

Product Name Propionic anhydride
MSDS number 80511
Revision Number 7

Revision Date Jul.27.2016
Issuing date Feb.13.2019

AGHS/EN

1. Identification of the substance/preparation and the company/undertaking

Product Name
Propionic anhydride

Manufacturer or supplier's details

Celanese Sales Germany GmbH

Am Unisys-Park 1
65843 Sulzbach (Taunus)
Germany

Celanese Pte Ltd

60 Anson Road
Maple Tree Anson #13-02
Singapore 079914

Product Information

Email: Info.Chemicals.CN@celanese.com

Emergency telephone number

+(65) 62656917 (Operations Room direct dial)
or fax request to +(65) 62664696 (Facsimile to Operations Room)
or email to posh.er@paccoffshore.com.sg

In China Emergency Number: 86-532-83889090 (NRCC)

Identified uses

Chemical intermediate

2. Hazards identification

GHS Classification

Hazards

Flammable liquid
Acute oral toxicity
Skin corrosion/irritation
Serious eye damage/eye irritation

Category

Category 4
Category 5
Category 1B
Category 1

SAFETY DATA SHEET



Product Name Propionic anhydride
MSDS number 80511
Revision Number 7

Revision Date Jul.27.2016
Issuing date Feb.13.2019

AGHS/EN

Symbol(s)



Signal Word

Danger

Hazard Statements

H227 - Combustible liquid
H303 - May be harmful if swallowed
H314 - Causes severe skin burns and eye damage

Precautionary Statements

P210 - Keep away from heat
P260 - Do not breathe dust/fume/gas/mist/spray/spray.
P264 - Wash hands thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician.
P363 - Wash contaminated clothing before reuse
P370 + P378 - In case of fire, use water/water spray/water jet/carbon dioxide/sand/foam/alcohol resistant foam/chemical powder for extinction
P403 - Store in a well-ventilated place
P405 - Store locked up
P501 - Dispose of contents/container in accordance with local regulations.

3. Composition/Information on ingredients

Chemical characterization n-Propionic anhydride

Components	CAS-No	Percent %
Propionic anhydride	123-62-6	min 98
Propionic acid	79-09-4	< 2

4. First aid measures

Product Name Propionic anhydride
MSDS number 80511
Revision Number 7

Revision Date Jul.27.2016
Issuing date Feb.13.2019

AGHS/EN

4. First aid measures

General Information

Remove contaminated, soaked clothing immediately and dispose of safely. Pay attention to own protection. In any case show the physician the Safety Data Sheet.

Skin

Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Eyes

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

Inhalation

Keep at rest. Move to fresh air. Call a physician immediately.

Ingestion

If conscious, drink plenty of water. If swallowed, do not induce vomiting - seek medical advice.

5. Fire-fighting measures

NFPA: **Health:** 3 **Flammability:** 2 **Instability:** 0

Suitable extinguishing media

Foam, Dry chemical, Carbon dioxide (CO₂), Water spray

Extinguishing media which must not be used for safety reasons

Do not use a solid water stream as it may scatter and spread fire.

Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases

Under conditions giving incomplete combustion, hazardous gases produced may consist of

Carbon monoxide

Carbon dioxide (CO₂)

Combustion gases of organic materials must in principle be graded as inhalation poisons

Special protective equipment for fire-fighters

self-contained breathing apparatus (EN 133).

Environmental precautions

Water used to fight fire runoff can cause environmental damage. Dike and collect water used to fight fire.

Other Information

Cool containers / tanks with water spray.

6. Accidental release measures

Personal precautions

Avoid contact with the skin and the eyes. Keep away from heat and sources of ignition. Provide adequate ventilation.

Environmental precautions

Prevent further leakage or spillage. Do not discharge into the drains/surface waters/groundwater. Dike and collect water used to fight fire.

SAFETY DATA SHEET



Product Name Propionic anhydride
MSDS number 80511
Revision Number 7

Revision Date Jul.27.2016
Issuing date Feb.13.2019

AGHS/EN

Methods for cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Dispose of in accordance with local regulations.

7. Handling and storage

Advice on safe handling

Provide sufficient air exchange and/or exhaust in work rooms.

Incompatible products

Keep away from:., Bases, Amines, Alcohols, water

Protection - fire and explosion:

Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge. Ground and bond containers when transferring material. In case of fire, emergency cooling with water spray should be available.

Material storage

Store locked up. Keep in a dry, cool and well-ventilated place.

Incompatible products

Keep away from:., Bases, Amines, Alcohols, water

Technical measures/Storage conditions

Keep tightly closed in a dry, cool and well-ventilated place. Never allow product to get in contact with water during storage.

8. Exposure controls / personal protection

ACGIH Exposure Limits

Components	TWA
Propionic acid	10 PPM

OSHA Exposure Limits

No exposure limits established.

Exposure controls

Engineering measures

General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

Personal protective equipment

General advice

Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Use only in an area equipped with a safety shower. Hold eye wash fountain available.

