

Revision Date: August 26, 2002

1. Identification of Product and Manufacturer

Product Name:	SODIUM FORMATE SOLUTION
Manufacturer: Perstorp Polyols, Inc. 600 Matzinger Road Toledo, Ohio 43612 (419) 729-5448 800-537-0280	Emergency Telephone Number: Transportation: CHEMTREC 1-800-424-9300

2. Composition / Information on Ingredients

Component, wt % Sodium Formate, 25-55% Water, 45-75%	CAS Registry No. 141-53-7 7732-18-5
Chemical Family:	ORGANIC ACID SALT
Trade Name:	FORMATE SOLUTION
Formula:	HCOONa(aq)

3. Hazards IdentificationEmergency Overview

	HMIS
Health	0
Flammability	0
Reactivity	0

Potential Health Effects

Inhalation (breathing):	No threshold limits have been established. High concentrations may cause irritation.
Skin contact:	May cause irritation.
Eye contact:	High concentrations may cause irritation to the eyes.
Ingestion (swallowing):	Moderately toxic by ingestion.

CARCINOGENICITY

Sodium formate	Not listed as a carcinogen.
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4. First Aid Measures

Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Skin contact:	Flush skin immediately with plenty of water for at least 15 minutes while removing contaminated clothing. Call a physician.
Eye contact:	Flush eyes immediately with plenty of water for at least 15 minutes. Call a physician.
Ingestion:	Drink large amounts of water. Call a physician. Never give anything by mouth to an unconscious person.

5. Fire Fighting Measures

Flash Point:	None	LEL: NA	UEL: NA
Extinguishing Media:	Water Spray. Foam. Carbon Dioxide (CO ₂)		
Special Fire Fighting Procedures:	None.		
Unusual Fire and Explosion Hazards:	None.		

6. Accidental Release Measures

Spill, Leak, or Release:	If possible, collect material as a dry solid. Contain spill to keep from spreading. Clean up with suitable sorbent material.
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7. Handling and Storage

45% sodium formate solution solidifies at 10°C.
50% sodium formate solution solidifies at 24°C.

8. Exposure Controls / Personal Protection

OSHA PEL – None established

Appropriate protective clothing should be used as available: Impervious type gloves, safety glasses or goggles.

9. Physical and Chemical Properties

Boiling Point	110-120°C. (230-250°F)
Vapor Pressure	Not applicable
Vapor Density	Not applicable
Evaporation Rate	Not applicable
Water Solubility	Not applicable
Odor	None
Form	Colorless liquid
Specific Gravity	1.20 - 1.33

10. Stability and Reactivity

Instability:	Stable.
Conditions to Avoid:	None.
Incompatibility:	None.
Decomposition:	Decomposes with heat. Thermal decomposition may produce hydrogen.

11. Toxicological Information

Sodium formate

Mouse - oral - LD50: 11,200 mg/kg (SAX).

Dog - oral - LDLo (lowest published lethal dose): 4,000 mg/kg (SAX).

12. Ecological Information

Persistence/Biodegradability:	Product is readily biodegradable.
Ecotoxicity:	Not available.

13. Disposal Considerations

Dispose in accordance with Federal, State, and local regulations.

14. Transportation Information

DOT/IMO

Sodium formate is not a hazardous material under current Department of Transportation regulations.

15. Regulatory Information

SARA TITLE III HAZARD CLASSIFICATIONS

Acute	No
Chronic	No
Fire	No
Reactivity	No
Pressure	No

LISTS:

TSCA Registry (sodium formate)	Yes
SARA Extremely Hazardous Substance	No
CERCLA Hazardous Material	No
European EINECS Number	205-488-0
Canadian Domestic Substance List	Yes
Japan ENCS	2-676X
Korea ECL	KE-17247
Australia ECS	Yes

16. Other Information

Reason for issue or revision: Revised to 16-point format. Added Ecological Information section. Add International Listings in Section 15.

Prepared by:	A. Sloma
Title:	Environment, Health & Safety Manager
Approval Date:	August 26, 2002

To the best of our knowledge, the information contained herein is accurate. However, Perstorp Polyols, Inc. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

MSDS # 295.00

Formic Acid



Section 1: Product and Company Identification

Formic Acid

Synonyms/General Names: Methanoic Acid**Product Use:** For educational use only**Manufacturer:** Columbus Chemical Industries, Inc., Columbus, WI 53925.

