SAFETY DATA SHEET

n-Butyric acid
10460

Version / Revision	4	**Revision Date**	10-May-2022
Supersedes Version	3.00***	**Issuing date**	10-May-2022

SECTION 1: Identification

1.1. Product identifier

Identification of the substance/preparation **n-Butyric acid**

CAS-No 107-92-6

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

Use of the Substance / Preparation Intermediate

Uses advised against None

1.3. Details of the supplier of the safety data sheet

Supplier

OQ Chemicals Corporation
15375 Memorial Drive
West Memorial Place I
Suite 300
Houston, TX 77079
USA
Phone +1 346 378 7300***

Product Information

Product Stewardship
FAX: +49 (0)208 693 2053
email: sc.psq@oq.com

1.4. Emergency telephone number

Emergency telephone number NCEC +1 202 464 2554
available 24/7

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

This substance is classified in accordance with paragraph (d) of §1910.1200 (GHS-US classification).

Acute oral toxicity Category 4, H302
Skin corrosion/irritation Category 1B, H314
Serious eye damage/eye irritation Category 1, H318
Flammable liquid Category 4, H227
Environmental hazard Aquatic Acute 3; H402

OSHA Specified Hazards Not applicable.

2.2. Label elements

Labeling according to §1910.1200 (GHS-US labeling).

Hazard symbol(s)

Signal word **Danger**

Hazard statements

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

Precautionary statements

Prevention

P210: Keep away from flames and hot surfaces. - No smoking.
P260: Do not breathe gas/mist/vapours.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response

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 or shower.
P304 + P340: IF INHALED: Remove person to fresh air and keep 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/doctor.
P363: Wash contaminated clothing before reuse.

Storage

P403 + P235: Store in a well ventilated place. Keep cool.
P405: Store locked up.

Disposal

P501: Dispose of contents/container in accordance with local regulation.

2.3. Other hazards

Vapours may form explosive mixture with air
Components of the product may be absorbed into the body by inhalation

SECTION 3: Composition / information on ingredients

3.1. Substances

***

Component	CAS-No	Concentration (%)
Butyric acid	107-92-6	> 99,5

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
Keep at rest. Aerate with fresh air. When symptoms persist or in all cases of doubt seek medical advice.

Skin
Wash off immediately with soap and plenty of water. When symptoms persist or in all cases of doubt seek medical advice.

Eyes
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.

Ingestion
Call a physician immediately. Do not induce vomiting without medical advice.

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

Main symptoms
nausea, vomiting, convulsions, shortness of breath, discomfort.

Special hazard
Lung irritation, Stomach perforation, Lung oedema, Methemoglobinemia.

4.3. Indication of any immediate medical attention and special treatment needed

General advice
Remove contaminated, soaked clothing immediately and dispose of safely. First aider needs to protect himself.

Treat symptomatically. If ingested, flush stomach and compensate acidosis.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
foam, dry chemical, carbon dioxide (CO2), water spray

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

5.2. Special hazards arising from the substance or mixture

Under conditions giving incomplete combustion, hazardous gases produced may consist of:
carbon monoxide (CO)
carbon dioxide (CO2)
Combustion gases of organic materials must in principle be graded as inhalation poisons
Vapours are heavier than air and may spread along floors
Vapours may form explosive mixture with air

5.3. Advice for firefighters

Special protective equipment for firefighters
Fire fighter protection should include a self-contained breathing apparatus (NIOSH-approved or EN 133) and full fire-fighting turn out gear.

Precautions for firefighting
Keep people away from and upwind of fire. Cool containers / tanks with water spray. Water run-off and vapor cloud may be corrosive. Dike and collect water used to fight fire.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: For personal protective equipment see section 8. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Keep people away from and upwind of spill/leak. Ensure adequate ventilation, especially in confined areas. Keep away from heat and sources of ignition.
For emergency responders: Personal protection see section 8.***

6.2. Environmental precautions

Prevent further leakage or spillage. Do not discharge product into the aquatic environment without pretreatment (biological treatment plant).

