1 IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier:

Identification on the label/Trade name: Formic Acid, 85%
CAS: 64-18-6 EC: 200-579-1
Index Number: 607-001-00-0
REACH registration No.: 05-2114596xxx-32-0000
Additional identification: N/A

1.2 Relevant identified uses of the substance and uses advised against:

1.2.1 Identified uses:

General chemical reagent

1.2.2 Uses advised against:

Not available.

1.3 Details of the supplier of the safety data sheet:

xxxx Chemicals
xxxx, France
xxx , info@xxxchemicals.com
Tel: 003x-652549xxx

1.4 Emergency telephone Number: #3x-xxxx

Available outside office hours? YES [ ] NO [X]

2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Classification:

The substance is classified as following according to 67/548/EEC and REGULATION (EC) No 1272/2008(CLP).

EU CLP 1272/2008	
Hazard classes/Hazard categories	Hazard statement
Skin Corrosion 1B	H314

For full text of H- phrases: see section 2.2.

67/548/EEC(DSD)	
Hazards characteristics	R-Phrases
Xn	R34

2.1.2 The most important adverse effects

2.1.2.1 The most important adverse physicochemical effects:

Not applicable.

2.1.2.2 The most important adverse human health effects:

Causes severe skin burns and eye damage

2.1.2.3 The most important adverse environmental effects:
Not applicable.

2.2 Label elements

Hazard Pictograms:

GHS05

Signal Word(S): **Danger**

Hazard Statement: H314 Causes severe skin burns and eye damage

Precautionary Statement:
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash hand/clothing thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

2.3 Other hazards

Not available.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Mixture: Mixture
Ingredient(s):

Substance Name	CAS#	% by weight	REACH No.	Classification
Formic Acid	64-18-6	85	05-2114596428-32-0000	H314
Water	7732-18-5	15		N/A

4 FIRST AID MEASURES

4.1 Description of first aid measures:

4.1.1 In case of inhalation:
Remove victim to fresh air and keep at rest in a position comfortable for breathing.

4.1.2 In case of skin contact:
Remove contaminated clothing immediately. Rinse skin with water/shower. Wash contaminated clothing before reuse.

4.1.3 In case of eyes contact:
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.Continue rinsing.

4.1.4 In case of ingestion:

If swallowed: Rinse mouth. Do not induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Skin burns. Symptoms can include redness, swelling, pain and tearing.

4.3 Indication of any immediate medical attention and special treatment needed

Immediately call a POISON CENTER or doctor/physician.

5 FIRE-FIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media: Carbon dioxide, appropriate foam or dry chemical, water pray, water mist.
Unsuitable extinguishing media: Water jet.

5.2 Special hazards arising from the substance or mixture

Emits toxic fumes under fire conditions: Carbon monoxide (CO)

5.3 Advice for fire-fighters:

Firefighters must wear fire resistant protective equipment. Wear self contained breathing apparatus and protective gloves.

6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

6.1.1 For non-emergency personnel:

Remove ignition sources. Provide adequate ventilation. Avoid inhalation of vapour or dust. Avoid skin and eye contact. Wear protective gloves/protective clothing/eye protection/face protection.

6.1.2 For emergency responders:

Wear an appropriate NIOSH/MSHA approved respirator if mist, vapor or dust is generated.

6.2 Environmental precautions:

Avoid disposing into drainage/sewer system or directly into the aquatic environment. Keep away from drains, surface-and ground-water and soil.

6.3 Methods for containment and cleaning up:

For small spills, dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate.

For large spills, keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas

6.4 Reference to other sections:

See Section 7 for information on safe handling.
See section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

6.5 Additional information:

Not available

7 HANDLING AND STORAGE

7.1 Precautions for safe handling:

7.1.1 Protective measures:

Do not breathe dusts/vapor. Handle in well ventilated areas. Eliminate all sources of ignition, and do not generate flames or sparks. Take precautionary measures against static discharges.

7.1.2 Advice on general occupational hygiene：

Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Store locked up.

Further information on storage conditions: Keep container tightly closed and dry in a cool, well-ventilated place.

