

# Safety data sheet

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BASF Safety data sheet  
Date / Revised: 27.01.2025  
Product: **Amasil® 99**

Version: 13.0

(30041107/SDS\_GEN\_SG/EN)

Date of print: 16.10.2025

## 1. Substance/preparation and manufacturer/supplier identification

**Product name:**  
**Amasil® 99**

Use: feed additive(s)

Manufacturer/supplier:  
BASF South East Asia Pte Ltd.  
128 Beach Road #18-01  
Guoco Midtown, 189773, Singapore  
Telephone: +65 8322 4420  
Telefax number: +65 6 334-0330  
E-mail address: benny.zou@basf.com

Emergency information:  
Singapore Emergency Toll-Free Number:  
Telephone: 1800-723-1361  
International emergency number:  
Telephone: +49 180 2273-112

## 2. Hazard identification

Classification of the substance and mixture:  
Flammable liquids: Cat.3  
Acute toxicity: Cat.3 (Inhalation - vapour)  
Acute toxicity: Cat.4 (oral)  
Skin corrosion: Cat.1A  
Serious eye damage: Cat.1

Label elements and precautionary statement:

Pictogram:

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Signal Word:  
 Danger

## Hazard Statement:

H226 Flammable liquid and vapour.  
 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 and eye protection or face protection.  
 P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 P260 Do not breathe mist or vapour.  
 P243 Take action to prevent static discharges.  
 P241 Use explosion-proof electrical, ventilating and lighting equipment.  
 P264 Wash contaminated body parts thoroughly after handling.  
 P270 Do not eat, drink or smoke when using this product.  
 P242 Use non-sparking tools.  
 P240 Ground and bond container and receiving equipment.

## Precautionary Statements (Response):

P310 Immediately call a POISON CENTER or 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):

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

## Precautionary Statements (Disposal):

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

## Other hazards which do not result in classification:

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.

Corrosive to the respiratory tract.

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### 3. Composition/information on ingredients

#### Chemical nature

Substance nature: Substance

carboxylic acid

#### Hazardous ingredients

formic acid

Content (W/W):  $\geq 99\%$  -  $\leq 100\%$

%

CAS Number: 64-18-6

Flam. Liq.: Cat. 3

Acute Tox.: Cat. 3 (Inhalation - vapour)

Acute Tox.: Cat. 4 (oral)

Skin Corr./Irrit.: Cat. 1A

Eye Dam./Irrit.: Cat. 1

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### 4. First-Aid Measures

General advice:

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.

Note to physician:

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

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### 5. Fire-Fighting Measures

Suitable extinguishing media:

water spray, dry powder, alcohol-resistant foam, carbon dioxide

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Specific hazards:

carbon monoxide

The substances/groups of substances mentioned can be released in case of fire.

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.

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## 6. Accidental Release Measures

Personal precautions:

Breathing protection required. Avoid contact with the skin, eyes and clothing.

Environmental precautions:

Do not empty into drains.

Methods for cleaning up or taking up:

For large amounts: Pump off product.

For residues: Pick up with suitable absorbent material (e.g. acid binder).

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## 7. Handling and Storage

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.

Storage

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, HDPE fluorinated

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.

Protect from temperatures above: 45 °C

## 8. Exposure controls and personal protection

### Components with occupational exposure limits

formic acid, 64-18-6;

TWA value 5 ppm (ACGIHTLV)

TWA value 9.4 mg/m<sup>3</sup> ; 5 ppm (OEL (SG))

STEL value 19 mg/m<sup>3</sup> ; 10 ppm (OEL (SG))

### Personal protective equipment

Respiratory protection:

Suitable respiratory protection for lower concentrations or short-term effect: Gas filter for acid inorganic gases/vapours such as SO<sub>2</sub>, 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 ISO 374-1)

Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1):

chloroprene rubber (CR) - 0.5 mm coating thickness

butyl rubber (butyl) - 0.7 mm coating thickness

fluoroelastomer (FKM) - 0.7 mm coating thickness

Polyethylene-Laminate (PE laminate) - ca. 0.1 mm coating thickness

Suitable materials for short-term contact (recommended: At least protective index 2, corresponding > 30 minutes of permeation time according to EN ISO 374-1)

polyvinylchloride (PVC) - 0.7 mm coating thickness

natural rubber/natural latex (NR) - 0.5 mm coating thickness

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.

