We create chemistry

Safety data sheet

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

1.1. Product identifier

Amasil® 85

Chemical name: formic acid
CAS Number: 64-18-6

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

Relevant identified uses: feed additive(s)

1.3. Details of the supplier of the safety data sheet

Company:
BASF Central Asia LLP
211ª, Raimbek ave., 050016-Almaty
KAZAKHSTAN

Telephone: +7 727 222 12 83
E-mail address: aliya.baimuratova@basf.com

1.4. Emergency telephone number

LOCAL EMERGENCY NUMBER (KAZAKHSTAN):
8 800 080 52 10
International emergency number:
Telephone: +49 180 2273-112

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 [CLP]

Flam. Liq. 4
Acute Tox. 3 (Inhalation - vapour)
Acute Tox. 4 (oral)
Skin Corr./Irrit. 1B
Eye Dam./Irrit. 1

H227, H331, H302, H314

For the classifications not written out in full in this section the full text can be found in section 16.

2.2. Label elements

Globally Harmonized System (GHS)

Pictogram:

Signal Word:
Danger

Hazard Statement:

H227	Combustible liquid.
H331	Toxic if inhaled.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.

Precautionary Statements (Prevention):

P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P260	Do not breathe mist or vapour.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P270	Do not eat, drink or smoke when using this product.
P264	Wash with plenty of water and soap thoroughly after handling.

Precautionary Statements (Response):

P310	Immediately call a POISON CENTER or doctor/physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P361 + P352	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P370 + P378	In case of fire: Use alcohol-resistant foam, carbon dioxide, dry powder or water spray for extinction.

Precautionary Statements (Storage):

P233	Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

Precautionary Statements (Disposal):

P501	Dispose of contents/container to hazardous or special waste collection point.

Labeling of special preparations (GHS):
EUH071: Corrosive to the respiratory tract.

According to Regulation (EC) No 1272/2008 [CLP]

Hazard determining component(s) for labelling: FORMIC ACID

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Chemical nature

formic acid...% (Content (W/W): > 85 %)
CAS Number: 64-18-6
EC-Number: 200-579-1
INDEX-Number: 607-001-00-0

Contains:
Water (Content (W/W): < 15 %)

CAS Number: 7732-18-5
EC-Number: 231-791-2

Hazardous ingredients (GHS)
according to Regulation (EC) No. 1272/2008

formic acid...%

Content (W/W): > 85 %	Flam. Liq. 3
CAS Number: 64-18-6	Acute Tox. 3 (Inhalation - vapour)
EC-Number: 200-579-1	Acute Tox. 4 (oral)
INDEX-Number: 607-001-00-0	Skin Corr./Irrit. 1A
	Eye Dam./Irrit. 1
	H226, H331, H302, H314
	EUH071
	Specific concentration limit:
	Eye Dam./Irrit. 2: 2 - < 10 %
	Skin Corr./Irrit. 2: 2 - < 10 %
	Skin Corr./Irrit. 1B: 10 - < 90 %
	Skin Corr./Irrit. 1A: >= 90 %

For the classifications not written out in full in this section, including the hazard classes and the hazard statements, the full text is listed in section 16.

3.2. Mixtures

Not applicable

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention. Immediately administer a corticosteroid from a controlled/metered dose inhaler.

On skin contact:
Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

On contact with eyes:
Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:
Do not induce vomiting. Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

4.3. Indication of any immediate medical attention and special treatment needed
Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media
Suitable extinguishing media:
water spray, dry powder, alcohol-resistant foam, carbon dioxide

5.2. Special hazards arising from the substance or mixture
carbon monoxide
The substances/groups of substances mentioned can be released if the product is involved in a fire.

5.3. Advice for fire-fighters
Special protective equipment:
Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:
Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
Breathing protection required. Avoid contact with the skin, eyes and clothing.

6.2. Environmental precautions
Do not empty into drains.

6.3. Methods and material for containment and cleaning up
For large amounts: Pump off product.
For residues: Pick up with suitable absorbent material (e.g. acid binder). Dispose of absorbed material in accordance with regulations.

6.4. Reference to other sections
Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Ensure thorough ventilation of stores and work areas. Sealed containers should be protected against heat as this results in pressure build-up.

