

# SDS - Safety Data Sheet

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

## 1 Identification of the substance / preparation and company / undertaking

Product name	<b>SANBIO® AQUA</b>
Chemical product name	Sodium Formate solution in aqueous formic Acid
Synonyms	
Supplier	SANBOS GmbH Geraer Straße 14 D-06712 Gutenborn, OT Drossdorf Germany Tel. +49-3441-539873 Fax +49-3441-539874
Emergency Telephone no	+49-(0)173-6990195
e-mail-address of person responsible for this MSDS	jm@sanbos.com
Recommended use	liquid, corrosive premixture of formic acid, sodium formate and citric acid for the use in animal nutrition.

## 2 Hazards identification

Classification according to 67/548/EEC or 1999/45/EC	C; R34
Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]	H314
Composition on the label	Formic acid: 51 - 63 % Sodium formate: 28 - 36 % Citric acid: 1 - 6 %
Signal word	Danger
Hazard statements	H314 Causes severe skin burns and eye damage.
Precautionary statements	P102 Keep out of reach of children. P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P280 Wear protective gloves/protective clothing/eye protection/face protection. P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER or doctor/physician. P501 Dispose of contents/container to licensed waste disposal.

Description of hazard	Causes severe burns. Fumes will be formed during use.
Health effect	Causes severe skin burns and eye damage.
Environmental effects	The product is not classified as dangerous for the environment. If spilled into water, low pH might occur with the risk of fish kills.

### 3 Composition / information on ingredients

Substance / preparation: preparation

Chemical name	CAS No.	%	EC no. *	Classification
Sodium formate See section 16 for the full text of the R-phrases declared above.	141-53-7	28 - 36	205-488-0  Registration number: 01-2119486468-21-0003	Nicht eingestuft.
Formic acid See section 16 for the full text of the R-phrases declared above.	64-18-6	51 - 63	200-579-1  Registration number: 01-2119491174-37-0000	C; R35 Flam. Liq. 3; H226 Skin Corr 1A; H314
Citric acid See section 16 for the full text of the R-phrases declared above	77-92-9	1-6	201-069-1	Xi,C,T

\* EC-No. means EINECS- or ELINCS-number.

### 4 First-aid measures

First-aid measures

General	Immediately move the patient from the source of exposure. Move to fresh air, keep the patient warm and at rest. If unconscious: Loosen tight clothing, place in stable position on one side. Give artificial respiration if breathing has stopped.
Inhalation	See "General" above. Summon physician if signs of unconsciousness or discomfort.
Ingestion	DO NOT INDUCE VOMITTING! Give 1-2 glasses of water to drink if the patient is conscious. If available give cream, cooking oil or other fat liquid to drink. Get medical advice quickly!!

Skin contact	Immediately remove contaminated clothing, watch etc. and flush skin with copious amounts of water. Summon physician upon extensive injuries and continue flushing until physician arrives. If only small amounts have been exposed to skin: Flush with copious amounts of water. Add an ointment for burn to the exposed areas of skin. Summon physician if discomfort persists or blisters are formed.
Eye contact	Immediately flush with large amounts of water (open eyelids). Remove contact lenses if present. Contact physician and continue flushing until physician takes over.
First-aid facilities	No special recommendations.

## **5 Fire-fighting measures**

Fire and explosion hazards	The product is not flammable. During ensiling explosive gases may be formed. The product evolves heat in contact with water. Formic acid will decompose into carbon monoxide (CO) and water when heated, and the decomposing will increase quickly when the temperature rises above 100 °C.
Extinguishing media	Use extinguishing media appropriate for surrounding fire.
Unusual fire/explosion hazards	
decomposition products	Carbon monoxide
Special fire-fighting procedures	Generally: Evacuate all persons. Wear complete protective suit for fire extinguishing. Use self-contained breathing apparatus and full protective gear when the product is involved in fire. The fire should be extinguished from a safe place. Containers exposed to flames can be cooled with water. Move containers if possible without any risk.
Protection of fire-fighters	Wear suitable protective clothing. Self-contained breathing apparatus.

## **6 Accidental release measures**

Personal precautions	Wear necessary protective equipment. See section 7 and 8 for advice upon personal protection.
Hazardous combustion Products	Carbon monoxide
Environmental precautions	Minimize spreading. Avoid emissions to water or drains. Inform appropriate authorities if large amounts are involved.
Clean-up methods	Spillage may be pumped up or absorbed with dry, inert material such as sand, earth etc. Place in suitable containers. Label containers with the name and composition of the product. Dispose of in accordance with local regulations for waste handling (see SDS section 13). Note See section 8 for personal protective equipment and section 13 for waste disposal.

