

**Product Name** n-Butyric anhydride  
**MSDS number** 80510  
**Revision Number** 5

**Revision Date** Mar.28.2019  
**Issuing date** Mar.28.2019

AGHS/EN

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

**Product Name**  
**n-Butyric anhydride**

**Manufacturer or supplier's details**  
**Celanese Sales Germany GmbH**  
Am Unisys-Park 1  
65843 Sulzbach (Taunus)  
Germany

**Product Information**  
PS.Chemicals.EU@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  
Skin corrosion/irritation  
Acute oral toxicity  
Acute aquatic toxicity

#### Category

Category 4  
Category 1B  
Category 4  
Category 3

#### Symbol(s)



#### Signal Word

Warning

#### Hazard Statements

H227 - Combustible liquid  
H302 - Harmful if swallowed  
H314 - Causes severe skin burns and eye damage  
H402 - Harmful to aquatic life

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**Precautionary Statements**

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
P234 - Keep only in original container  
P260 - Do not breathe dust/fume/gas/mist/spray/spray.  
P264 - Wash hands thoroughly after handling  
P273 - Avoid release to the environment  
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  
P403 + P235 - Store in a well-ventilated place. Keep cool  
P501 - Dispose of contents/container in accordance with local regulations.

### 3. Composition/Information on ingredients

**Chemical characterization** Butanoic acid, anhydride

Components	CAS-No	Percent %
Butyric anhydride	106-31-0	min 98
n-Butyric acid	107-92-6	max 2

### 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

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## 5. Fire-fighting measures

**NFPA:** Health: 3

**Flammability:** 2

**Instability:** 1

### Suitable extinguishing media

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

### 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 (CO<sub>2</sub>)

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

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.

### 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.

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**Incompatible products**

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

**Technical measures/Storage conditions**

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

**8. Exposure controls / personal protection****ACGIH Exposure Limits**

No exposure limits established.

**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.

**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) . Full mask with above mentioned filter according to producers using requirements or self-contained breathing apparatus. Equipment should conform to EN 136 or EN 140 and EN 143.

**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**

**Suitable material**  
**Reference substance**  
**Type**

Chemicals resistant gloves  
 Butyl-rubber  
 Isobutyric anhydride  
 Butoject (Company KCL) or comparable article;  
 or refer to glove manufacturer's recommendation  
 according to EN 374: level 6

**Evaluation**

**Material thickness**  
**Break through time**

Approx. 0.3 mm  
 approx. 480 min

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## 9. Physical and chemical properties

### Appearance

**Form** liquid  
**Color** colourless  
**Odor** pungent

**Flash point** 88°C  
**Method** closed cup  
**Ignition temperature** 279°C  
**Lower explosion limit** 0.9 Vol. %  
**Upper explosion limit** 5.8 Vol. %  
**Melting point/range** -75°C  
**Boiling point/range** 198°C @ 1013 hPa  
**Density** 0.966 - 0.967 g/ml @ 20°C  
**pH** 5.4  
**Vapor pressure** 0.4 hPa @ 20°C  
**Vapor density** 5.4 (Air=1)  
**Water solubility** hydrolyses  
**Partition coefficient (n-octanol/water)** 1.39 (calculated)

## 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

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## 11. Toxicological information

### Potential health effects

**Routes of exposure** Skin, eyes, inhalation, ingestion.

### Immediate effects

<b>Skin</b>	Causes skin burns. Symptoms of overexposure include: Redness or discoloration, swelling, itching, burning or blistering of skin.
<b>Eyes</b>	Causes eye burns. Symptoms of exposure may include: Eye irritation, burning sensation, pain, watering, and/or change of vision. Loss of vision.
<b>Inhalation</b>	Causes respiratory tract burns. Symptoms of exposure may include: Nasal discharge, hoarseness, coughing, chest pain and breathing difficulty.
<b>Ingestion</b>	Causes digestive tract burns. Symptoms of exposure may include: Severe damage to the mouth, throat esophagus and/or stomach.

### Butyric anhydride

<b>Acute oral toxicity</b>	LD50: > 5000 mg/kg, rat
<b>Acute dermal toxicity</b>	LD50: > 5000 mg/kg, rabbit
<b>Acute inhalation toxicity</b>	LC50: > 2200 (calculated) ppm, rat, 8h
<b>Skin corrosion/irritation</b>	irritating
Species	rabbit
<b>Serious eye damage/eye irritation</b>	Severe eye irritation
Species	rabbit eye

The toxicological data given are determined by analogy.

## 12. Ecological Information

### Butyric anhydride

<b>Acute fish toxicity</b>	LC50: 90 mg/l (48h) (Reference substance: Butyric acid)
Species:	Oryzias latipes (Medaka)
Method	QSAR
<b>Chronic fish toxicity</b>	LC50: 245-480 mg/l (48h) (Reference substance: Butyric acid)
Species:	Leuciscus idus (Golden orfe)
Method	DIN 38412 T.15
<b>Acute daphnia toxicity</b>	EC50: 800-1000 mg/l (48h)
Species:	Daphnia magna
Method	DIN 38412, Part 11
<b>Toxicity to aquatic plants</b>	EC50: 46.7 mg/l (72h) (Reference substance: Butyric acid)

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## 12. Ecological Information

Species:	Scenedesmus subspicatus
<b>Toxicity to bacteria</b>	Toxicological threshold concentration (72h): 26 mg/l (Reference substance: Butyric acid)
Species:	Entosiphon sulcatum
<b>Biodegradation</b>	Inherently biodegradable
Method	OECD 302 B (Zahn-Wellens Test)
<b>Bioconcentration factor (BCF)</b>	2.33 (calculated)
<b>Other potential hazards</b>	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 2739
Proper Shipping Name	Butyric anhydride
Hazard class	8
Packing Group	III
Reportable Quantity (RQ)	Butyric acid - 5000 lb/ 2268 kg
Emergency Resp. Guide	156

### ADR/RID

UN/ID No.	UN 2739
Proper Shipping Name	Butyric 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
UN/ID No.	UN 2739
Proper Shipping Name	Butyric anhydride
Hazard Class	8
Classification Code	C3
Packing group	III

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## 14. Transport information

**Environmentally hazardous** no  
**Hazard Labels** 8

**ADN Tanker** FORBIDDEN

### ICAO/IATA

**UN-No.** UN 2739  
**Proper Shipping Name** Butyric anhydride  
**Hazard Class** 8  
**Packing group** III  
**Environmentally hazardous** no  
**Hazard Labels** 8

### IMDG

**UN/ID No.** UN 2739  
**Proper Shipping Name** Butyric 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)  
New Zealand (NZIoC)  
Philippines (PICCS)  
United States (TSCA)

## 16. Other information

HMIS: Health: 3

Flammability: 2

Physical Hazard: 1

### **Prepared By**

Product Stewardship Department  
Celanese



# SAFETY DATA SHEET



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**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](http://www.celanese.com))