Protection against fire and explosion:
Sources of ignition should be kept well clear.

7.2. Conditions for safe storage, including any incompatibilities

Segregate from alkalies and alkalizing substances.

Suitable materials for containers: Stainless steel 1.4571, Stainless steel 1.4404, High density polyethylene (HDPE), Low density polyethylene (LDPE), glass

Storage stability:
Storage temperature: < 30 °C
Storage duration: <= 36 Months
From the data on storage duration in this safety data sheet no agreed statement regarding the warrantee of application properties can be deduced.

7.3. Specific end use(s)

See exposure scenario(s) in the attachment to this safety data sheet.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Components with occupational exposure limits

No occupational exposure limits known.

Components with PNEC

64-18-6: formic acid...%
freshwater: 2 mg/l
marine water: 0,2 mg/l
intermittent release: 1 mg/l
sediment (freshwater): 13,4 mg/kg
sediment (marine water): 1,34 mg/kg
soil: 1,5 mg/kg
STP: 7,2 mg/l

Components with DNEL

64-18-6: formic acid...%
worker: Long-term exposure - systemic and local effects, Inhalation: 9,5 mg/m3

consumer: Short-term exposure - systemic and local effects, Inhalation: 9,5 mg/m3
consumer: Long-term exposure - systemic and local effects, Inhalation: 3 mg/m3
worker: Short-term exposure - systemic and local effects, Inhalation: 19 mg/m3

8.2. Exposure controls

Personal protective equipment

Respiratory protection:
Suitable respiratory protection for lower concentrations or short-term effect: Gas filter for acid inorganic gases/vapours such as SO2, HCl (e.g. EN 14387 Type E). Gas filter for gases/vapours of inorganic compounds (e.g. EN 14387 Type B) Combination filter for gases/vapours of organic, inorganic, acid inorganic and alkaline compounds (e.g. EN 14387 Type ABEK). Suitable respiratory protection for higher concentrations or long-term effect: Self-contained breathing apparatus.

Hand protection:
Chemical resistant protective gloves (EN 374)
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374):
chloroprene rubber (CR) - 0.5 mm coating thickness
butyl rubber (butyl) - 0.7 mm coating thickness
Manufacturer's directions for use should be observed because of great diversity of types.

Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.

Eye protection:
Tightly fitting safety goggles (cage goggles) (e.g. EN 166) and face shield.

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures
Contact with eyes and skin must be avoided. Avoid inhalation of vapour. Avoid contact with skin and eyes. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. Hands and/or face should be washed before breaks and at the end of the shift. When using, do not eat, drink or smoke.

Environmental exposure controls
For information regarding environmental exposure controls, see Section 6.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	liquid	
Colour:	colourless to yellow	
Odour:	pungent odour	
Odour threshold:	not determined	
pH value:	2,2 (10 g/l, 20 °C)	
Melting point:	-13 °C	
Boiling point:	107,3 °C	
Flash point:	65 °C	(DIN 51755)
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.	
Flammability:	Combustible liquid.	
Lower explosion limit:	14,9 %(V)	
Upper explosion limit:	47,6 %(V)	
Ignition temperature:	500 °C	(DIN 51794)
Vapour pressure:	24,2 hPa (20 °C) 112,5 hPa (50 °C)	
Density:	1,195 g/cm3 (20 °C) 1,201 g/cm3 (15 °C) 1,173 g/cm3 (40 °C) 1,161 g/cm3 (50 °C) 1,15 g/cm3 (55 °C)	
Solubility (qualitative) solvent(s):	organic solvents miscible	
Partitioning coefficient n-octanol/water (log Kow):	-1,9 (23 °C; pH value: 5)	
Viscosity, dynamic:	1,70 mPa.s (20 °C) 0,92 mPa.s (55 °C)	
Viscosity, kinematic:	1,42 mm2/s (20 °C) 0,8 mm2/s (55 °C)	

9.2. Other information

Miscibility with water:	miscible in all proportions
Molar mass:	46,03 g/mol

SECTION 10: Stability and Reactivity

10.1. Reactivity
No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals: No corrosive effect on metal.

10.2. Chemical stability
Slow decomposition possible.

10.3. Possibility of hazardous reactions
Reacts with alkalies. Reacts with amines. Exothermic reaction.

10.4. Conditions to avoid
Temperature: > 30 °C

10.5. Incompatible materials

Substances to avoid:
bases, non-coated metals, base metals

10.6. Hazardous decomposition products

Hazardous decomposition products:
carbon monoxide

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
Of moderate toxicity after single ingestion. Of pronounced toxicity after short-term inhalation. The toxicity of the product is based on its corrosivity.

