAS-No.	Revision Date
	68-12-2	2007-07-01

**New Jersey Right To Know Components**

N,N-Dimethylformamide	CAS-No.	Revision Date
	68-12-2	2007-07-01

**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**SECTION 16: OTHER INFORMATION**

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**DISCLAIMER OF RESPONSIBILITY**

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