## **7 Handling and storage**

Handling	Avoid contact with eyes and skin. Use appropriate protective equipment, see section 8 in the SDS. Ensure good ventilation. Avoid inhalation of vapors or mist. During ensiling: Remove all sources of ignition. All electrical equipment must be earthed. Use spark proof equipment.
Storage	To be stored in well ventilated buildings or under lean-to roof. Might be stored outside in locked areas. Keep away from nitric acid, nitrates, nitrites and peroxides.
Special risks	May release CO gas during long storage periods. Cracking can occur in gas-tight containers. During the ensiling process explosive gasses might form.
Conditions To Avoid	Keep away from open flame. Formic acid can cause corrosion of metals and paints.
Packaging materials Suitable	Acid resistant containers.
Storage Temperature	Value: > 10 °C
Note	See section 10 for stability and reactivity.

## **8 Exposure controls / personal protection**

### Occupational Exposure limit values

Substance	Formic acid
Identification	CAS no.: 64-18-6, EC no.: 200-579-1 Registration number: 01-2119491174-37-0000
Value	8-hour TWA: 9 mg/m <sup>3</sup>
TWA Year	2003

### Limitation of exposure on Workplace

Controlling the exposure: Absorption of formic acid in a lye solution can be a proper sampling method. Contact Sanbos GmbH for more information. All handling shall take place in well ventilated areas. Mechanical ventilation and local extraction might be needed. Ensure good water supply. Eye wash facilities and shower near working area. All protective equipment should be labelled with CE.  
HYGIENIC ROUTINES: Wash hands before brakes and after working with the product.

### Safety signs



### Respiratory system

Suitable respiratory protection for lower concentrations or short time exposure: Gas filter EN 141 Type E (acidic inorganic gases / vapors (eg. SO<sub>2</sub>, HCl)). Gas filter EN 141 Type B (gases / vapors of inorganic

	compounds). Combination filter for organic, inorganic, acid inorganic and alkaline gases / vapors (e.g. EN 14387 Type ABEK). Suitable respiratory protection for higher concentration or longer exposure: self-contained breathing apparatus.
Skin and body	Wear protective clothing: Long apron and boots of nitrile, neoprene or PVC. Protective clothing should be selected based on the use and possible exposure. For ex. apron, safety shoes, protective suits against chemicals.
Eyes	Wear approved goggles or face shield. Reference to relevant standard EN 166.
Hands	Wear chemical resistant safety gloves (EN 374) for example. nitrile rubber, neoprene or polyvinyl chloride (PVC). The glove material is recommended on the basis of data from formic acid and have a penetration time of more than 8 hours. Penetration time may vary with glove thickness, working operation and exposure.

## **9 Physical and chemical properties**

Physical state	Liquid. Mist formation in humid air.
Color	Colorless to light yellow-green
Odor	Typical.
pH	2.8 (@25°C)
Boiling point	Not available.
Melting point	> 100 °C
Flash point	Not available.
Vapor pressure	33,4 mmHg (@20°C)
Specific gravity	1390 kg/m <sup>3</sup> (@20°C)
Solubility in water	Miscible
Crystallization point	< 10 °C
Remarks	Unstable mixture. The mixture may not crystalize when the temperature decreases below 10 °C.

## **10 Stability and reactivity**

Reactivity	Do not form combustible gases in reaction with water.
Stability	Formic acid may cause corrosion of metals and painting.
Conditions to avoid	High or low temperature.
Materials to avoid	Reacts violently with peroxides, nitric acid and nitrates. Reacts with alkaline and forms heat.
Hazardous decomposition Products	Formic acid will be decomposed to carbon monoxide (CO) and water when heated, and the decomposing will increase quickly when the temperature reaches above 100 °C.