Experimental/calculated data:
LD50 rat (oral): 730 mg/kg (OECD Guideline 401)

LC50 rat (by inhalation): 7,85 mg/l 4 h (BASF-Test)

(dermal):Study scientifically not justified.

Irritation

Assessment of irritating effects:
Highly corrosive! Damages skin and eyes.

Experimental/calculated data:
Skin corrosion/irritation rabbit: Corrosive. (OECD Guideline 404)
Literature data.

Serious eye damage/irritation: As the product corrodes the skin, it can be expected to have a similar effect on the eyes also.

Respiratory/Skin sensitization

Assessment of sensitization:
Skin sensitizing effects were not observed in animal studies.

Experimental/calculated data:
Buehler test guinea pig: Non-sensitizing. (OECD Guideline 406)

Germ cell mutagenicity

Assessment of mutagenicity:
No mutagenic effect was found in various tests with bacteria and mammalian cell culture.

Experimental/calculated data:
Ames-test
negative

Cytogenetic assay
negative
Literature data.

Carcinogenicity

Assessment of carcinogenicity:
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. The results of various animal studies gave no indication of a carcinogenic effect.

Reproductive toxicity

Assessment of reproduction toxicity:
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. The results of animal studies gave no indication of a fertility impairing effect.

Developmental toxicity

Assessment of teratogenicity:

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. No indications of a developmental toxic / teratogenic effect were seen in animal studies.

Specific target organ toxicity (single exposure)

Assessment of STOT single:
Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
After repeated administration the prominent effect is the induction of corrosion.

Aspiration hazard

No aspiration hazard expected.

SECTION 12: Ecological Information

12.1. Toxicity

Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms. Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.
The product gives rise to pH shifts.

Toxicity to fish:
LC50 (96 h) 130 mg/l, Brachydanio rerio (OECD 203; ISO 7346; 92/69/EEC, C.1, static)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

LC50 (96 h) 68 mg/l, Leuciscus idus (DIN 38412 Part 15, static)
The details of the toxic effect relate to the nominal concentration. After neutralization, it is no longer toxic.

Aquatic invertebrates:
EC50 (48 h) 365 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. The statement of the toxic effect relates to the analytically determined concentration.

EC50 (48 h) 32,19 mg/l, Daphnia magna (Directive 79/831/EEC, static)
The details of the toxic effect relate to the nominal concentration. The product will cause changes in the pH value of the test system. The result refers to an unneutralized sample.

Aquatic plants:
EC50 (72 h) 1.240 mg/l (growth rate), Selenastrum capricornutum (OECD Guideline 201, static)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

EC50 (72 h) 32,64 mg/l (growth rate), Scenedesmus subspicatus (DIN 38412 Part 9, static)
The details of the toxic effect relate to the nominal concentration. The product will cause changes in the pH value of the test system. The result refers to an unneutralized sample.

Microorganisms/Effect on activated sludge:
EC10 (13 d) 72 mg/l, (other, aerobic)

EC20 (0,5 h) > 1.000 mg/l, activated sludge, industrial (DIN EN ISO 8192, aerobic)
The details of the toxic effect relate to the nominal concentration. The product will cause changes in the pH value of the test system. The result refers to an unneutralized sample.

EC50 (17 h) 46,7 mg/l, Pseudomonas putida (DIN 38412 Part 8, aerobic)
The details of the toxic effect relate to the nominal concentration. The product will cause changes in the pH value of the test system. The result refers to an unneutralized sample.

Chronic toxicity to aquatic invertebrates:
No observed effect concentration (21 d) >= 102 mg/l, Daphnia magna (OECD Guideline 211, semistatic)
The statement of the toxic effect relates to the analytically determined concentration. The product will cause changes in the pH value of the test system. The result refers to a neutralized sample. No effects at the highest test concentration.

12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O):
Readily biodegradable (according to OECD criteria).

