Safety Data Sheet

Sodium formate-d

According to Regulation (EC) No. 1907/2006 (REACH)

Version number: GHS 3.0
Replaces version of: 2023-02-02 (GHS 2)

Revision: 2024-08-09

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Identification of the substance	**Sodium formate-d**
Registration number (REACH)	this information is not available
CAS number	3996-15-4
Alternative name(s) sodium formate-d	
Alternative name(s)	sodium formate-d
Alternative name(s)	sodium formate-d

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	industrial uses the product is intended for research, analysis and scientific education scientific research and development product and process oriented research and development laboratory and analytical use laboratory chemical

1.3 Details of the supplier of the safety data sheet

Zeochem AG
Joweid 5, CH-8630 Rüti
Switzerland

Telephone: +41 44 922 93 93
e-Mail: info@zeochem.com
Website: https://www.zeochem.com

1.4 Emergency telephone number

Poison centre

Country	Name	Telephone
Switzerland	Toxzentrum Zürich / Tox. Info Suisse	+41 44 251 51 51 / CH: 145 - 24h/7d
United States	CHEMTREC USA	+1 800 424 9300 - 24h/7d

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Section	Hazard class	Category	Hazard class and category	Hazard statement
3.1I	acute toxicity (inhal.)	3	Acute Tox. 3	H331

For full text of abbreviations: see SECTION 16.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

- Signal word danger

2.2.1.2 **Pictograms**

GHS06	

Hazard statements	
H331	toxic if inhaled

Precautionary statements	
P261	avoid breathing dust/fume/gas/mist/vapours/spray
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing
P311	call a POISON CENTER/doctor
P321	specific treatment (see on this label)
P403+P233	store in a well-ventilated place. Keep container tightly closed
P501	dispose of contents/container in accordance with local/regional/national/international regulations

2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance Sodium formate-d

Identifiers

CAS No 3996-15-4

Purity ≥90 %

Specific Conc. Limits	M-Factors	ATE	Exposure route
-	-	>0.67 $^{mg}/_{l}$/4h	inhalation: dust/mist

Molecular formula CDO2Na

Molar mass 69 $^{g}/_{mol}$

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact

Brush off loose particles from skin. Rinse skin with water/shower.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water, Foam, Alcohol resistant foam, ABC-powder

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

Deposited combustible dust has considerable explosion potential.

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO2)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains, Take up mechanically

Advice on how to clean up a spill

Take up mechanically.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

Store in a dry place.

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Take precautionary measures against static discharge. Use only in well-ventilated areas. Ground/bond container and receiving equipment.

- Specific notes/details

Dust deposits may accumulate on all deposition surfaces in a technical room. The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

- Explosive atmospheres

Removal of dust deposits.

- Ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted. Use local and general ventilation.

- Packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

7.3 Specific end use(s)

See section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Ceiling-C [ppm]	Ceiling-C [mg/m³]	Notation	Source
DE	dust		MAK		4					i	DFG
DE	dust		AGW		10		20			Y, i	TRGS 900
DE	dust		AGW		1.25		2.5			Y, r	TRGS 900
DE	dust		MAK		0.3		2.4			r	DFG
FR	dusts (exterior locations of mines and quarries)		VME		5					r	INRS
FR	dusts (premises with specific pollution)		VME		7						INRS
FR	dusts (premises with specific pollution)		VME		3.5					r	INRS

Notation

Ceiling-C	ceiling value is a limit value above which exposure should not occur
i	inhalable fraction
r	respirable fraction
STEL	short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
TWA	time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)
Y	a risk of developmental toxicity does not need to be expected if the occupational exposure limit value and the biological limit value (BGW) are adhered to

Human health values

Relevant DNELs and other threshold levels

Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	35.3 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
DNEL	10 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

Environmental values

Relevant PNECs and other threshold levels

Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
PNEC	2 mg/l	aquatic organisms	freshwater	short-term (single instance)

Relevant PNECs and other threshold levels				
Endpoint	**Threshold level**	**Organism**	**Environmental compartment**	**Exposure time**
PNEC	0.2 $^{mg}/_{l}$	aquatic organisms	marine water	short-term (single instance)
PNEC	2.21 $^{mg}/_{l}$	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
PNEC	13.4 $^{mg}/_{kg}$	aquatic organisms	freshwater sediment	short-term (single instance)
PNEC	1.34 $^{mg}/_{kg}$	aquatic organisms	marine sediment	short-term (single instance)
PNEC	1.5 $^{mg}/_{kg}$	terrestrial organisms	soil	short-term (single instance)

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear protective gloves.