## **11 Toxicological information**

General	Causes severe burns. The vapor is extremely irritating. Prolonged exposure for vapor may lead to discoloration of skin and damage to dental enamel.	
Potential acute health effects		
Inhalation	Inhalation may cause severe irritation to respiratory tract and lungs. Dependent on dose, inhalation may cause chemical burns.	
Ingestion	May cause burns to mucous membranes, throat, esophagus and stomach. May lead to sickness and vomit. Vomit may lead to aspiration of the product to lungs. Lethal dose; formic acid is approximately 30 ml.	
Skin contact	May cause severe burns to skin with deep wounds and cicatrical tissue. Contact with the liquid may give smarting, scratching and may lead to formation of blisters, which also may be formed after the liquid is flushed away.	
Eye contact	Corrosive. May lead to blindness.	
Ecotoxicity	Eco toxicological effects are not expected upon normal use.	
Toxicological data for substances		
Substance	Sodium formate	
Acute aquatic, fish	Value:	> 1000 mg/l
	Method of testing:	LC50
	Species:	Onchorhynchus mykiss
	Duration:	96h
Acute aquatic, algae	Value:	790 mg/l
	Method of testing:	EC50
	Species:	Pseudokirchneriella subcapitata
	Duration:	48 h
Acute aquatic, Daphnia	Value:	> 1000 mg/l
	Method of testing:	EC50
	Species:	Daphnia magna
	Duration:	48 h
Aquatic, comments	Harmless to fish up to three test concentration.	
Biodegradability	Value:	92 %
	Test period:	21 days
	Method of testing:	Directive de l'OCDE n° 301E
Bioaccumulation	The product is readily biodegradable. Does not accumulate in organisms.	
Bioconcentration factor (BCF)	Value:	3,16
	Method of testing:	Calculated Bcfwin (v2.15)
Substance	Formic acid	
	Chemical oxygen demand (COD) Value:	348 mg/g
	Biological oxygen demand (BOD) Value:	86 mg/g
	Test period:	5 d
CSR required	Yes	

Potential chronic health effects	
Delayed effects / repeated exposure	
STOT-single exposure	Based on the available information organ-specific toxicity is not expected.
STOT-repeated exposure	Assessment of toxicity after repeated doses: Even after repeated ingestion the corrosive effect is dominating.
Carcinogenic, Mutagenic or Reprotoxic	
Carcinogenicity	The product has not been tested. The information is derived from products of a similar structure or composition. Long-term experiments on rats and mice given the substance in the feed no carcinogenic effect was found.
Mutagenicity	No mutagenic activity was found in various tests with bacteria and mammalian cell cultures. Experimental / calculated data for formic acid: Ames test negative Cytogenetic test negative.
Teratogenic properties	The product was not tested. The information has been derived from products of a similar structure or composition. On the basis of animal studies a teratogenic effect can be excluded.
Reproductive toxicity	The results of animals studies gave no indication of a fertility impairing effect
Conclusion / summary	No indications for carcinogenicity. No indications for reproduction toxicity. The product has not been tested. The statement has derived from products of similar structure and composition.

## **12 Ecological information**

Bioaccumulative potential	Does not bioaccumulate.
Mobility	Miscible with water.
Remarks	Large amount of product discharge to water will cause more acidic water, which may harm fish and other organisms near the discharge site.

## **13 Disposal considerations**

Specify the appropriate methods of Disposal	Classified as hazardous waste. All waste to be handles carefully. Packaging shall be emptied and dispose of according to legislation.
Product classified as hazardous Waste	Yes
Other Information	The EWC-code above is instructive. The user shall find the appropriate code depending on the use of the product.

## 14 Transport information

### International transport regulations

Regulatory information	UN - Number	Proper shipping name	Class	PG*	Label	Additional information
ADR/RID-class	3412	Formic acid	8	II		
ADNR-class			80			
IMDG-class			8			
IATA-class			8			

PG\* : Packing group

## 15 Regulatory information

EC-regulations      REGULATION (EC) No 1907/2006 REACH article 31 Requirements for Safety  
Data Sheets, og Annex II guide to the compilation of safety data sheets.  
Administrative normer for forurensning i arbejdsatmosfære, Arbejdstilsynet, best.nr. 361. (91/322/EEC, 96/94/EC, 2000/39/EC, 2006/15/EC)  
Classification and labelling of hazardous chemicals, (67/548/EC and 1999/45/EC)  
Hazardous waste (SFT 2003) (91/689/EC, 94/31/EC, 2000/532/EC, 2001/118/EC, 2001/119/EC og 2001/573/EC)



Risk phrases      R34 Causes burns.  
Safety phrases      S1/2 Keep locked up and out of the reach of children. S23 Do not breathe gas/fumes/vapour/spray S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Remarks

## 16 Other information

Classification according to



Regulation (EC) No 1272/2008

[CLP/GHS]

H314

List of relevant R-phrases (under headings 2 and 3).

R34 Causes burns.

R35 Causes severe burns.

List of relevant H-phrases (Section 2 and 3).

H226 Flammable liquid and vapour.

H314 Causes severe skin burns and eye damage.

Information

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Training advice: Handling of this substance or preparation is restricted to skilled personal only.



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