SAFETY DATA SHEET



Product Name Propionic anhydride
MSDS number 80511
Revision Number 7

AGHS/EN

Revision Date Jul.27.2016
Issuing date Feb.13.2019

Hygiene measures	When using, do not eat, drink or smoke.. Take off all contaminated clothing immediately.. Wash hands before breaks and immediately after handling the product..
Respiratory protection	If aerosols or vapors are present, respiratory protection is required (gas filter A) .
Eye protection	Tightly fitting safety goggles. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face.. Equipment should conform to EN 166.
Skin protection	impervious clothing
Hand protection	Chemicals resistant gloves
Suitable material	Butyl-rubber
Type	Butoject (Company KCL) or comparable article; or refer to glove manufacturer's recommendation
Evaluation	according to EN 374: level 6
Material thickness	Approx. 0.3 mm
Break through time	480 min

9. Physical and chemical properties

Appearance

Form liquid
Color colourless
Odor pungent

Flash point 63°C
Method EU Method A.9
Autoignition Temperature 282 °C
Method EU A.15
Melting point/range -43°C
Method EU A.1
Boiling point/range 168.4°C @ 1013 hPa
Method EU A.2
Density 1.0103 g/ml @ 20°C
Method EU A.3
Viscosity 1.039 mPa*s @ 25°C
Method OECD 114
Vapor pressure 1.68 hPa @ 20°C
Method EU A.4
Water solubility hydrolyses
Partition coefficient (n-octanol/water) 0.33 (data based on propionic acid)
Explosive Properties not applicable based on consideration of the structure
Oxidizing Properties not applicable based on consideration of the structure
Surface Tension 29.42 mN/m @ 21.4°C
Method EU A.5

10. Stability and reactivity

Product Name Propionic anhydride
MSDS number 80511
Revision Number 7

Revision Date Jul.27.2016
Issuing date Feb.13.2019

AGHS/EN

10. Stability and reactivity

Reactivity

Stable under normal conditions of handling, use and transportation.

Conditions to avoid

Avoid any source of ignition.. Avoid contact with heat, sparks, open flame, and static discharge..

Incompatible Materials

Keep away from:., Amines, Bases, Alcohols, water

Hazardous Combustion or Decomposition Products:

Thermal decomposition products may include oxides of carbon.

Product Name Propionic anhydride
 MSDS number 80511
 Revision Number 7

Revision Date Jul.27.2016
 Issuing date Feb.13.2019

AGHS/EN

11. Toxicological information

Potential health effects

Routes of exposure Skin, eyes, inhalation, ingestion.

Immediate effects

Skin Harmful if absorbed through skin. Causes skin burns.
Eyes Causes eye burns.
Inhalation May be harmful if inhaled. Causes respiratory tract burns.
Ingestion May be harmful if swallowed. Causes digestive tract burns.

Propionic anhydride

Acute oral toxicity LD50: 3455 mg/kg
 (Reference substance: Propionic acid)

Acute inhalation toxicity LC50 (4h): > 20 mg/l
Method Similar to OECD 403

Skin corrosion/irritation corrosive
 (Reference substance: Propionic acid)
Species rabbit

Serious eye damage/eye irritation corrosive
 (Reference substance: Propionic acid)
Species rabbit eye

Carcinogenic effects No evidence of carcinogenicity
Species rat male
Study oral gavage lifetime study

in vitro Mutagenicity Ames Test: negative - with and without metabolic activation -
 Method: OECD 471 (Reference substance: Propionic acid)
 Cell gene-mutation in Chinese Hamster Cells: negative -
 with and without metabolic activation - Method: OECD 476
 (Reference substance: Formic acid)

in vivo Mutagenicity In vitro mammalian chromosome aberration test in Chinese
 hamster cells: negative - with and without metabolic
 activation - OECD 473 (Reference substance: Propionic
 acid)

Developmental effects (Reference substance: Calcium propionate)
Routes of exposure oral gavage
Species rat
 NOAEL: 300 mg/kg bw/day (Maternal toxicity /
 teratogenicity)