Elimination information:
100 % DOC reduction (9 d) (OECD 301E/92/69/EEC, C.4-B) (aerobic, municipal sewage treatment plant effluent)

12.3. Bioaccumulative potential

Bioaccumulation potential:
No significant accumulation in organisms is expected as a result of the distribution coefficient of n-octanol/water (log Pow).

12.4. Mobility in soil

Assessment transport between environmental compartments:
Volatility: The substance will not evaporate into the atmosphere from the water surface.
Adsorption in soil: Adsorption to solid soil phase is not expected.

12.5. Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): Not fulfilling PBT (persistent/bioaccumulative/toxic) criteria. Self classification

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): Not fulfilling vPvB (very persistent/very bioaccummulative) criteria. Self classification

12.6. Other adverse effects

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Incinerate in suitable incineration plant, observing local authority regulations.

A waste code in accordance with the European waste catalog (EWC) cannot be specified, due to dependence on the usage.
The waste code in accordance with the European waste catalog (EWC) must be specified in cooperation with disposal agency/manufacturer/authorities.

Contaminated packaging:
Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

SECTION 14: Transport Information

Land transport

ADR

UN number	UN1779
UN proper shipping name:	FORMIC ACID
Transport hazard class(es):	8, 3
Packing group:	II
Environmental hazards:	no
Special precautions for user:	Tunnel code: D/E

RID

UN number	UN1779
UN proper shipping name:	FORMIC ACID
Transport hazard class(es):	8, 3

Packing group:	II
Environmental hazards:	no
Special precautions for user:	None known

Inland waterway transport

ADN

UN number	UN1779
UN proper shipping name:	FORMIC ACID
Transport hazard class(es):	8, 3
Packing group:	II
Environmental hazards:	no
Special precautions for user:	None known

Transport in inland waterway vessel

UN number	UN1779
UN proper shipping name:	FORMIC ACID
Transport hazard class(es):	8, 3, N3
Packing group:	II
Environmental hazards:	yes
Type of inland waterway vessel:	N
Cargo tank design:	2
Cargo tank type:	3

Sea transport

IMDG

UN number:	UN 1779
UN proper shipping name:	FORMIC ACID
Transport hazard class(es):	8, 3
Packing group:	II
Environmental hazards:	no Marine pollutant: NO
Special precautions for user:	None known

Air transport

IATA/ICAO

UN number:	UN 1779
UN proper shipping name:	FORMIC ACID

Transport hazard class(es):	8, 3
Packing group:	II
Environmental hazards:	No Mark as dangerous for the environment is needed
Special precautions for user:	None known

14.1. UN number
See corresponding entries for “UN number” for the respective regulations in the tables above.

14.2. UN proper shipping name
See corresponding entries for “UN proper shipping name” for the respective regulations in the tables above.

14.3. Transport hazard class(es)
See corresponding entries for “Transport hazard class(es)” for the respective regulations in the tables above.

14.4. Packing group
See corresponding entries for “Packing group” for the respective regulations in the tables above.

14.5. Environmental hazards
See corresponding entries for “Environmental hazards” for the respective regulations in the tables above.

14.6. Special precautions for user
See corresponding entries for “Special precautions for user” for the respective regulations in the tables above.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Regulation:	IBC
Shipment approved:	1
Pollution name:	Formic acid (over 85%)
Pollution category:	Y
Ship Type:	3

SECTION 15: Regulatory Information

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

SECTION 16: Other Information

Assessment of the hazard classes according to UN GHS criteria (most recent version)

Skin Corr./Irrit. 1B

Flam. Liq. 4
Eye Dam./Irrit. 1
Acute Tox. 4 (oral)
Acute Tox. 3 (Inhalation - vapour)

flue gas desulphurization rubber industry textile industry leather industry plastics processing industry

Full text of the classifications, including the hazard classes and the hazard statements, if mentioned in section 2 or 3:

Flam. Liq.	Flammable liquids
Acute Tox.	Acute toxicity
Skin Corr./Irrit.	Skin corrosion/irritation
Eye Dam./Irrit.	Serious eye damage/eye irritation
H227	Combustible liquid.
H331	Toxic if inhaled.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H226	Flammable liquid and vapour.
EUH071	Corrosive to the respiratory tract.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.