

		10112000	
Formic acid 90 % pt	re deviation max. ± 0.15 % D (20 ° to EN ISO	C) = 1.20419 - 1.20470 g/ml accord	ling
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SECTION 1: Identification of t	he substance/mixture and of the com	pany/undertaking	
1.1. Product identifier			
Formic acid 90 % pure devi	ation max. ± 0.15 % D (20 °C) = 1.20419 -	1.20470 g/ml according to EN ISO	
UFI:	08F0-3QWU-NC0H-5K16		
1.2. Relevant identified uses of the	ne substance or mixture and uses advise	d against	
	ostances as such or in preparations at indus omain (administration, education, entertain		
Uses advised against			
Do not use for private purpo	oses (household).		
1.3. Details of the supplier of the	safety data sheet		
Company name:	AnalytiChem GmbH		
Street:	Stempelstraße 6		
Place:	D-47167 Duisburg		
Telephone:	0203/5194-0	Telefax: 0203/5194-290	
e-mail:	info@analytichem.de	T 0000/F404 407/447	
Contact person:	Abteilung Produktsicherheit	Telephone:0203/5194-107/117	
e-mail: Internet:	produktsicherheit@analytichem.de www.analytichem.de		
Responsible Department:	Abteilung Produktsicherheit		
1.4. Emergency telephone number:	For Hazardous Materials [or Danger Exposure, or Accident Call CHEMTF	ous Goods] Incidents Spill, Leak, Fire, REC Day or Night Within USA and Canada: anada: +1 703-741-5970 (collect calls	:
Further Information No data available			
SECTION 2: Hazards identification	ation		
2.1. Classification of the substan	<u>ce or mixture</u>		
Regulation (EC) No 1272/2008			
Acute Tox. 3; H331			

Acute Tox. 4; H302 Skin Corr. 1A; H314 Eye Dam. 1; H318

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Hazard components for labelling

formic acid Signal word:

Pictograms:





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Hazard statements

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H331	Toxic if inhaled.
Precautionary sta	atements
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing

protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with
water or shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.

Special labelling of certain mixtures

EUH071 Corrosive to the respiratory tract.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name						
	EC No Index No REACH No						
	Classification (Regulation (EC) No 1272/2008)						
64-18-6	formic acid	formic acid					
	200-579-1	200-579-1 607-001-00-0 01-2119491174-37					
	Flam. Liq. 3, Acute Tox. 3, Acute Tox. 4, Skin Corr. 1A; H226 H331 H302 H314 EUH071						

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity		
	Specific Conc. Limits, M-factors and ATE				
64-18-6	200-579-1	formic acid	90 - < 95 %		
	inhalation: LC50 = 7,85 mg/l (vapours); inhalation: ATE = 0,5 mg/l (dusts or mists); dermal: LD50 = > 2000 mg/kg; oral: LD50 = 730 mg/kg Skin Corr. 1A; H314: >= 90 - 100 Skin Corr. 1B; H314: >= 10 - < 90 Skin Irrit. 2; H315: >= 2 - < 10 Eye Irrit. 2; H319: >= 2 - < 10				

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down. Take off immediately all contaminated clothing and wash it before reuse.

After inhalation

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator. Call a physician immediately.



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After contact with skin

After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion

Never give anything by mouth to an unconscious person or a person with cramps. Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Adverse human health effects and symptoms: Gastric perforation. Call a physician immediately. Do not allow a neutralisation agent to be drunk.

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

Dyspnoea Irritation to respiratory tract Risk of serious damage to eyes. Conjunctival oedema (chemosis). strongly corrosive.

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

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Water spray jet, Carbon dioxide (CO2), Foam, Extinguishing powder.

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Combustible liquids

In case of warming: Vapours can form explosive mixtures with air.

- Vapours are heavier than air, spread along floors and form explosive mixtures with air.
- Hazardous combustion products

In case of fire may be liberated: Carbon monoxide, Carbon dioxide (CO2)

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus. In case of fire and/or explosion do not breathe fumes. Avoid contact with skin, eyes and clothes.

Additional information

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet.

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Danger of bursting container.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Keep away from sources of ignition - No smoking.

This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators,



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and pagers which have not been certified as intrinsically safe).

Take action to prevent static discharges.

For non-emergency personnel

Provide adequate ventilation.

Use personal protection equipment.

Avoid contact with skin, eyes and clothes.

Remove persons to safety.

Emergency procedures

Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.

Danger of explosion

Do not allow uncontrolled discharge of product into the environment. Danger of explosion

6.3. Methods and material for containment and cleaning up

For containment

Cover drains.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Collect in closed and suitable containers for disposal.

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

Provide adequate ventilation. Do not breathe dust/fume/gas/mist/vapours/spray. Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.4. Reference to other sections

Safe handling: see section 7 Personal protection equipment: see section 8 Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe vapour/aerosol. Read label before use.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. In case of warming: Vapours can form explosive mixtures with air.

Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Further information on handling

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or



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drink.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations. Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container dry. Due to gaseous decomposition products, overpressure can occur in tightly sealed containers. Close containers in such a way to enable internal pressure to escape (e.g. excess pressure valve).

Further information on storage conditions

Protect against: Light Keep cool. Protect from sunlight. Corrosive to metals. Unsuitable container/equipment material: Metal

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
64-18-6	Formic acid	5	9		TWA (8 h)	

DNEL/DMEL values

CAS No	Substance					
DNEL type		Exposure route	Effect	Value		
64-18-6	formic acid					
Consumer DNE	Consumer DNEL, long-term inhalation local 3 mg/m ³					
Worker DNEL, long-term inhalation local 9,5 mg/m³						

PNEC values

CAS No	Substance					
Environment	Environmental compartment Value					
64-18-6	formic acid					
Freshwater		2 mg/l				
Freshwater (intermittent releases) 1 mg/l						
Marine water 0,2						
Freshwater s	13,4 mg/kg					
Marine sedir	nent	1,34 mg/kg				
Micro-organi	isms in sewage treatment plants (STP)	7,2 mg/l				
Soil	1,5 mg/kg					

8.2. Exposure controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe



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gas/fumes/vapour/spray.

Individual protection measures, such as personal protective equipment

Eye/face protection

Suitable eye protection: goggles. Face protection shield

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

By long-term hand contact Trade name/designation KCL 720 Camapren® Suitable material: CR (polychloroprene, chloroprene rubber) 0,65 mm Wearing time with permanent contact: >480 min

By short-term hand contact Trade name/designation KCL 897 Butoject® Suitable material: Butyl caoutchouc (butyl rubber) 0,3 mm Wearing time with occasional contact (splashes): >480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin protection

Wear suitable protective clothing. Material, acid-resistant Wear fire resistant or flame retardant clothing.

Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols. Filtering device with filter or ventilator filtering device of type: E-(P3)

Thermal hazards

No data available

Environmental exposure controls

Do not allow to enter into surface water or drains. Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	colourless
Odour:	stinging
Odour threshold:	No data available
Melting point/freezing point:	

4 °C



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Boiling point or initial boiling point and	100,23 °C	
boiling range:		
Flammability		
Solid/liquid:	No data available	
Gas:	No data available	
Lower explosion limits:	No data available	
Upper explosion limits:	No data available	
Flash point:	71 °C	
Auto-ignition temperature:	No data available	
Decomposition temperature:	No data available	
pH-Value:	1-2	
Viscosity / kinematic:	No data available	
Water solubility:	easily soluble	
Solubility in other solvents		
No data available		
Dissolution rate:	No data available	
Partition coefficient n-octanol/water:	No data available	
Dispersion stability:	No data available	
Vapour pressure:	No data available	
Vapour pressure:	No data available	
Density (at 20 °C):	1,20419 - 1,20470 g/cm ³	
Relative density:	No data available	
Bulk density:	No data available	
Relative vapour density:	No data available	
Particle characteristics:	No data available	
9.2. Other information		
Information with regard to physical hazard classes		
Explosive properties		
Vapours may form explosive mixtures with air.		
Sustaining combustion:	No data available	
Self-ignition temperature		
Solid:	No data available	
Gas:	No data available	
Oxidizing properties No data available		
Other safety characteristics		
Evaporation rate:	No data available	
Solvent separation test:	No data available	
Solvent content:	No data available	
Solid content:	No data available	
Sublimation point:	No data available No data available	
Softening point:	No data available No data available	
Pour point: Viscosity / dynamic:	No data available	
Flow time:	No data available	
Further Information		
No data available		
SECTION 10: Stability and reactivity		



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10.1. Reactivity

Flammable.

In case of warming: Vapours can form explosive mixtures with air.

10.2. Chemical stability

slow decomposition Protect against: Light Heat

10.3. Possibility of hazardous reactions

Reaction with: Alkali (lye) Oxidising agent, strong sulphuric acid Catalyst (Metal) Phosphorus oxides Nitric acid NO3 Ignition hazard: Aluminium Explosion hazard with: , Hydrogen peroxide Exothermic reaction with: Alkali (lye), Amines

10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. In case of warming: Vapours can form explosive mixtures with air. Light

10.5. Incompatible materials

Corrosive to metals.

10.6. Hazardous decomposition products

SECTION 5: Firefighting measures

Further information

No data available

SECTION 11: Toxicological information

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

Toxicocinetics, metabolism and distribution

There are no data available on the preparation/mixture itself.

Acute toxicity

Toxic if inhaled. Harmful if swallowed.

Harmful if swallowe

ATEmix calculated

ATE (oral) 811,1 mg/kg; ATE (inhalation vapour) 8,72 mg/l; ATE (inhalation dust/mist) 0,556 mg/l

CAS No	Chemical name								
	Exposure route	Dose		Species	Source	Method			
64-18-6	formic acid								
	oral	LD50 mg/kg	730	Rat	Study report (1985)	OECD Guideline 401			
	dermal	LD50 mg/kg	> 2000	Rat	Study report (2007)	OECD Guideline 402			
	inhalation (4 h) vapour	LC50	7,85 mg/l	Rat	Study report (1980)	OECD Guideline 403			
	inhalation dust/mist	ATE	0,5 mg/l						



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Irritation and corrosivity

Causes severe skin burns and eye damage. Causes serious eye damage.

Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Information on likely routes of exposure

There are no data available on the preparation/mixture itself.

Specific effects in experiment on an animal

There are no data available on the preparation/mixture itself.

Additional information on tests

There are no data available on the preparation/mixture itself.

Practical experience

There are no data available on the preparation/mixture itself.

11.2. Information on other hazards

Endocrine disrupting properties

There are no data available on the preparation/mixture itself.

Other information

gastric perforation

Pulmonary oedema, Conjunctival oedema (chemosis)., Risk of serious damage to eyes.

Further information

Cough

Dyspnoea

SECTION 12: Ecological information

12.1. Toxicity

There are no data available on the mixture itself.

CAS No	Chemical name								
	Aquatic toxicity	Dose		[h] [d]	Species	Source	Method		
64-18-6	formic acid								
	Acute fish toxicity	LC50	130 mg/l	96 h	Danio rerio	Study report (2005)	OECD Guideline 203		
	Acute algae toxicity	ErC50 mg/l	1240		Pseudokirchneriella subcapitata	Study report (2005)	OECD Guideline 201		
	Acute crustacea toxicity	EC50	365 mg/l	48 h	Daphnia magna	Study report (2005)	OECD Guideline 202		
	Crustacea toxicity	NOEC mg/l	>= 100	21 d	Daphnia magna	Study report (2007)	OECD Guideline 211		

12.2. Persistence and degradability

Readily biodegradable (according to OECD criteria). 100 %; 28 d; aerob



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12.3. Bioaccumulative potential

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No indication of bioaccumulation potential.

Does not significantly accumulate in organisms.

Partition coefficient n-octanol/water

CAS No	Chemical name				Log Pow
64-18-6	formic acid				-2,1
BCF					
CAS No	Chamical name	DOF	Species	Course	

CAS No	Chemical name	BCF	Species	Source
64-18-6	formic acid	3,16		Other company data (

12.4. Mobility in soil

There are no data available on the mixture itself.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. Other adverse effects

There are no data available on the mixture itself.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste. Send to a physico-chemical treatment facility under observation of official regulations. Do not empty into drains.

Contaminated packaging

Handle contaminated packages in the same way as the substance itself. The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

Land transport (ADR/RID)	
14.1. UN number or ID number:	UN 1779
14.2. UN proper shipping name:	FORMIC ACID
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8+3
Classification code:	CF1
Limited quantity:	1 L
Excepted quantity:	E2
Transport category:	2
Hazard No:	83
Tunnel restriction code:	D/E
Inland waterways transport (ADN)	
14.1. UN number or ID number:	UN 1779
14.2. UN proper shipping name:	formic acid
14.3. Transport hazard class(es):	8



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14.4. Packing group:	11			
Hazard label:	8+3			
Classification code:	CF1			
Limited quantity:	1 L			
Excepted quantity:	E2			
Marine transport (IMDG)				
14.1. UN number or ID number:	UN 1779			
14.2. UN proper shipping name:	FORMIC ACID			
14.3. Transport hazard class(es):	8			
14.4. Packing group:	II			
Hazard label:	8+3			
Special Provisions:	-			
Limited quantity:	1 L			
Excepted quantity:	E2			
EmS:	F-E, S-C			
Segregation group:	1 - acids			
Air transport (ICAO-TI/IATA-DGR)				
14.1. UN number or ID number:	UN 1779			
14.2. UN proper shipping name:	FORMIC ACID			
14.3. Transport hazard class(es):	8			
14.4. Packing group:	II			
Hazard label:	8+3			
Limited quantity Passenger:	0.5 L			
Passenger LQ:	Y840			
Excepted quantity:	E2			
IATA-packing instructions - Passenger:	851			
IATA-max. quantity - Passenger:	1 L			
IATA-packing instructions - Cargo:	855			
IATA-max. quantity - Cargo:	30 L			
14.5. Environmental hazards				
ENVIRONMENTALLY HAZARDOUS:	No			
SECTION 15: Regulatory information				
15.1. Safety, health and environmental regu	lations/legislation specific for the substance or mixture			
EU regulatory information				
Restrictions on use (REACH, annex XVII):				
Entry 3, Entry 40				
Information according to 2012/18/EU	H2 ACUTE TOXIC			
(SEVESO III):				
. ,				
National regulatory information				

Water hazard class (D):

1 - slightly hazardous to water

SECTION 16: Other information



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Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]

Classification	Classification procedure
Acute Tox. 3; H331	Calculation method
Acute Tox. 4; H302	Calculation method
Skin Corr. 1A; H314	Calculation method
Eye Dam. 1; H318	Calculation method

Relevant H and EUH statements (number and full text)

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
EUH071	Corrosive to the respiratory tract.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)