

Safety Data Sheet

Material Name: Sodium Formate

ID: C1-185

*** Section 1 - Identification ***

Chemical Name: Sodium Formate, Technical Grade

Product Use: For Commercial Use

RESTRICTIONS on USE

NOT TO BE USED AS A PESTICIDE. THIS PRODUCT IS NOT TO BE USED IN VIOLATION OF ANY PATENTS. CHEM ONE LTD. DISCLAIMS ANY AND ALL WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR APPLICATION. IN NO EVENT SHALL CHEM ONE LTD. OR ITS SUPPLIERS BE LIABLE FOR ANY DAMAGES WHATSOEVER INCLUDING DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, LOSS OF BUSINESS PROFITS OR SPECIAL DAMAGES, EVEN IF CHEM ONE LTD. OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. SOME STATES DO NOT ALLOW THE EXCLUSION OF LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES SO THE FOREGOING LIMITATION MAY NOT APPLY.

Supplier Information

Chem One Ltd.
14140 Westfair East Drive
Houston, Texas 77041-1104

Phone: (713) 896-9966

Fax: (713) 896-7540

Emergency # (800) 424-9300 or +1 (703) 527-3887

NOTE: Emergency telephone numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

*** Section 2 – Hazard(s) Identification ***

GHS HAZARD

Hazard Classes

Combustible Dust

Hazard Categories

Signal Word: Warning

Pictograms: None

Hazard Statements

PHYSICAL HAZARDS:

May form combustible dust concentrations in air

HEALTH HAZARDS:

None

ENVIRONMENTAL HAZARDS:

None

PRECAUTIONARY STATEMENTS:

P102: Keep out of reach of children

P202: Do not handle until all safety precautions have been read and understood

RESPONSE STATEMENTS:

None.

STORAGE STATEMENTS:

None

DISPOSAL STATEMENTS:

P501: Dispose of content and/or container in accordance with local, regional, national or international regulations

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Hazards not otherwise classified (HNOC):

No data available

* * * Section 3 - Composition/information on Ingredients * * *

CAS #	Component	Percent
141-53-7	Sodium Formate	> 97

Synonyms: Formic Acid, Sodium Salt; Salachlor

* * Section 4 - First Aid Measures * * *

Emergency Overview

Sodium Formate is a white crystalline solid, which is odorless or which has a slight odor characteristic of formic acid. May cause irritation to the eyes, skin, and mucous membranes of the upper respiratory tract. Sodium Formate is deliquescent and will absorb moisture from the air. Sodium Formate is not combustible, however, as an organic solid, dusts of this product may create an explosion hazard in the presence of a source of ignition. Use extinguishing media appropriate for surrounding fire. Thermal decomposition of this product produces irritating vapors and toxic gases (e.g. carbon dioxide, carbon monoxide and sodium oxides). Emergency responders should wear proper personal protective equipment for the releases to which they are responding.

Description of first aid measures:

In case of eye contact: In case of contact with eyes, rinse immediately with plenty of water for at least 20 minutes. Seek immediate medical attention.

In case of skin contact: Remove all contaminated clothing. For skin contact, wash thoroughly with soap and water for at least 20 minutes. Seek immediate medical attention if irritation develops or persists.

In case of ingestion: Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Immediately give large amounts of water. If vomiting occurs naturally, rinse mouth and repeat administration of water. Obtain medical advice immediately. Never give anything by mouth to a victim who is unconscious or having convulsions.

If inhaled: Remove source of contamination or move victim to fresh air. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult. Get immediate medical attention.

Symptoms and potential health effects:

Eyes: Exposure to particulates or solution of this product may cause irritation of the eyes with symptoms such as stinging, tearing, redness and pain.

Skin: This product can cause irritation of the skin, especially after prolonged exposures. Repeated skin contact may lead to dermatitis (red, cracked skin).

Ingestion: Ingestion of this product (especially in large volumes) can irritate the tissues of the mouth, esophagus, and other tissues of the digestive system. Symptoms of exposure can include vomiting, diarrhea, and nausea.

Inhalation: Breathing dusts or particulates generated by this product can lead to irritation of the nose, throat or respiratory system. Symptoms of such exposure could include coughing, sneezing, and chest discomfort.

Notes to Physician and Special Treatment:

Provide general supportive measures and treat symptomatically.