6.3. Methods and material for containment and cleaning up

Methods for containment
Stop the flow of material, if possible without risk. Dike spilled material, where this is possible.

Methods for cleaning up
Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. If liquid has been spilt in large quantities clean up promptly by scoop or vacuum. Dispose of in accordance with local regulations. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).

6.4. Reference to other sections

For personal protective equipment see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Provide sufficient air exchange and/or exhaust in work rooms.

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.

Advice on the protection of the environment
See Section 8: Environmental exposure controls.

Incompatible products
bases
amines
strong oxidizing agents

7.2. Conditions for safe storage, including any incompatibilities

Advice on protection against fire and explosion
Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). In case of fire, emergency cooling with water spray should be available. Ground and bond containers when transferring material. Vapours may form explosive mixture with air.

Technical measures/Storage conditions
Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care.

Suitable material
stainless steel, Polyethylene

Unsuitable material
iron

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Exposure limits United States of America

No exposure limits established.

8.2. Exposure controls

Appropriate Engineering controls
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.

Individual protection measures, such as personal protective equipment

General industrial hygiene practice
Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Ensure that eyewash stations and safety showers are close to the workstation location.

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.

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.

Hand protection
Wear protective gloves. Recommendations are listed below. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

Suitable material	butyl-rubber
Evaluation	according to EN 374: level 6
Glove thickness	approx 0,7 mm
Break through time	approx 480 min

Suitable material	nitrile rubber
Evaluation	according to EN 374: level 6
Glove thickness	approx 0,55 mm
Break through time	> 480 min

Skin and body protection
Impervious clothing. Wear face-shield and protective suit for abnormal processing problems.

Respiratory protection
Respirator with filter for organic vapour. Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (vapor or mist). Equipment should conform to NIOSH.***

Environmental exposure controls
If possible use in closed systems. If leakage can not be prevented, the substance needs to be suck off at the emersion point, if possible without danger. Observe the exposure limits, clean exhaust air if needed. If recycling is not practicable, dispose of in compliance with local regulations. Inform the responsible authorities in case of leakage into the atmosphere, or of entry into waterways, soil or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	liquid
Colour	colourless
Odour	foul smelling
Odour threshold	0,001 mg/m³
pH	2 (50 % in water @ 20 °C (68 °F)) DIN 19268***
Melting point/range	19,4 °F (-7 °C) (Freezing Point)***
Method	DIN ISO 3016***
Boiling point/range	327,2 °F (164 °C) @ 1 atm (101,3 kPa)
Method	OECD 103***
Flash point	159,8 °F (71 °C) @ 1 atm (101,3 kPa)***
Method	ISO 2719
Evaporation rate	No data available
Flammability (solid, gas)	Does not apply, the substance is a liquid
Lower explosion limit	2 Vol %
Upper explosion limit	10 Vol %

Vapour pressure

Values [hPa]	Values [kPa]	Values [atm]	@ °C	@ °F	Method
1	0,1	0,001	20	68	DIN EN 13016-2***
9	0,9	0,009	50	122	DIN EN 13016-2***

Vapour density 3,0 (Air = 1) @ 20 °C (68 °F)

Relative density

Values	@ °C	@ °F	Method
0,957	20	68	DIN 51757

Solubility	No data available
Water solubility	miscible OECD 105
log Pow	1,1 (measured) OECD 117
Autoignition temperature	815 °F (435 °C) @ 1008 hPa***
Method	DIN 51794
Decomposition temperature	No data available
Viscosity	1,67 mPa*s @ 68 °F (20 °C)
Method	DIN 51562, dynamic

9.2. Other information

Molecular weight	88,11
Molecular formula	C4 H8 O2
log Koc	1,69 calculated***
Dissociation constant	pKa 4,9 @ 21 °C (69,8 °F) OECD 112***
Oxidizing properties	Does not apply, substance is not oxidising. There are no chemical groups associated with oxidizing properties
Refractive Index	1,398 @ 68 °F (20 °C)
Explosive properties	Does not apply, substance is not explosive. There are no chemical groups

	associated with explosive properties
Surface tension	68,5 mN/m (1 g/l @ 20°C (68°F)), OECD 115

SECTION 10: Stability and Reactivity

10.1. Reactivity

The reactivity of the product corresponds to the typical reactivity shown by the substance group as described in any text book on organic chemistry.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Vapours may form explosive mixture with air.

