

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

NAGH/EN

Revision Date Mar.28.2019
Issuing date Mar.28.2019

1. Product and company identification

Trade Name

n-Butyric anhydride

Manufacturer, importer, supplier
Celanese Sales Germany GmbH
Am Unisys-Park 1
65843 Sulzbach (Taunus)
Germany

Transportation emergency phone numbers:

In USA, call 800 424 9300
Outside USA, call +001 703 527 3887, collect calls accepted.
In Mexico, call 01-800-681-9531

Identified uses

Chemical intermediate

2. Hazard Identification

GHS Classification

Hazards

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

Category

Category 4
Category 4
Category 1B
Category 2A

Label elements



Signal Word

Danger

Hazard Statements

Combustible liquid
Harmful if swallowed
Causes severe skin burns and eye damage
Causes serious eye irritation

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Precautionary statements

Keep away from flames and hot surfaces - No smoking

In case of fire:

Use foam, dry chemical, carbon dioxide (CO2) to extinguish.

Wear protective gloves/ protective clothing/ eye protection/ face protection.

Wash face, hands and any exposed skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Do not breathe dusts or mists

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

Call a POISON CENTER or doctor if you feel unwell.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

Wash contaminated clothing before reuse.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Immediately call a POISON CENTER or doctor.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Store locked up.

Store in a well-ventilated place. Keep cool.

Dispose of contents/ container to an approved waste disposal plant.

3. Composition/information on ingredients

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.

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5. Fire-fighting measures

NFPA: **Health:** 3 **Flammability:** 2 **Instability:** 1

Suitable extinguishing media

Foam, Dry chemical, Carbon dioxide (CO2)

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

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.

Authority Notification

Within the United States, call the National Response Center (800-424-8802) and appropriate state and local authorities if the quantity released over 24 hours is equal to or greater than the reportable quantity listed below:

Butyric acid - 5000 lb/ 2268 kg

7. Handling and storage

Advice on safe handling

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

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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.

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.

Material storage

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

Incompatible products

Keep away from: Bases, Amines, Alcohols, water

8. Exposure controls / personal protection

OSHA Exposure Limits

No exposure limits established.

ACGIH Exposure Limits

No exposure limits established.

Mexico National 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.

Protective equipment

A safety shower and eyebath should be readily available.

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.

9. Physical and chemical properties

Appearance

Form liquid

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9. Physical and chemical properties

Color	colourless
Odor	pungent
Molecular Weight	158.19
Flash point	88°C(190.4°F)
Method	closed cup
Ignition temperature	279°C (534.2°F)
Lower explosion limit	0.9 Vol. %
Upper explosion limit	5.8 Vol. % (-103°F)
Boiling point/range	198°C (388.4°F) @ 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

Possibility of hazardous reactions

Reacts violently with water, alkalies, alcohols.

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11. Toxicological information

Potential health effects

Routes of exposure Skin, eyes, inhalation, ingestion.

Immediate effects

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

Butyric anhydride

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

The toxicological data given are determined by analogy.

12. Ecological Information

Butyric anhydride

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

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Toxicity to aquatic plants	EC50: 46.7 mg/l (72h) (Reference substance: Butyric acid)
Species:	Scenedesmus subspicatus
Toxicity to bacteria	Toxicological threshold concentration (72h): 26 mg/l (Reference substance: Butyric acid)
Species:	Entosiphon sulcatum
Biodegradation	Inherently biodegradable
Method	OECD 302 B (Zahn-Wellens Test)
Bioconcentration factor (BCF)	2.33 (calculated)
Other potential hazards	The substance does not meet the criteria for PBT / vPvB according to REACH, Annex XIII

13. Disposal considerations

Disposal considerations

Dispose of spilled material in accordance with state and local regulations for hazardous waste. Recommended methods are incineration or biological treatment at a federally or state-permitted disposal facility. Note that this information applies to the material as manufactured; processing, use, or contamination may make this information inappropriate, inaccurate, or incomplete.

Note that this handling and disposal information may also apply to empty containers, liners and rinsate. State or local regulations or restrictions are complex and may differ from federal regulations. This information is intended as an aid to proper handling and disposal; the final responsibility for handling and disposal is with the owner of the waste.

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

TDG

UN/NA Number:	UN 2739
Proper Shipping Name	BUTYRIC ANHYDRIDE
Class:	8
Packing Group:	III

Mexico Transport Information

UN-No.	UN 2739
Proper Shipping Name	Butyric anhydride
Hazard Class	8

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Packing Group III
Emergency Response Guide 156

ICAO/IATA

UN-No. UN 2739
Proper Shipping Name Butyric anhydride
Hazard Class 8
Packing group III

IMDG

UN/ID No. UN 2739
Proper Shipping Name Butyric anhydride
Hazard Class 8
Packing group III
Marine pollutant no
EmS Code F-A, S-B

15. Regulatory Information

US State Regulations

Chemicals associated with the product which are subject to the state right-to-know regulations are listed along with the applicable state(s):

Butyric anhydride 106-31-0

New Jersey Listed

n-Butyric acid 107-92-6

Pennsylvania Listed
 New York Listed
 New Jersey Listed
 Illinois Listed
 Massachusetts Listed
 Rhode Island Listed

U.S. FEDERAL REGULATIONS

TSCA Inventory:

We certify that all components are either on the TSCA inventory or qualify for an exemption.

Environmental Regulations:

n-Butyric acid 107-92-6

CERCLA Hazardous Substance Listed

SARA 311:

Acute health: Yes
Chronic health: No

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n-Butyric acid 107-92-6

Fire:	Yes
Sudden release of pressure:	No
Reactive:	Yes

INTERNATIONAL REGULATIONS

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

NFPA:	Health: 3	Flammability: 2	Instability: 1
HMIS:	Health: 3	Flammability: 2	Physical Hazard: 1

Prepared By

Product Stewardship Department
 Celanese

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..

Other Information:

Observe national and local legal requirements
 Changes against the previous version are marked by ***

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Abbreviation and Acronym:

ADR = Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

CAS = Chemical Abstracts Service (division of the American Chemical Society)

CLP = Classification, Labelling and Packaging

DNEL = Derived No Effect Level

EINECS = European Inventory of Existing Commercial Chemical Substances

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC Code = International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IMO)

ICAO = International Civil Aviation Organization

IMDG = International Maritime Code for Dangerous Goods

LC50 = Lethal Concentration

LD50 = Lethal Dose

LOAEC = Low Observed Adverse Effect Concentration

LOAEL = Low Observed Adverse Effect Level

LOEL = Low Observed Effect Level

NOAEC = No Observed Adverse Effect Concentration

NOAEL = No Observed Adverse Effect Level

NOEC = No Observed Effect Concentration

NOEL = No Observed Effect Level

PBT = Persistent, Bioaccumulative and Toxic

PNEC = Predicted No Effect Concentration

RCR = Risk Characterization Ratio

RID = Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

STP = Sewage Treatment Plant

vPvB = very Persistent and very Bioaccumulative