7.3 Specific end use(s):

Not applicable.

8 EXPOSURE CONTROL/PERSONAL PROTECTION

8.1 Control parameters:

8.1.1 Occupational exposure limits:

WEL - Formic acid:
9 mg/m3 (5 ppm) (IOELV) – United Kingdom
9 mg/m3 from OSHA (PEL) - United States
Consult local authorities for acceptable exposure limits

8.1.2 Additional exposure limits under the conditions of use: Not available.

8.1.3 DNEL/DMEL and PNEC-Values: Not available.

DNEL/DMEL			Exposure route	Exposure frequency	Critical component	Remark
Worker		Consumer				
Industry	Professional					
			Oral	Acute		
				Repeated		
			Dermal	Acute		

				Repeated		
			inhalation	Acute		
				Repeated		

PNEC	Value	Assessment factor	Remarks/Justification
Aqua (fresh water)			
Aqua (marine water)			
Aqua (intermittent releases)			
STP			
Sediment (fresh water)			
Sediment (marine water)			
Soil			
Oral			

8.2 Exposure controls

8.2.1Appropriate engineering controls:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

8.2.2 Individual protection measures, such as personal protective equipment：

Eye/face protection: Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.
Hand protection: Wear appropriate gloves to prevent skin exposure.
Body protection: Wear suitable protective clothing to prevent skin exposure.
Respiratory protection: Avoid breathing dust. In case of insufficient ventilation, wear suitable respiratory equipment.

8.2.3 Environmental exposure controls:

Avoid discharge into the environment. This material and its container must be disposed of as hazardous waste according to local regulations, Federal and official regulations.

9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	Liquid
Colour:	Colorless
Odour:	Pungent
Odour threshold:	Not available
pH:	Strong Acid
Melting point/range (℃):	8 ℃
Boiling point/range (℃) :	100.8 ℃
Flash point (℃) :	42 ℃
Evaporation rate:	Not applicable

Flammability (solid, gas);	Not flammable
Ignition temperature (℃) :	Not determined
Upper/lower flammability/explosive limits:	57/18 vol %
Vapour pressure (20 ℃) :	44.8 mm Hg @ 20 ℃
Vapour density:	Not applicable
Relative Density (25 ℃):	1.2267 g/ml
Water solubility (g/l) at 20 ℃ :	Miscible
n-Octanol/Water (log Po/w) :	Not applicable
Auto-ignition temperature:	480 ℃
Decomposition temperature:	Not available
Viscosity, dynamic (mPa s) :	1,607 mPa@ 25 ℃

9.2 Physical hazards:

Flammable liquids

9.3 Other information:

Fat solubility(solvent– oil to be specified) etc	Not available
Bulk Density:	Not available
Dissociation constant in water(pKa):	Not available
Oxidation-reduction Potential:	Not available

10 STABILITY AND RELIABILITY

10.1 Reactivity:

The substance is stable under normal storage and handling conditions.

10.2 Chemical stability:

Under normal conditions, the product is stable. No hazardous reaction when handled and stored according to provisions. Hazardous reactions are not known.

10.3 Possibility of hazardous reactions:

Under normal conditions, not hazardous reactions will occur.

10.4 Conditions to avoid:

Heat, ignition sources, incompatible materials.

10.5 Incompatible materials:

Highly reactive with oxidizing agents.

10.6 Hazardous decomposition products:

Not available.

11 TOXICOLOGICAL INFORMATION

11.1 Toxicokinetics, metabolism and distribution

Non-human toxikological data: Not available
Method:
Dosage:
Routes of administration:
Results:
Absorption:
Distribution:
Metabolism:
Excretion:

11.2 Information on toxicological effects

Acute toxicity:
LD50(Oral, Mouth): 700 mg/Kg
LD50(Oral, Rat): 1100 mg/Kg
Skin corrosion/Irritation: Causes severe skin burns and eye damage.
Serious eye damage/irritation: Causes severe skin burns and eye damage.
Respiratory or skin sensitization: Causes severe skin burns and eye damage.
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
Reproductive toxicity: Not classified
STOT- single exposure: Not classified
STOT-repeated exposure: Not classified
Aspiration hazard: Not classified

12 ECOLOGICAL INFORMATION

Toxicity: Not available

Persistence and degradability: Not available

Bioaccumulative potential: Not available.