10.4. Conditions to avoid

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

10.5. Incompatible materials

bases, amines, strong oxidizing agents.

10.6. Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure Ingestion, Inhalation, Eye contact, Skin contact

Butyric acid, CAS: 107-92-6
Main symptoms
nausea, vomiting, convulsions, shortness of breath.
Target Organ Systemic Toxicant - Single exposure
Based on available data, the classification criteria are not met for:
STOT SE
Target Organ Systemic Toxicant - Repeated exposure
Based on available data, the classification criteria are not met for:
STOT RE***

Acute toxicity
Butyric acid (107-92-6)

Routes of Exposure	Endpoint	Values	Species	Method
Oral	LD50	1630 mg/kg	rat, male/female	OECD 401
Dermal	LD50	6096 mg/kg	rabbit male***	OECD 402
Inhalative	LC0	5,1 mg/l (4h)	rat, male/female	OECD 403

Butyric acid, CAS: 107-92-6
Assessment
The available data lead to the classification given in section 2

Irritation and corrosion				
Butyric acid (107-92-6)				
Target Organ Effects	Species	Result	Method	
Skin	rabbit	corrosive	OECD 404	1h
Eyes	rabbit	corrosive		

Butyric acid, CAS: 107-92-6
Assessment
The available data lead to the classification given in section 2
For respiratory irritation, no data are available

Butyric acid, CAS: 107-92-6
Assessment
Skin sensitization was not tested due to the corrosive properties of the substance
For respiratory sensitization, no data are available

Subacute, subchronic and prolonged toxicity				
Butyric acid (107-92-6)				
Type	Dose	Species	Method	
Subchronic toxicity***	NOAEC: 500 ppm/d (13 weeks)***	rat***	Inhalation EPA OTS 798.2450***	read across***

Butyric acid, CAS: 107-92-6
Assessment
Based on available data, the classification criteria are not met for:
STOT RE***

Carcinogenicity, Mutagenicity, Reproductive toxicity					
Butyric acid (107-92-6)					
Type	Dose	Species	Evaluation	Method	
Mutagenicity		CHL	negative (without metabolic activation)***	OECD 473 (Chromosomal Aberration)	In vitro study
Mutagenicity		Salmonella typhimurium	negative	OECD 471 (Ames)	In vitro study***
Mutagenicity		mouse	negative	OECD 474	read across in vivo***
Developmental Toxicity	LOAEC: 1500 ppm	rat		OECD 414, Inhalative	read across Maternal toxicity

					Developmental toxicity***
Developmental Toxicity	NOAEC: 1500 ppm	rabbit		OECD 414, Inhalative	read across Maternal toxicity Developmental toxicity***
Reproductive toxicity	NOAEC: 2000 ppm***	rat, male/female		OECD 416	read across Fertility***
Mutagenicity		CHO (Chinese Hamster Ovary) cells	negative	OECD 476 (Mammalian Gene Mutation)	In vitro study***

Butyric acid, CAS: 107-92-6

CMR Classification

The available data on CMR properties are summarized in the table above. They do not indicate a classification into categories 1A or 1B

Evaluation

In vitro tests did not show mutagenic effects
Did not show mutagenic effects in animal experiments
In the absence of specific alerts no cancer testing is required***

Butyric acid, CAS: 107-92-6

Aspiration toxicity

Due to the viscosity, this product does not present an aspiration hazard***

Other adverse effects

Components of the product may be absorbed into the body by inhalation.