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*** Section 5 - Fire Fighting Measures ***

General Fire Hazards

Under certain conditions, airborne dusts of Sodium Formate can explode when ignited by a spark, flame or other ignition source. The minimum explosion concentration of airborne dust has been found to be greater than 1500 g/m³. The minimum explosion ignition temperature for dusts of Sodium Formate is 550°C (1022°F). When involved in a fire, this material may decompose and produce irritating vapors, acrid smoke and toxic gases. Refer to NFPA 654, *Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids*, for comprehensive guidance.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide and sodium oxides. When heated above 253°C (487.4°F), Sodium Formate can decompose to form flammable hydrogen gas.

Extinguishing Media

Use any media suitable for the surrounding fire. Regular dry chemical, carbon dioxide, water, and regular foam.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective clothing including self-contained breathing apparatus. If possible control runoff from fire control or dilution water to prevent environmental contamination.

NFPA Ratings: Health: 1 Fire: 1 Reactivity: 0 Other: None.

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

*** Section 6 - Accidental Release Measures ***

Personal precautions

Evacuate the area promptly and keep upwind of the spilled material. Isolate the spill area to prevent people from entering. In case of large spills, follow all facility emergency response procedures. Small releases can be cleaned up wearing gloves, goggles and suitable body protection. In case of a large spill (in which excessive dusts can be generated), clear the affected area, protect people, and respond with trained personnel. If a vacuum is used for spill clean-up, only an explosion-proof vacuum should be used, due to the potential for dust explosion. Remove soiled clothing and launder before reuse. Avoid all skin contact with the spilled material. Have emergency equipment readily available.

Methods and materials for containment and clean-up

Stop the flow of material, if this can be done without risk. Contain the discharged material. If sweeping of a contaminated area is necessary use a dust suppressant agent, which does not react with product (see Section 10 for incompatibility information). Do not allow the spilled product to enter public drainage system or open water courses. Place all spill residues in an appropriate container and seal. Thoroughly wash the area after a spill or leak clean-up.

Environmental precautions

Prevent spill rinsate from contamination of storm drains, sewers, soil or groundwater.

*** Section 7 - Handling and Storage ***

Handling Procedures

All employees who handle this material should be trained to handle it safely. Do not breathe dust. Avoid all contact with skin and eyes. Avoid accumulation of dusts of this product. Areas in which this compound is used should be wiped down periodically so that this substance is not allowed to accumulate. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Use this product only with adequate ventilation. Wash thoroughly after handling. Sodium Formate is deliquescent and will absorb moisture from the air to form wet solid or solution.

Storage Procedures

Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Storage areas should be made of fire-

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resistant materials. Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Refer to NFPA 654, *Prevention of Fire and Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids* for additional information on storage. Containers of this material should be separated from oxygen, or other oxidizers, by a minimum distance of 20 ft., or by a barrier of non-combustible material at least 5 ft. high, having a fire-resistance rating of at least 0.5 hours. Additional information can be found the OSHA Safety and Health Information Bulletin: *Combustible Dust in Industry: Preventing and Mitigating the Effects of Fire and Explosions*. Use only appropriately classified electrical equipment and powered industrial trucks. Use corrosion-resistant structural materials, lighting, and ventilation systems in the storage area. Floors should be sealed to prevent absorption of this material. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (i.e., sprinkler system, portable fire extinguishers).

Empty containers may contain residual particulates; therefore, empty containers should be handled with care. Do not cut, grind, weld, or drill near this container. Never store food, feed, or drinking water in containers that held this product. Keep this material away from food, drink and animal feed. Do not store this material in open or unlabeled containers. Limit quantity of material stored.

*** Section 8 - Exposure Controls / Personal Protection ***

Exposure Guidelines

A: General Product Information

No exposure guidelines have been established. Use a non-sparking, grounded, explosion-proof ventilation system separate from other exhaust ventilation systems. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

B: Component Exposure Limits

ACGIH, OSHA, and NIOSH have not developed exposure limits for any of this product's components.

Component	CAS #	Value	Type/Regulation
Particulates Not Otherwise Classified	N/A	10 mg/m ³	ACGIH – TWA (inhalable fraction)
		3 mg/m ³	ACGIH – TWA (respirable fraction)
		15 mg/m ³	OSHA – TWA (total dust)
		5 mg/m ³	OSHA – TWA (respirable fraction)
		4 mg/m ³	DFG MAKs – TWA (inhalable fraction)
		1.5 mg/m ³	DFG MAKs – TWA (respirable fraction)

Engineering Controls

Use engineering methods to control hazardous conditions. This includes exhaust ventilation directly to the outside and using a corrosion-resistant ventilation system separate from other exhaust ventilation systems.

PERSONAL PROTECTIVE EQUIPMENT

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132). Please reference applicable regulations and standards for relevant details.