Manufacturer's directions for use should be observed because of great diversity of types.

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:

Avoid inhalation of vapour. Avoid contact with the skin, eyes and clothing. 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.

## 9. Physical and Chemical Properties

Form:	liquid	
Colour:	colourless to yellow	
Odour:	of formic acid, pungent odour	
Odour threshold:	not determined	
pH value:	2.2 (10 g/l, 20 °C)	
pKA:	3.70 (20 °C)	(OECD Guideline 112)
Melting point:	8 °C (1,013.25 hPa)	(OECD Guideline 102)
Boiling point:	100.23 °C	(OECD Guideline 103)
Flash point:	49.5 °C	(ISO 13736)
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.	
Flammability (solid/gas):	Flammable liquid and vapour.	(derived from flash point)
Lower explosion limit:	12 %(V) (43 °C)	
Upper explosion limit:	38 %(V) (43 °C)	
Ignition temperature:	528 °C	(DIN EN 14522)
Thermal decomposition:	350 °C , 0.15 kJ/g Thermal decomposition above the indicated temperature is possible. It is not a self-decompositionable substance.	(DSC (DIN 51007))
Self ignition:	Based on its structural properties the product is not classified as self- igniting.	Test type: Spontaneous self- ignition at room-temperature.
Self heating ability:	not applicable, the product is a liquid	
SADT:	Study scientifically not justified.	
Vapour pressure:	42.71 mbar (20 °C)	(OECD Guideline 104)
	54.96 mbar (25 °C)	(OECD Guideline 104)
	170.7 mbar (50 °C)	(OECD Guideline 104)
Density:	1.2196 g/cm3 (20 °C)	(ISO 2811-3)
	1.1691 g/cm3 (55 °C)	(ISO 2811-3)

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	1.2200 g/cm <sup>3</sup> (15 °C)	
	1.1800 g/cm <sup>3</sup> (50 °C)	
Relative density:	1.2195 (20 °C)	(OECD Guideline 109)
Relative vapour density (air):	> 1 (20 °C)	(estimated)
	Heavier than air.	
Solubility in water:	miscible (20 °C, 1,013.25 hPa)	
Miscibility with water:	miscible in all proportions	
Solubility (qualitative) solvent(s):	N,N-dimethylformamide, 1,4-dioxane, dichloromethane miscible in all proportions	
Partitioning coefficient n-octanol/water (log Pow):	-2.1 (23 °C; pH value: 7.0)	(Directive 92/69/EEC, A.8)
	-1.9 (23 °C; pH value: 5.0)	(Directive 92/69/EEC, A.8)
	-2.3 (23 °C; pH value: 9.0)	(Directive 92/69/EEC, A.8)
Adsorption/water - soil:	KOC: < 17.8; log KOC: 1.25	(OECD Guideline 121)
Surface tension:	71.5 mN/m (20 °C; 1 g/l)	(OECD Guideline 115)
Viscosity, dynamic:	1.72 mPa.s (20 °C)	(calculated (from kinematic viscosity))
	1.17 mPa.s (40 °C)	(calculated (from kinematic viscosity))
	0.92 mPa.s (55 °C)	(calculated (from kinematic viscosity))
Viscosity, kinematic:	1.41 mm <sup>2</sup> /s (20 °C)	(DIN 51562)
	0.98 mm <sup>2</sup> /s (40 °C)	(DIN 51562)
	0.78 mm <sup>2</sup> /s (55 °C)	(DIN 51562)
Molar mass:	46.03 g/mol	

#### Particle characteristics

Particle size distribution: The substance / product is marketed or used in a non solid or granular form. -

Specific Surface Area: No data available.

Particle Shape: No data available.

Dustiness: No data available.

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## 10. Stability and Reactivity

Conditions to avoid:

Temperature: > 30 °C

Thermal decomposition:

350 °C, 0.15 kJ/g (DSC (DIN 51007))

Thermal decomposition above the indicated temperature is possible. It is not a self-decomposable substance.

Substances to avoid:

bases, non-coated metals, base metals

Corrosion to metals: No corrosive effect on metal.

