

# SAFETY DATA SHEET

according to Regulation (FPC) No. 0102/2009



Revision Date Jan. 08, 2018

Version 1.1

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

Catalogue No.	800181
Product name	Acrylic acid (stabilised with hydroquinone monomethyl ether) for synthesis
REACH Registration Number	A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (FPC) No 0102/2009, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Identified uses	Chemical for synthesis For additional information on uses please refer to the Merck Chemicals portal ( <a href="http://www.merck-chemicals.com">www.merck-chemicals.com</a> ).
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### 1.3 Details of the supplier of the safety data sheet

Company	Formosa Plastics Corporation R.O.C.
Responsible Department	Linyuan AE Plant +886-07-6419911 Ext 510

1.4 Emergency telephone number	Please contact the regional company representation in your country.
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## 2. Hazards identification

### 2.1 Classification of the substance or mixture

Flammable liquid, Category 3, H226  
Acute toxicity, Category 4, Inhalation, H332  
Acute toxicity, Category 4, Dermal, H312  
Acute toxicity, Category 4, Oral, H302  
Skin corrosion, Category 1A, H314  
Acute aquatic toxicity, Category 1, H400

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification (67/548/EEC or 1999/45/EC)

R10  
Xn; R20/21/22  
C; R35  
N; R50

For the full text of the R-phrases mentioned in this Section, see Section 16.

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2.2 Label elements

Labelling (REGULATION (FPC) No 0102/2009)

Hazard pictograms



Signal word

Danger

Hazard statements

H226 Flammable liquid and vapour.  
H332 Harmful if inhaled.  
H312 Harmful in contact with skin.  
H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H400 Very toxic to aquatic life.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P273 Avoid release to the environment.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

Reduced labelling ( $\leq 125$  ml)

Hazard pictograms



Signal word

Danger

Hazard statements

H314 Causes severe skin burns and eye damage.

Precautionary statements

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

Index-No. 607-061-00-8

Labelling

Symbol(s) C Corrosive  
N Dangerous for the environment

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R-phrase(s) 10-20/21/22-35-50 Flammable. Harmful by inhalation, in contact with skin and if swallowed. Causes severe burns. Very toxic to aquatic organisms.

S-phrase(s) 26-36/37/39-45-61 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions/ Safety data sheets.

EC-No. 201-177-9 EC Label

Reduced labelling ( $\leq 125$  ml)

Symbol(s) C

N

R-phrase(s) 10-20/21/22-35

S-phrase(s) 26-36/37/39-45

Corrosive

Dangerous for the environment

Flammable. Harmful by inhalation, in contact with skin and if swallowed. Causes severe burns.

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

## 2.3 Other hazards

None known.

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## 3. Composition/information on ingredients

Formula	$\text{CH}_2=\text{CHCOOH}$	$\text{C}_3\text{H}_4\text{O}_2$ (Hill)
CAS-No.	79-10-7	
Index-No.	607-061-00-8	
EC-No.	201-177-9	
Molar mass	72,06 g/mol	

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## 4. First aid measures

### 4.1 Description of first aid measures

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

After skin contact: wash off with plenty of water. Swab with polyethylene glycol 400. Immediately remove contaminated clothing. Call a physician immediately.

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

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

Irritation and corrosion, irritant effects, Cough, Shortness of breath  
Risk of blindness!

### 4.3 Indication of immediate medical attention and special treatment needed

No information available.

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## 5. Fire-fighting measures

### 5.1 Extinguishing media

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Suitable extinguishing media

Water, Carbon dioxide (CO<sub>2</sub>), Foam, Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

## 5.2 Special hazards arising from the substance or mixture

Combustible material, Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire.

## 5.3 Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Cool closed containers exposed to fire with water spray. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

### 6.2 Environmental precautions

Do not empty into drains. Risk of explosion.

### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7.2 and 10.5).

Take up with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

### 6.4 Reference to other sections

Indications about waste treatment see section 13.