Personal Protective Equipment: Eyes/Face

Wear chemical safety goggles. If necessary, refer to U.S. OSHA 29 CFR 1910.133.

Personal Protective Equipment: Skin

Use impervious gloves. Gloves should be tested to determine their suitability for prolonged contact with this material. If necessary, refer to U.S. OSHA 29 CFR 1910.138.

Personal Protective Equipment: Respiratory

None required where adequate ventilation conditions exist. If airborne concentration is high, use an appropriate respirator or dust mask. If airborne concentrations are above the applicable exposure limits, use NIOSH-approved respiratory protection. If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134).

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Personal Protective Equipment: General

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Protective Clothing Pictograms:



Splash Goggles



Gloves



Protective Apron



Dust Respirator

*** Section 9 - Physical & Chemical Properties ***

Physical Properties:

Physical State:	Solid
Appearance:	White crystalline powder
Odor:	Odorless
Odor Threshold:	Not applicable
pH:	7.0 – 8.5 (1 M solution, 20 °C)
Melting Point/Range:	253 °C (487 °F)
Boiling Point/Range:	Not applicable
Flash Point:	Not applicable
Evaporation Rate:	Not applicable
Flammability:	Combustible dust
Flammability/Explosive Limits:	Not applicable
Vapor Pressure:	Zero
Vapor Density:	Not applicable
Specific Gravity:	1.92 @ 20 °C (H ₂ O = 1)
Solubility in Water:	77 g/100 mL
Partition Coefficient:	Not determined
Autoignition Temperature:	Not applicable
Decomposition Temperature:	253 °C (487 °F)
Viscosity:	Not applicable
Chemical Formula:	CHO ₂ Na
Molecular Weight:	68.02
Softening Point:	Not applicable
Particle Size:	Majority 2 – 4 mm
Bulk Density:	0.90 – 0.95 kg/L
Heat of Combustion:	Not determined

Additional Information

The data provided in this section are to be used for product safety handling purposes. Please refer to Product Data Sheets, Certificates of Conformity or Certificates of Analysis for chemical and physical data for determinations of quality and for formulation purposes.

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

Product is normally stable in solid form. Sodium Formate is deliquescent; on exposure to air it will absorb water. Forms highly flammable hydrogen gas at temperatures above 253 °C.

Chemical Stability: Conditions to Avoid

Avoid conditions of heat, flames, sparks and other sources of ignition. Protect from moisture.

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Incompatibility

This material is incompatible with strong oxidizers, there is a risk of fire. Sodium Formate may react vigorously with strong acids and will decompose to produce formic acid.

Hazardous Decomposition

Carbon monoxide, carbon dioxide and oxides of sodium. When heated above 253°C (487.4°F), Sodium Formate decomposes to form sodium oxalate and hydrogen and then into sodium carbonate.

Hazardous Polymerization

Will not occur.

*** Section 11 - Toxicological Information ***

Acute and Chronic Toxicity

A: General Product Information

Mildly toxic by ingestion, intravenous and subcutaneous routes.

Chronic: Long term skin overexposure to this product may lead to dermatitis (red, itchy skin).

B: Component Analysis

Sodium Formate:

Route of Exposure	Test Type and Value
Oral:	LD ₅₀ (rat) = > 5000 mg/kg LD ₅₀ (mouse) = 2500 mg/kg LD _{Lo} (dog, adult) = 4000 mg/kg
Inhalation:	Not determined
Dermal:	Not determined
Subcutaneous:	LD _{Lo} (cat, adult) = 1140 mg/kg
Intravenous:	LD ₅₀ (mouse) = 807 mg/kg LD _{Lo} (dog, adult) = 3000 mg/kg LD _{Lo} (rabbit, adult) = 1250 mg/kg

Carcinogenicity:

A: General Product Information

Sodium Formate is not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

B: Component Carcinogenicity

This material is not carcinogenic.

Epidemiology

Prolonged skin contact may cause dermatitis.

Mutagenicity

No information available.

Teratogenicity

No information available.

Other Toxicological Information

None.