24 Hour Emergency Information Telephone Numbers

CHEMTREC (USA): 800-424-9300**CANUTEC (Canada): 613-424-6666**

Scholar Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

Colorless fuming liquid, strong odor.

DANGER! Strongly corrosive to body tissue and slightly toxic by ingestion. Severe inhalation hazard.
Combustible liquid, keep away from ignition sources.
Target organs: None known.

HMIS (0 to 4)

Health	3
Fire Hazard	2
Reactivity	0

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Section 3: Composition / Information on Ingredients

Formic Acid (64-18-6), 88-92%.

Water (7732-18-5), 8-12%.

Section 4: First Aid Measures

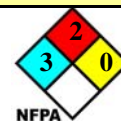
*Always seek professional medical attention after first aid measures are provided.***Eyes:** Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.**Skin:** Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.**Ingestion:** Call Poison Control immediately. **Do not induce vomiting.** Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink.**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Class II Combustible liquid. When heated to decomposition, emits acrid fumes of carbon oxides.

Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire.

Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.



Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Remove all ignition sources and ventilate area. Contain spill with sand or absorbent material and place material in a sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage

White**Handling:** Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.**Storage:** Store in Corrosive Area [White Storage] with other corrosive items. Store in a dedicated corrosive cabinet. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with an acid/organic cartridge. Exposure guidelines Formic Acid: OSHA PEL: 9 mg/m³ and ACGIH TLV: 9.4 mg/m³, STEL: 19 mg/m³.

Section 9: Physical and Chemical Properties

Molecular formula	HCOOH.	Appearance	Colorless fuming liquid.
Molecular weight	46.03.	Odor	Strong odor.
Specific Gravity	1.21 g/mL @ 20°C.	Odor Threshold	N/A.
Vapor Density (air=1)	1.59.	Solubility	Completely soluble in water.
Melting Point	8.4°C.	Evaporation rate	1.6 (Butyl acetate = 1).
Boiling Point/Range	101°C decomposes.	Partition Coefficient	N/A (log P_{OW}).
Vapor Pressure (20°C)	44.8 mmHg.	pH	1, very acidic, (corrosive).
Flash Point:	69°C (156°F) CC.	LEL	18 %.
Autoignition Temp.:	520°C (968°F).	UEL	57 %.

Section 10: Stability and Reactivity

Avoid heat and ignition sources.

Stability: Stable under normal conditions of use. During storage decomposes to carbon monoxide and water, creating explosive danger in a tightly closed bottle. Avoid extended storage.

Incompatibility: Acids, bases, oxidizers.

Shelf life: Poor shelf life, hygroscopic, store in cool, dry environment.

Section 11: Toxicology Information

Acute Symptoms/Signs of exposure: **Eyes:** Redness, tearing, itching, burning, damage to cornea, conjunctivitis, loss of vision.

Skin: Redness, blistering, burning, itching, tissue destruction with slow healing. **Ingestion:** Nausea, vomiting, burning, diarrhea, ulceration, convulsions, shock. **Inhalation:** Coughing, wheezing, shortness of breath, headache, spasm, inflammation and edema of bronchi, pneumonitis.

Chronic Effects: Repeated/prolonged skin contact may cause thickening, blackening or cracking. Repeated eye exposure may cause corneal erosion or loss of vision.

Sensitization: none expected

Formic Acid: LD50 [oral, rabbit]; 1100 mg/m³; LC50 [rat]; 3750 ppm ; LD50 Dermal [rabbit]; N/A

Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

Ecotoxicity (aquatic and terrestrial): Ecological impact has not been determined.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer disposal after being neutralized to pH 7.

Section 14: Transport Information

DOT Shipping Name:	Formic Acid.	Canada TDG:	Formic Acid.
DOT Hazard Class:	8(3), pg II.	Hazard Class:	8, pg II .
Identification Number:	UN1779.	UN Number:	UN1779.

Section 15: Regulatory Information

EINECS: Listed (200-579-1).

WHMIS Canada: B3, E: Combustible, Corrosive liquid.

TSCA: All components are listed or are exempt.

California Proposition 65: Not listed.

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

Current Issue Date: January 23, 2009

Disclaimer: Scholar Chemistry and Columbus Chemical Industries, Inc., ("S&C") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because S&C has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. S&C makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein or with respect to fitness for any particular use.