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## 7. Handling and storage

### 7.1 Precautions for safe handling

Work under hood. Do not inhale substance. Avoid generation of vapours/aerosols.

Observe label precautions.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep away from heat and sources of ignition. Keep container tightly closed in a dry and well-ventilated place.

Store at +15°C to +25°C.

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## 7.3 Specific end uses

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

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## 8. Exposure controls/personal protection

### 8.1 Control parameters

### 8.2 Exposure controls

#### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

#### Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

#### Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. Work under hood. Do not inhale substance.

#### Eye/face protection

Tightly fitting safety goggles

#### Hand protection

full contact:

Glove material:	butyl-rubber
Glove thickness:	0,7 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0,40 mm
Break through time:	> 120 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 898 Butoject® (full contact), KCL 730 Camatril® -Velours (splash contact).

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](http://www.kcl.de)).

#### Other protective equipment:

protective clothing

#### Respiratory protection

required when vapours/aerosols are generated.

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

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Environmental exposure controls  
Do not empty into drains.  
Risk of explosion.

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## 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Form	liquid
Colour	colourless
Odour	stinging
Odour Threshold	No information available.
pH	2,1 at 72,06 g/l 20 °C
Melting point	13 °C
Boiling point/boiling range	141 °C at 1.013 hPa
Flash point	50 °C Method: c.c.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	3,9 %(V)
Upper explosion limit	19,8 %(V)
Vapour pressure	3,8 hPa at 20 °C
Relative vapour density	2,45
Relative density	1,05 g/cm <sup>3</sup> at 20 °C
Water solubility	1.000 g/l at 25 °C
Partition coefficient: n-octanol/water	log Pow: 0,38 (25 °C) Method: OECD Test Guideline 107 Bioaccumulation is not expected (log Pow <1).
Autoignition temperature	No information available.
Decomposition temperature	No information available.

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Viscosity, dynamic 1,22 mPa.s  
at 20 °C

Explosive properties No information available.

Oxidizing properties No information available.

9.2 Other data

Ignition temperature 390 °C  
DIN 51794

Self-accelerating polymerization temperature(SAPT)  
Onset temperature 166.38 °C  
Peak temperature 215.84 °C

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10. Stability and reactivity

10.1 Reactivity

Polymerisation can occur.

10.2 Chemical stability

heat-sensitive

In case of decomposition in closed containers and tubes risk of bursting due to buildup of overpressure.

Stabilizer

Hydroquinone monomethyl ether

10.3 Possibility of hazardous reactions

Risk of explosion with:

Oxidizing agents, polymerisation initiators, Peroxides, Oxygen

Violent polymerisation may be caused by:

alkali hydroxides, Amines, Ammonia, sulphuric acid, mercaptans, azides, Ether, Ketones,  
Aldehydes, nitrates, nitrites

increased reactivity with:

anhydrides

10.4 Conditions to avoid

Forms explosive mixtures with air on heating.

Heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

10.5 Incompatible materials

Copper, Nickel, Mild steel, Zinc

10.6 Hazardous decomposition products

no information available

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11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

LD50 rat

Dose: > 192 mg/kg

(Lit.) (Regulation (FPC) No 0102/2009, Annex VI)

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

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absorption

Acute inhalation toxicity

LC50 rat

Dose: 3,6 mg/l, 4 h

(Lit.)

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages: damage of respiratory tract

absorption

Acute dermal toxicity

LD50 rabbit

Dose: > 290 mg/kg

(Lit.) (Regulation (FPC) No 0102/2009, Annex VI)

absorption

Skin irritation

rabbit

Result: Causes burns.

(IUCLID)

Causes severe burns.

Eye irritation

rabbit

Result: Causes burns.

(IUCLID)

Risk of serious damage to eyes.

Risk of blindness!

Sensitisation

Sensitisation test: guinea pig

Result: negative

(Lit.)