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*** Section 12 - Ecological Information ***

Toxicity to fish: LC₅₀ = 954 mg/L (96 h)
Toxicity to invertebrates: EC₅₀ = 790 mg/L (*Daphnia*, 48 h)
Toxicity to algae: LC₅₀ = 790 mg/L (96 h)
Toxicity to bacteria: Not determined

Bioaccumulative potential: No data available

Mobility in soil: No data available

Results of PBT and vPvB assessment: No data available

PBT/vPvB: No data available

Other adverse effects: No data available

*** Section 13 - Disposal Considerations ***

US EPA Waste Number & Descriptions

A: General Product Information

As shipped, this product is not considered a hazardous waste.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions

All wastes must be handled in accordance with local, state and federal regulations or with. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

*** Section 14 - Transportation Information ***

NOTE: The shipping classification information in this section (Section 14) is meant as a guide to the overall classification of the product. However, transportation classifications may be subject to change with changes in package size. Consult shipper requirements under I.M.O., I.C.A.O. (I.A.T.A.) and 49 CFR to assure regulatory compliance.

US DOT Information

Shipping Name: Not applicable.

Hazard Class: Not applicable

UN/NA #: Not applicable

Packing Group: Not applicable

Required Label(s): Not applicable

RQ Quantity: Not applicable

International Air Transport Association (IATA):

For Shipments by Air transport: Not considered hazardous.

International Maritime Organization (I.M.O.) Classification

I.M.O. Classification: Not considered hazardous under IMDG/ I.M.O. regulations.

*** Section 15 - Regulatory Information ***

US Federal Regulations

A: General Product Information

No additional information.

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B: Component Analysis

Sodium Formate is not listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

SARA 302 There are no specific Threshold Planning Quantities for Sodium Formate. The default Federal MSDS submission (EHS TPQ) and inventory requirement filing threshold of 10,000 lbs (4,540 kg) therefore applies, per 40 CFR 370.20.

C: Sara 311/312 Tier II Hazard Ratings:

Component	CAS #	Fire Hazard	Reactivity Hazard	Pressure Hazard	Immediate Health Hazard	Chronic Health Hazard
Sodium Formate	141-53-7	No	No	No	Yes	No

State Regulations

A: General Product Information

California Proposition 65

Sodium Formate is not on the California Proposition 65 chemical lists.

B: Component Analysis – State

The following components appear on one or more of the following state hazardous substance lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Sodium Formate	141-53-7	No	No	No	No	No	No

Other Regulations

A: General Product Information

No other information available.

B: Component Analysis - Inventory

Component	CAS #	TSCA
Sodium Formate	141-53-7	Yes Active

*** Section 16 - Other Information ***

Other Information

Chem One Ltd. ("Chem One") shall not be responsible for the use of any information, product, method, or apparatus herein presented ("Information"), and you must make your own determination as to its suitability and completeness for your own use, for the protection of the environment, and for health and safety purposes. You assume the entire risk of relying on this Information. In no event shall Chem One be responsible for damages of any nature whatsoever resulting from the use of this product or products, or reliance upon this Information. By providing this Information, Chem One neither can nor intends to control the method or manner by which you use, handle, store, or transport Chem One products. If any materials are mentioned that are not Chem One products, appropriate industrial hygiene and other safety precautions recommended by their manufacturers should be observed. Chem One makes no representations or warranties, either express or implied of merchantability, fitness for a particular purpose or of any other nature regarding this information, and nothing herein waives any of Chem One's conditions of sale. This information could include technical inaccuracies or typographical errors. Chem One may make improvements and/or changes in the product (s) and/or the program (s) described in this information at any time. If you have any questions, please contact us at Tel. 713-896-9966 or E-mail us at Safety@chemone.com.

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration

Revision Log

08/28/00 4:18 PM SEP Changed company name, Sect 1 and 16, from Corporation to Ltd.

06/02/01 9:31 AM Checked exposure limits; made changes to Section 9; overall review, add SARA 311/312 Hazard Ratings.

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08/20/01 4:10 PM CLJ Add Shipments by Air information to Section 14, Changed contact to Sue, non-800 Chemtrec Num.
2/18/02 11:05 AM HDF Addition of note on air/dust explosion hazard below SARA Hazard Ratings Table, changed contact name to SP-K and added non-800 emergency number.
09/29/03: 12:45 PM HDF General review and up-date of entire MSDS. Up-graded Section 10 Reactivity Information. Up-date of HMIS categories. Up-date of Section 8. Up-date of toxicity data, Section 11. Up-date of Section 14.
06/22/05 10:44 AM SEP Update IATA Section 14
10/15/08 9:32 AM DLY Changed Chem One Physical Address, Section 1
06/17/10 SEP Update IATA and air/dust explosion hazard
10/20/2014 GHS revision all sections
This is the end of SDS # C1-185

Revised By:
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09/27/2018 Melanie Koch audited. Nothing else was changed during this revision.
06/10/2019 Revised Sections 2, 4 and 9, removed ANSI Labeling.
08/24/2021 Modified format. Revised Section 15 information.