

SAFETY DATA SHEET

Formic acid, 85% HCOOH

Last changed: 20/11/2014

Replaces date: 17/01/2012

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

1.1. Product identifier

Trade name Formic acid, 85% HCOOH
Synonyms FORMIC ACID, FORMYLIC ACID, MAURSYRE, METHANOIC ACID, HYDROGEN CARBOXYLIC ACID, MAURSYRE 85%
FORMULA C-H2-O2
CAS NO. 607-001-00-0;
EC NO. 200-579-1;
INDEX NO. 607-001-00-0;

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

RECOMMENDED USES: Formulation and (re)packaging of substances and mixtures.
Process chemical.

1.3. Details of the supplier of the safety data sheet

NATIONAL MANUFACTURER/IMPORTER

Enterprise Borregaard AS
Address Postboks 162
Postal code 1701 Sarpsborg
Country Norge
Tel +47 69 11 80 00
Fax +47 69 11 87 70

CONTACT PERSON

Name	Email	Tel	Country
Nina Faye Haraldstad	MSDS@borregaard.com		

1.4. Emergency telephone number

Emergency Phone	Type of assistance	Opening Hours
112	Emergency	24 h

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

DPD Classification: C; R34
CLP Classification: Acute Tox. 4; H302, ; H314, Acute Tox. 3; H331, ; EUH71
Most serious harmful effects:: Harmful if swallowed. Causes severe skin burns and eye damage. Toxic if inhaled. Corrosive to the respiratory tract.

2.2. Label elements



Signal word: Danger

EC-Label: Not assessed

COMPOSITION

SAFETY DATA SHEET

Formic acid, 85% HCOOH

Last changed: 20/11/2014

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Formic acid (> 85 %)

H-phrases

H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H331 Toxic if inhaled.
EUH71 Corrosive to the respiratory tract.

P-phrases

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P362/364 Take off contaminated clothing and wash it before reuse.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P310 **Immediately call a POISON CENTER/doctor/!**
P363 Wash contaminated clothing before reuse.
P301/312 **IF SWALLOWED: Call a POISON CENTER/doctor/!if you feel unwell.**
P301/330/331 **IF SWALLOWED:** rinse mouth. Do NOT induce vomiting.
P302/352 **IF ON SKIN: Wash with plenty of water/!**
P303/361/353 **IF ON SKIN (or hair):** Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304/340 **IF INHALED:** Remove person to fresh air and keep comfortable for breathing.
P305/351/338 **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405 Store locked up.
P403/233 Store in a well-ventilated place. Keep container tightly closed.
P501 Deliver contents/Container to an approved waste disposal
P264 Wash hands thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.

2.3. Other hazards

OTHER HAZARDS

Toxic by inhalation.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Ingredient name	Reg. no.	EC No.	CAS No.	Conc. (wt%)	DPD-Classification	CLP-classification
Water			7732-18-5	10 - 15 %	No classification required	
Formic acid		200-579-1	64-18-6	> 85 %	C,R10 - R35	Skin Corr. 1A H314 Eye Dam. 1 H318

Full text of R-, H- and EUH-phrases: see section 16.

The EUH hazard statements mentioned in CLP-classification are only label elements.

SECTION 4: First aid measures

4.1. Description of first aid measures

INHALATION

Seek fresh air, wash out mouth with water and blow nose thoroughly. Seek medical advice in case of persistent discomfort.

INGESTION

Immediately call a POISON CENTER or doctor/physician. Ingestion may cause caustic burning in mouth, oesophagus and stomach. Pains in mouth, throat and stomach. Difficulty swallowing, feeling unwell and vomiting of blood. Rinse with water.

SAFETY DATA SHEET

Formic acid, 85% HCOOH

Last changed: 20/11/2014

Replaces date: 17/01/2012

SKIN

Rinse with water. Flush with water until pain ceases. Remove clothing that is not stuck to the skin - seek medical advice/transport to hospital. If possible, continue flushing until medical attention is obtained. Take off contaminated clothing and wash before reuse.

EYES

Rinse with water. Open eye wide, remove any contact lenses and flush immediately with water (preferably using eye wash equipment). Seek medical advice immediately. Continue flushing until medical attention is obtained.

GENERAL

Avoid contact with skin and eyes.

4.2. Most important symptoms and effects, both acute and delayed

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Caution! Causes burns. Avoid contact with skin and eyes.

4.3. Indication of any immediate medical attention and special treatment needed

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

Flush with water until pain ceases. Remove clothing that is not stuck to the skin - seek medical advice/transport to hospital. If possible, continue flushing until medical attention is obtained.

SECTION 5: Firefighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING MEDIA:

Extinguish with powder, foam, carbon dioxide or water mist.

UNSUITABLE EXTINGUISHING MEDIA

Do not use water stream, as it may spread the fire.