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

(National Toxicology Program)

Mutagenicity (mammal cell test):

Result: negative

(Lit.)

Carcinogenicity

Did not show carcinogenic effects in animal experiments. (IUCLID)

Reproductive toxicity

No impairment of reproductive performance in animal experiments. (IUCLID)

Teratogenicity

Did not show teratogenic effects in animal experiments. (IUCLID)

Specific target organ toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.



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Aspiration hazard

No aspiration toxicity classification

## 11.2 Further information

Further information

Handle in accordance with good industrial hygiene and safety practice.

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## 12. Ecological information

### 12.1 Toxicity

Toxicity to fish

LC50

Species: *Oncorhynchus mykiss* (rainbow trout)

Dose: 27 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates.

EC5

Species: *E. sulcatum*

Dose: 20 mg/l

Exposure time: 72 h

(maximum permissible toxic concentration) (Lit.)

EC50

Species: *Daphnia magna* (Water flea)

Dose: 47 mg/l

Exposure time: 48 h

(IUCLID)

Toxicity to algae

NOEC

Species: *Chlorella vulgaris* (Fresh water algae)

Dose: 0,2 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

IC50

Species: *Desmodesmus subspicatus* (green algae)

Dose: 0,13 mg/l

Exposure time: 72 h

(IUCLID)

Toxicity to bacteria

EC5

Species: *Pseudomonas putida*

Dose: 41 mg/l

Exposure time: 16 h

(maximum permissible toxic concentration) (IUCLID)

EC20

Species: activated sludge

Dose: 900 mg/l

Exposure time: 30 min

Method: ISO 8192

(IUCLID)

### 12.2 Persistence and degradability

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## Biodegradability

Result: Readily eliminated from water  
100 %

Exposure time: 5 d

Method: OECD Test Guideline 302B

Result: Readily biodegradable.  
81 %

Exposure time: 28 d

Method: OECD Test Guideline 301D

## 12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 0,38 (25 °C)

Method: OECD Test Guideline 107

Bioaccumulation is not expected (log Pow <1).

## 12.4 Mobility in soil

No information available.

## 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

## 12.6 Other adverse effects

Additional ecological information

Biological effects:

Neutralise before sewage disposal.

Further information on ecology

Do not allow to run into surface waters, wastewater, or soil.

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## 13. Disposal considerations

Waste treatment methods

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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## 14. Transport information

ADR/RID

UN 2218 ACRYLIC ACID, STABILIZED, 8 (3), II

IATA

UN 2218 ACRYLIC ACID, STABILIZED, 8 (3), II

IMDG

UN 2218 ACRYLIC ACID, STABILIZED, 8 (3), II

EmS F-E S-C

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.

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## 15. Regulatory information

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

EU regulations

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Major Accident Hazard Legislation 96/82/EC  
Flammable.  
6  
Quantity 1: 5.000 t  
Quantity 2: 50.000 t  
96/82/EC  
Dangerous for the environment  
9a  
Quantity 1: 100 t  
Quantity 2: 200 t

Occupational restrictions Take note of Dir 94/33/EC on the protection of young people at work. Take note of Dir 92/85/EEC on the safety and health at work of pregnant workers.

National legislation  
Storage class VCI 3 Flammable Liquids

#### 15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

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#### 16. Other information

Full text of H-Statements referred to under sections 2 and 3.

H226 Flammable liquid and vapour.  
H302 Harmful if swallowed.  
H312 Harmful in contact with skin.  
H314 Causes severe skin burns and eye damage.  
H332 Harmful if inhaled.  
H400 Very toxic to aquatic life.

Full text of R-phrases referred to under sections 2 and 3

R10 Flammable.  
R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.  
R35 Causes severe burns.  
R50 Very toxic to aquatic organisms.

#### Training advice

Provide adequate information, instruction and training for operators.

Regional representation: This information is given on the authorised Safety Data Sheet for your country.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.