Propionic acid

Acute oral toxicity LD50: 960 - 2270 mg/kg, rat- not toxic to harmful

SAFETY DATA SHEET



Product Name Propionic anhydride
MSDS number 80511
Revision Number 7

AGHS/EN

Revision Date Jul.27.2016
Issuing date Feb.13.2019

Acute dermal toxicity	LD50: 500 - 794 mg/kg, rabbit- Harmful to toxic
Acute inhalation toxicity	LC50 (4h): > 5.4 mg/l
Skin corrosion/irritation	corrosive
Species	rabbit
Method	Exposure time: 1 h occluded treatment
Skin Sensitization	nonsensitizer
Species	guinea pig
Method	Maximization
Serious eye damage/eye irritation	Considered to be corrosive
Carcinogenic effects	5 Papillomas of the forestomach mucosa were observed in 20 animals Significant hyperplasia and dysplasia of the forestomach mucosa were also observed
Species	rats
Study	oral dose-feed lifetime study
in vitro Mutagenicity	LOAEL: 2640 mg/kg/d Negative for sister-Chromatid-exchange (SCE) Ames Test: negative - with and without metabolic activation - Method: OECD 471
in vivo Mutagenicity	Mouse micronucleus test for chromosome damage: - negative
Developmental effects	no adverse developmental effects at a dose level of 300 - 400 mg/kg/day
Routes of exposure	oral gavage
Species	rat rabbit mouse hamster
	LOAEL: 300 mg/kg/d
Repeated exposure	90-day Skin ulceration at 233 mg/kg/day (14% solution). No clinical signs of toxicity and no impact on body weight
Routes of exposure	dermal
Species	mice
	LOAEL: 133 mg/kg/d
Repeated Exposure	90-day Increased esophageal epithelial hyperplasia was observed at ~2000 mg/kg/day. No other adverse effects were observed
Routes of exposure	oral dose-feed
Species	dogs
	NOAEL: ~700 mg/kg bw/day

12. Ecological Information

Propionic anhydride

Acute fish toxicity	LC50: > 10000 mg/l (96h) (Reference substance: Calcium propionate)
Species:	Leuciscus idus (Golden orfe)
Method	DIN 38412 T.15
Acute daphnia toxicity	EC50: > 500 mg/l (48h)
Species:	Daphnia magna
Method	EU C.2

Product Name Propionic anhydride
 MSDS number 80511
 Revision Number 7

AGHS/EN

Revision Date Jul.27.2016
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12. Ecological Information

Toxicity to aquatic plants	EC50: > 500 mg/l (72h) (Reference substance: Calcium propionate)
Species:	Desmodemus subspicatus
Method	OECD 201
Toxicity to bacteria	EC50: 60 mg/l (17h) (Reference substance: Calcium propionate)
Species:	Pseudomonas putida
Biodegradation	Readily biodegradable (Reference substance: Propionic acid)
Method	according to OECD criteria
Other potential hazards	The substance does not meet the criteria for PBT / vPvB according to REACH, Annex XIII

13. Disposal considerations

Product information

Disposal required in compliance with all waste management related state and local regulations. The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal.

Uncleaned empty packaging

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse

14. Transport information

US Department of Transportation

UN/NA Number:	UN 2496
Proper Shipping Name	Propionic anhydride
Hazard class	8
Packing Group	III
Emergency Resp. Guide	156

ADR/RID

UN/ID No.	UN 2496
Proper Shipping Name	Propionic anhydride
Hazard Class	8
Classification Code	C3
Packing group	III
Environmentally hazardous	no
Tunnel Restriction Code	(E)
Hazard Label(s)	8
Hazard Number	80

ADN

	ADN: Container and Tanker
UN/ID No.	UN 2496
Proper Shipping Name	Propionic anhydride

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MSDS number 80511
Revision Number 7

Revision Date Jul.27.2016
Issuing date Feb.13.2019

AGHS/EN

14. Transport information

Hazard Class 8
Classification Code C3
Packing group III
Environmentally hazardous no
Hazard Labels 8

ICAO/IATA

UN-No. UN 2496
Proper Shipping Name Propionic anhydride
Hazard Class 8
Packing group III
Environmentally hazardous no
Hazard Labels 8

IMDG

UN/ID No. UN 2496
Proper Shipping Name Propionic anhydride
Hazard Class 8
Packing group III
Marine pollutant no
Hazard Labels 8
EmS Code F-A, S-B

15. Regulatory information

INTERNATIONAL REGULATIONS

This substance is classified as dangerous according to Chinese legislation

International Inventories

Listed on the chemical inventories of the following countries or qualifies for an exemption:

Australia (AICS)
Canada (DSL)
China (IECSC)
Europe (EINECS)
Japan (ENCS)
Japan (ISHL)
Korea (KECI)
New Zealand (NZIoC)
Philippines (PICCS)
United States (TSCA)

16. Other information

Prepared By
Product Stewardship Department
Celanese

SAFETY DATA SHEET



Product Name Propionic anhydride
MSDS number 80511
Revision Number 7

Revision Date Jul.27.2016
Issuing date Feb.13.2019

AGHS/EN

Other Information:

Observe national and local legal requirements.

Changes against the previous version are marked by ***

Sources of key data used to compile the datasheet

Information contained in this safety data sheet is based on Celanese owned data and public sources deemed valid or acceptable. The absence of data elements required by ANSI or 1907/2006/EC indicates that no data meeting these requirements is available.

Further information

This information is based on our present state of knowledge. It shall describe our products regarding safety requirements and shall not be construed as a guarantee or statement of condition and/or quality For more information, other material safety data sheets or technical data sheets please consult the Celanese homepage (www.celanese.com)