5.2. Special hazards arising from the substance or mixture

SPECIAL HAZARDS

Can generate harmful flue gases containing carbon monoxide in the event of fire.

5.3. Advice for firefighters

ADVICE FOR FIREFIGHTERS

Wear Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

PERSONAL PRECAUTIONS

Avoid contact with skin and eyes. Hazardous fumes are formed in fire conditions. In case of insufficient ventilation, wear respiratory protective equipment.

6.2. Environmental precautions

ENVIRONMENTAL PRECAUTIONS

Prevent spillage from entering drains and/or surface water. Notify proper authorities in case of contamination of soil or aquatic environment or discharge to drains.

6.3. Methods and material for containment and cleaning up

SAFETY DATA SHEET

Formic acid, 85% HCOOH

Last changed: 20/11/2014

Replaces date: 17/01/2012

METHODS AND MATERIAL

Contain and absorb spill with sand or other absorbent material and transfer to suitable waste containers. Provide good ventilation. Caution! Causes burns.

6.4. Reference to other sections

REFERENCES

See section 13 for instructions on disposal.

SECTION 7: Handling and storage

7.1. PRECAUTIONS FOR SAFE HANDLING

All work must be carried out under well-ventilated conditions. Wash hands before breaks, before using restroom facilities, and at the end of work. Do not eat, drink or smoke during work.

7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Store safely, out of reach of children and away from food, animal feeding stuffs, medicines, etc. Store in a dry, cool, well-ventilated area.

7.3. SPECIFIC END USE(S)

See enclosed exposure scenarios.

OTHER INFORMATION

Avoid heating and contact with ignition sources. Heating will cause a rise in pressure in packaging with a risk of bursting.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Ingredient name	CAS No.	Range	ppm	mg/m ³	Year	Remarks
Formic acid	64-18-6	8 h	5	9		
R=Toxic for reproduction, H=Skin absorption, K=Carcinogenic, A=Sensitising, T=Upper limit, M=Mutagenic						

ENV.NORM

Formic acid	Test type	Value	Exposure scenario
	DNEL	9,5 mg/m ³	long term local (arbeidere)
	DNEL	17 mg/m ³ (WRk)	Inhalativ-acute local eff.
	DNEL	3 mg/m ³	long term local (offentligheten)
	PNEC	1 mg/l	Intermittent
	PNEC	2 mg/l	Freshwater
	PNEC	0,2 mg/l	Marine water
	PNEC	7,2 mg/l	STP
	PNEC	1,34 mg/kg dw	Sediment (MW)
	PNEC	13,4 mg/kg dw	Sediment (FW)

OTHER INFORMATION REGARDING LIMIT VALUES AND MONITORING

Avoid contact with skin and eyes. If there is a risk of exposure to vapour and flue gases, a self-contained breathing apparatus must be worn.

8.2. Exposure controls

APPROPRIATE ENGINEERING CONTROLS

In case of insufficient ventilation, wear respiratory protective equipment. Avoid contact with skin and eyes. Inhalation of vapours/spray mist is corrosive to the upper airways.

EYE PROTECTION

Eye protection must conform to EN 166. Wear safety goggles/face protection.

SAFETY DATA SHEET

Formic acid, 85% HCOOH

Last changed: 20/11/2014

Replaces date: 17/01/2012

SKIN PROTECTION

Wear suitable protective clothing. Wear rubber apron and boots as required.

HAND PROTECTION

In the event of direct skin contact, wear protective gloves: Plastic or rubber gloves recommended.

RESPIRATORY PROTECTION

In case of insufficient ventilation, wear respiratory protective equipment. B.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

STATE	Liquid
COLOUR	Colourless
ODOUR	Prickling
SOLUBILITY	Solubility in water: Complete

Parameter	Value/unit	Method/reference	Observation
pH (concentrate)	No data		
pH (solution for use)	No data	10 g/l 20 C	1)
Melting point	-13 °C		
Freezing point	No data		
Initial boiling point and boiling range	107,3 °C		
Flash point	65 °C		
Evaporation rate	No data		
Flammability (solid, gas)	No data		
Flammability limits	No data		
Explosion limits	14,9 - 47,6 %		
Vapour pressure	24,2 hPa		
Vapour density	No data		
Relative density	No data		
Partition coefficient	-1,9	n-oktanol / vann 23C	
Auto-ignition temperature	500 °C		
Decomposition temperature	No data		
Viscosity	1,4 mPas		
Odour threshold	>11 ppm		

9.2. Other information

Parameter	Value/unit	Method/reference	Observation
Density	1195 kg/m ³	v 20C	

Note no.	Comments
1	-1,5

SECTION 10: Stability and reactivity

10.1. REACTIVITY

Alkalis.

10.2. CHEMICAL STABILITY

The product is stable when used in accordance with the supplier's directions. However, the product may develop toxic fumes when heated.