- Type of material

Nitrile
IIR: isobutene-isoprene (butyl) rubber

- Breakthrough times of the glove material

>30 minutes (permeation: level 2)

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

Particulate filter device (EN 143).

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	solid
Colour	white
Odour	characteristic
Melting point/freezing point	255 – 258 °C
Boiling point or initial boiling point and boiling range	not determined

Flammability	this material is combustible, but will not ignite readily
Lower and upper explosion limit	not relevant (solid)
Flash point	not applicable
Auto-ignition temperature	>400 °C (ECHA)
Decomposition temperature	681 K (ECHA)
pH (value)	not applicable
Kinematic viscosity	not relevant

Solubility(ies)

Water solubility	>1,000 $^{g}/_{l}$ at 20 °C

Partition coefficient

Partition coefficient n-octanol/water (log value)	-2.1 (pH value: 7, 23 °C) (ECHA)
Soil organic carbon/water (log KOC)	1.49 (ECHA)

Vapour pressure	0 Pa at 25 °C

Density and/or relative density

Density	not determined
Relative vapour density	not relevant (solid)

Particle characteristics	no data available

9.2 Other information

Information with regard to physical hazard classes	hazard classes acc. to GHS (physical hazards): not relevant

Other safety characteristics

Surface tension	71 $^{mN}/_{m}$ (20 °C) (ECHA)

SECTION 10: Stability and reactivity

10.1 Reactivity
Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability
See below "Conditions to avoid".

10.3 Possibility of hazardous reactions
No known hazardous reactions.

10.4 Conditions to avoid
There are no specific conditions known which have to be avoided.

Hints to prevent fire or explosion

The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

10.5 Incompatible materials
Oxidisers

10.6 Hazardous decomposition products
Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Toxic if inhaled.

GHS of the United Nations, annex 4: May be harmful in contact with skin.

- Acute toxicity estimate (ATE)
Inhalation: dust/mist >0.67 $^{mg}/_{l}$/4h

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

12.2 Persistence and degradability

Biodegradation

The substance is readily biodegradable.

Process of degradability		
Process	**Degradation rate**	**Time**
oxygen depletion	7 %	5 d

12.3 Bioaccumulative potential

Data are not available.

n-octanol/water (log KOW)	-2.1 (pH value: 7, 23 °C) (ECHA)

12.4 Mobility in soil

Henry's law constant	0.019 $^{Pa\ m^3}/_{mol}$ at 25 °C
The Organic Carbon normalised adsorption coefficient	1.49 (ECHA)

12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

14.1	**UN number or ID number**	not assigned
14.2	**UN proper shipping name**	not assigned
14.3	**Transport hazard class(es)**	none
14.4	**Packing group**	not assigned
14.5	**Environmental hazards**	non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - Additional information

not assigned

International Maritime Dangerous Goods Code (IMDG) - Additional information

not assigned

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

not assigned

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII

not listed

List of substances subject to authorisation (REACH, Annex XIV) / SVHC - candidate list

not listed

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

Water Framework Directive (WFD)

List of pollutants (WFD)			
Name of substance	**CAS No**	**Listed in**	**Remarks**
Sodium formate-d		a)	

Legend

a) Indicative list of the main pollutants

Regulation on persistent organic pollutants (POP)

not listed

National inventories

Country	Inventory	Status
EU	REACH Reg.	substance is listed
US	TSCA	substance is listed (ACTIVE)