Corrosion to metals: No corrosive effect on metal.

Hazardous reactions:

Exothermic reaction. Reacts with alkalies. Reacts with amines. The formation of gaseous decomposition products builds up pressure in tightly closed containers.

Hazardous decomposition products:

carbon monoxide

Chemical stability:

Slow decomposition possible.

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## 11. Toxicological Information

### Routes of exposure

#### Acute oral toxicity

Experimental/calculated data:

LD50rat (oral): 730 mg/kg (OECD Guideline 401)

#### Acute inhalation toxicity

LC50 rat (by inhalation): 7.85 mg/l 4 h (BASF-Test)

The vapour was tested.

#### Acute dermal toxicity

(dermal): No data available. Study scientifically not justified.

#### Assessment of acute toxicity

Of moderate toxicity after single ingestion. Of pronounced toxicity after short-term inhalation.

#### Symptoms

Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.

#### 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: Study scientifically not justified. 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. The substance was not mutagenic in an insect test. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

### **Carcinogenicity**

Assessment of carcinogenicity:  
In long-term studies in rats and mice in which the substance was given by feed, a carcinogenic effect was not observed. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

### **Reproductive toxicity**

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

### **Developmental toxicity**

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

### **Specific target organ toxicity (single exposure)**

Corrosive to the respiratory tract.

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

Assessment of repeated dose toxicity:

No substance-specific organotoxicity was observed after repeated administration to animals. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

**Aspiration hazard**

No aspiration hazard expected.

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## 12. Ecological Information

### Ecotoxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate 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/EWG, C.1, static)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

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.

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 (3 h) > 500 mg/l, activated sludge, domestic, non-adapted (OECD Guideline 209, aerobic)

No effects at the highest test concentration. Nominal concentration.

Chronic toxicity to fish:

Study scientifically not justified.

Chronic toxicity to aquatic invertebrates:

No observed effect concentration (21 d),  $\geq 100$  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.

Assessment of terrestrial toxicity:  
Study scientifically not justified.

Soil living organisms:  
Literature data.

Terrestrial plants:  
Literature data.

Other terrestrial non-mammals:  
LD50 (18 h)  $\geq$  111 mg/kg, *Agelaius phoeniceus*  
Literature data.

### **Mobility**

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

### **Persistence and degradability**

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

Assessment of stability in water:  
According to structural properties, hydrolysis is not expected/probable.

Information on Stability in Water (Hydrolysis):  
 $t_{1/2} > 5$  d (50 °C, pH value 4), (Directive 92/69/EEC, C.7, pH 4)

$t_{1/2} > 5$  d (50 °C, pH value 7), (Directive 92/69/EEC, C.7, pH 7)

$t_{1/2} > 5$  d (50 °C, pH value 9), (Directive 92/69/EEC, C.7, pH 9)

### **Sum parameter**

Chemical oxygen demand (COD): 348 mg/g

Biochemical oxygen demand (BOD) Incubation period 5 d: 86 mg/g

### **Bioaccumulation potential**

Assessment bioaccumulation potential:  
Significant accumulation in organisms is not to be expected.

Bioaccumulation potential:  
Significant accumulation in organisms is not to be expected.

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## **13. Disposal Considerations**

A waste code in accordance with the European waste catalog (EWC) cannot be specified, due to dependence on the usage.

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The waste code in accordance with the European waste catalog (EWC) must be specified in cooperation with disposal agency/manufacturer/authorities.  
Incinerate in suitable incineration plant, observing local authority regulations.

Contaminated packaging:

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

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## 14. Transport Information

### Domestic transport:

UN number or ID number: UN 1779  
UN proper shipping name: FORMIC ACID  
Transport hazard class(es): 8, 3  
Packing group: II  
Environmental hazards: no

Special precautions for user: None known

### Sea transport

#### IMDG

UN number or ID 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: EmS: F-E; S-C

### Air transport

#### IATA/ICAO

UN number or ID 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

### Maritime transport in bulk according to IMO instruments

Regulation: IBC-Code

Product name: Formic acid (over 85%)  
Pollution category: Y  
Ship Type: 3

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## 15. Regulatory Information

### Other regulations

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## 16. Other Information

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Vertical lines in the left hand margin indicate an amendment from the previous version.

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.