Mobility in soil: Not available.

Results of PBT&vPvB assessment: Not available.

Other adverse effects: Not applicable.

13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Avoid discharge into the environment. This material and its container must be disposed of as hazardous waste according to local regulations, Federal and official regulations.

13.2 Product / Packaging disposal

If empty container retains product residues, all label precautions must be observed. Return for reuse or dispose according to national or local regulations.

14. TRANSPORT INFORMATION

	Land transport (ADR/RID)	*Sea transport (IMDG)*	*Air transport (ICAO/IATA)*
UN-Number:	1779	1779	1779
UN Proper shipping name:	Formic acid	Formic acid	Formic acid
Transport hazard Class:	8	8	8
Packaging group:	III	III	III
Environmental hazards:	n/a	n/a	n/a
Special precautions for user:	See section 2.2	See section 2.2	See section 2.2
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	IBC 08	IBC 08	IBC 08

15 REGULATORY INFORMATION

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

Relevant information regarding authorization: Not applicable.
Relevant information regarding restriction: Not applicable.
Other EU regulations: Employment restrictions concerning young person must be observed.
Other National regulations: Not applicable

Chemical Safety Assessment Carried Out? YES [ ] NO [X]

16 OTHER INFORMATION

16.1 Indication of changes

Version 1.1 amended by EU No 453/2010

16.2 Relevant R- phrases (number and full text):

R34 Causes burns.

16.3 Training instructions:

Not applicable.

16.4 Further information:

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

16.5 Notice to reader:

Employers should use this information only as a supplement to other information gathered by

them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees.

This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Annex to extended safety data sheet (eSDS)

Exposure scenario

	Substance / User identity	
	Registration number(s)	01-xxxxx-xxxx
	Substance identity	CAS ,EC
1	Short title of the exposure scenario	Formulator…
	Processes and activities covered by the exposure scenario	SU, PROC。。。
2	Operational conditions and risk management measures	
	Duration an frequency of use	
	Worker PROC x PROC x PROC x PROC x	 >4h 1-4h
	Consumer PROC x PROC x PROC x PROC x	 >4h 1-4h
	Physical form of substance: under conditions of use it is used as a liquid.	solid
	Concentration of substance in preparation or article	5%
	Other relevant operational conditions of use	
	Risk management measures:	
2.1	Control of worker exposure	See CSR
	Technical conditions and measures at process level (source) to prevent release	
	Technical conditions and measures to control dispersion from source towards the worker	
	Engineering controls:	
	Organisational measures to prevent/limit releases, dispersion and exposure	
	Conditions and measures related to personal protection, hygiene and health evaluation	

2.2	Control of consumer exposure	See CSR
2.3	Control of environmental exposure See CSR	
	Frequency and duration of use	
	Use per site Duration of emission Waste water flow Dilution factor	
	Emission factor to waste water Release fraction	
	Environment factors not influenced by risk management	
	Other given operational conditions affecting environmental exposure	
	Technical conditions and measures at process level (source) to prevent release	
	Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
	Organizational measures to prevent/limit release from site	
	Conditions and measures related to municipal sewage treatment plant	
	Conditions and measures related to external treatment of waste for disposal	
	Conditions and measures related to external recovery of waste	
	Information on estimated exposure and Downstream-user guidance	
3	Exposure estimation and reference to its source:	
	Workers: Dermal Inhalation	 See CSR worker exposure See CSR worker exposure
	Consumers: Oral Dermal Inhalation	 See CSR consumer exposure See CSR consumer exposure See CSR consumer exposure
	Environment Water Soil Sediment Air STP	 See CSR PEC See CSR PEC See CSR PEC See CSR PEC See CSR PEC
	Humans via the environment	See CSR secondary poisoning
4	Guidance to DU to evaluate whether he works inside the boundaries set by the ES	
	Workers	