Legend

REACH Reg. REACH registered substances
TSCA Toxic Substance Control Act

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
1.1	CAS number: 3996-15-4	CAS number: 3996-15-4 Alternative name(s) sodium formate-d	yes
1.1		Alternative name(s): sodium formate-d	yes
1.3	Details of the supplier of the safety data sheet: Zeochem AG Joweid 5, CH-8630 Rüti Switzerland Telephone: +41 44 922 93 93 e-Mail: info@zeochem.com / info@zeochem.ch Website: https://www.zeochem.com	Details of the supplier of the safety data sheet: Zeochem AG Joweid 5, CH-8630 Rüti Switzerland Telephone: +41 44 922 93 93 e-Mail: info@zeochem.com Website: https://www.zeochem.com	yes
1.4		Poison centre: change in the listing (table)	yes
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.	yes
8.1		Occupational exposure limit values (Workplace	yes

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
		Exposure Limits): change in the listing (table)	
9.1	Lower and upper explosion limit: not determined	Lower and upper explosion limit: not relevant (solid)	yes
9.1	Relative vapour density: information on this property is not available	Relative vapour density: not relevant (solid)	yes
12.5	Results of PBT and vPvB assessment: Data are not available.	Results of PBT and vPvB assessment: According to the results of its assessment, this substance is not a PBT or a vPvB.	yes
12.6	Endocrine disrupting properties: Not listed.	Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.	yes
14.1	UN number or ID number	UN number or ID number: not assigned	yes
14.1	ADR/RID/ADN: UN 2811		yes
14.1	IMDG-Code: UN 2811		yes
14.1	ICAO-TI: UN 2811		yes
14.2	ADR/RID/ADN: TOXIC SOLID, ORGANIC, N.O.S.		yes
14.2	IMDG-Code: TOXIC SOLID, ORGANIC, N.O.S.		yes
14.2	ICAO-TI: Toxic solid, organic, n.o.s.		yes
14.2	Technical name: Sodium formate-d		yes
14.3	ADR/RID/ADN: 6.1		yes
14.3	IMDG-Code: 6.1		yes
14.3	ICAO-TI: 6.1		yes
14.4	ADR/RID/ADN: III		yes
14.4	IMDG-Code: III		yes
14.4	ICAO-TI: III		yes
14.7	Classification code: T2		yes
14.7	Danger label(s): 6.1		yes
14.7		Danger label(s): change in the listing (table)	yes

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
14.7	Special provisions (SP): 274, 614, 802(ADN)		yes
14.7	Excepted quantities (EQ): E1		yes
14.7	Limited quantities (LQ): 5 kg		yes
14.7	Transport category (TC): 2		yes
14.7	Tunnel restriction code (TRC): E		yes
14.7	Hazard identification No: 60		yes
14.7	Marine pollutant: -		yes
14.7	Danger label(s): 6.1		yes
14.7		Danger label(s): change in the listing (table)	yes
14.7	Special provisions (SP): 223, 274		yes
14.7	Excepted quantities (EQ): E1		yes
14.7	Limited quantities (LQ): 5 kg		yes
14.7	EmS: F-A, S-A		yes
14.7	Stowage category: A		yes
14.7	Danger label(s): 6.1		yes
14.7		Danger label(s): change in the listing (table)	yes
14.7	Special provisions (SP): A3, A5		yes
14.7	Excepted quantities (EQ): E1		yes
14.7	Limited quantities (LQ): 10 kg		yes
14.2	UN proper shipping name	UN proper shipping name: not assigned	yes
14.3	Transport hazard class(es)	Transport hazard class(es): none	yes
14.4	Packing group	Packing group: not assigned	yes
14.7	Transport of dangerous goods by road, rail and	Transport of dangerous goods by road, rail and	yes

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
	inland waterway (ADR/RID/ADN) - Additional information	inland waterway (ADR/RID/ADN) - Additional information: not assigned	
14.7	International Maritime Dangerous Goods Code (IMDG) - Additional information	International Maritime Dangerous Goods Code (IMDG) - Additional information: not assigned	yes
14.7	International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information	International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information: not assigned	yes
15.1		National inventories: change in the listing (table)	yes

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H331	Toxic if inhaled.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.