10.4. CONDITIONS TO AVOID

Avoid high temperatures and direct sunlight. Avoid contact with moisture and water.

SAFETY DATA SHEET

Formic acid, 85% HCOOH

Last changed: 20/11/2014

Replaces date: 17/01/2012

10.5. INCOMPATIBLE MATERIALS

Alkalis.

10.6. HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide and carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Formic acid, 85% HCOOH						
Route of exposure	Exposure time	Value/unit	Result	Species	Source	Test method
LC50 (Inhalation)		7,4 mg/l		Rat		
LD50 (Dermal)		940 mg/kg		mouse		
LD50 (Oral)		730 mg/kg		Rat		

ACUTE TOXICITY - ORAL

May cause serious corrosion. May cause chemical burns in mouth, oesophagus and stomach.

ACUTE TOXICITY - DERMAL

Causes burns.

ACUTE TOXICITY - INHALATION

May cause serious irritation of the respiratory tract, coughing, corrosion lesions and breathing difficulties.

SERIOUS EYE DAMAGE/EYE IRRITATION

Causes severe burns. Risk of serious damage to eyes.

SECTION 12: Ecological information

12.1. Toxicity

Formic acid						
Route of exposure	Exposure time	Value/unit	Result	Species	Source	Test method
BCF		22				
BOD	28 d	100 %				OECD 301C
EC50 (Acute Daphnia)	48 h	365 mg/l		Daphnia Magna		OECD 202
EC50 (Acute algae)	72 h	1240 mg/l		Pseudokirchnerella subcapitata		OECD 201
LC50 (Acute fish)	96 h	130 mg/l		Danio rerio		OECD 203

ECOTOXICITY

Major discharge may have a negative effect in a water environment due to local pH reduction.

12.2. Persistence and degradability

PERSISTENCE AND DEGRADABILITY

Readily biodegradable.

12.3. Bioaccumulative potential

BIOACCUMULATIVE POTENTIAL

Bioaccumulation improbable.

12.4. Mobility in soil

SAFETY DATA SHEET

Formic acid, 85% HCOOH

Last changed: 20/11/2014

Replaces date: 17/01/2012

MOBILITY

Water soluble.

12.5. Results of PBT and vPvB assessment

12.6. Other adverse effects

OTHER INFORMATION

Solutions in concentrated form may be harmful to aquatic organisms.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

GENERAL REGULATIONS

Treat as dangerous waste. To be burnt or dumped in accordance with local and national laws and regulations. Packaging must be cleaned thoroughly, do not remove labelling or warning labels.

SECTION 14: Transport information

Classified as Dangerous Goods: Yes

Land transport (ADR/RID)

14.1. UN number	1779	14.4. Packing group	II
14.2. UN proper shipping name		14.5. Environmental hazards	
14.3. Transport hazard class(es)	8		
Hazard label(s)	8+3		
Hazard identification number		Tunnel restriction code	

Inland water ways transport (ADN)

14.1. UN number	1779	14.4. Packing group	
14.2. UN proper shipping name		14.5. Environmental hazards	
14.3. Transport hazard class(es)			
Hazard label(s)			
Environmental hazard in tank vessels			

SAFETY DATA SHEET

Formic acid, 85% HCOOH

Last changed: 20/11/2014

Replaces date: 17/01/2012

Sea transport (IMDG)

14.1. UN number	1779	14.4. Packing group	II
14.2. UN proper shipping name		14.5. Environmental hazards	
14.3. Transport hazard class(es)	8		
Sub Risk:			
IMDG Code segregation group			
Marine pollutant	NO		
EMS:	8-05		

Air transport (ICAO-TI / IATA-DGR)

14.1. UN number	1779	14.4. Packing group	II
14.2. UN proper shipping name			
14.3. Transport hazard class(es)	8		
Hazard label(s)			

SECTION 15: Regulatory information

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

15.2. Chemical safety assessment

SECTION 16: Other information

Indication of changes

ISSUED: 16/05/2003

Indication of changes

Version	Rev. date	Responsible	Changes
6.2.0	21/11/2014	Borregaard AS	NIHA

VENDOR NOTES

Information given in this safety data sheet is in accordance with our information, and to the best of our knowledge, was correct on the last revision date. Information given is intended to present guidelines for safe handling, use, processing, storage, transport, disposal and discharge; it is not intended to be a guarantee or quality specification. It is the responsibility of the recipient of this safety data sheet to ensure that information given here is read and understood by all who use, handle, dispose of or in any way come in contact with the product.

LIST OF RELEVANT R-PHRASES

R10	Flammable.
R34	Causes burns.
R35	Causes severe burns.

SAFETY DATA SHEET

Formic acid, 85% HCOOH

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LIST OF RELEVANT H-STATEMENTS

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H331	Toxic if inhaled.