Note

Handle in accordance with good industrial hygiene and safety practice. Further details on substance data can be found in the registration dossier under the following link:
http://echa.europa.eu/information-on-chemicals/registered-substances.

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity			
Butyric acid (107-92-6)			
Species	Exposure time	Dose	Method
Daphnia magna (Water flea)	48h	EC50: 51,25 mg/l	read across DIN 38412, part 11***
Desmodesmus subspicatus	72h	EC50: 45,1 mg/l (Biomass)***	read across DIN 38412, part 9***
Pimephales promelas (fathead minnow)	96h	LC50: 66,4 mg/l	read across OECD 203***
Pseudomonas putida	18 h	EC50: 78 mg/l (Growth inhibition)	DIN 38412, part 8

12.2. Persistence and degradability

Butyric acid, CAS: 107-92-6
Biodegradation
100 % (14 d), Sewage, domestic, aerobic, OECD 301 E.***

Abiotic Degradation		
Butyric acid (107-92-6)		
Type	Result	Method
Hydrolysis***	not expected***	
Photolysis***	Half-life (DT50): 188 h***	calculated***

12.3. Bioaccumulative potential

Butyric acid (107-92-6)		
Type	Result	Method
log Pow***	1,1 @ 25 °C (77 °F)***	measured, OECD 117***
log BCF***	0,5***	calculated***

12.4. Mobility in soil

Butyric acid (107-92-6)		
Type	Result	Method
Surface tension	68,5 mN/m (1 g/l @ 20°C (68°F))	OECD 115
Adsorption/Desorption***	log Koc: 1,69 @ pH 7***	calculated***
Distribution to environmental compartments***	Air: 6,16 % Soil: 57,1 % Water: 36,7 % Sediment: 0,07 %***	calculated Fugacity Model Level III***

12.5. Results of PBT and vPvB assessment

Butyric acid, CAS: 107-92-6
PBT and vPvB assessment
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

12.6. Other adverse effects

Butyric acid, CAS: 107-92-6
No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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.

SECTION 14: Transport information

D.O.T. (49CFR)

14.1. UN number	UN 2820
14.2. UN proper shipping name	Butyric acid
14.3. Transport hazard class(es)	8
14.4. Packing group	III
14.5. Environmental hazards	no
14.6. Special precautions for user	
Reportable Quantity (RQ)	5000 lb/ 2270 kg (Butyric acid)
Emergency Response Guide	153

ICAO-TI / IATA-DGR

14.1. UN number	UN 2820
14.2. UN proper shipping name	Butyric acid
14.3. Transport hazard class(es)	8
14.4. Packing group	III
14.5. Environmental hazards	no
14.6. Special precautions for user	no data available

IMDG

14.1. UN number	UN 2820
14.2. UN proper shipping name	Butyric acid
14.3. Transport hazard class(es)	8
14.4. Packing group	III
14.5. Environmental hazards	no
14.6. Special precautions for user	
EmS	F-A, S-B

14.7. Transport in bulk according to Annex II

of MARPOL and the IBC Code

Product name	Butyric acid
Ship type	3
Pollution category	Y

SECTION 15: Regulatory information

Federal and State Regulations

Components of the product are listed in the quoted regulations. For details please refer to the regulations directly. This list is not exhaustive, please check for other applicable regulations.

Federal Regulations

This product is listed on the TSCA inventory

Butyric acid, CAS: 107-92-6

CERCLA Hazardous Substance***

CERCLA RQ	5000 LBS***

State Regulations

Butyric acid, CAS: 107-92-6

- CA Hazardous Substances (Director's) List***
- IL Chemical Safety Act***
- MA Hazardous Substances List***
- MA RTK List***
- NY RTK List***
- PA RTK List***
- RI RTK List***

International Inventories

Butyric acid, CAS: 107-92-6

- AICS (AU)***
- DSL (CA)***
- IECSC (CN)***
- EC-No. 2035323 (EU)***
- ENCS (2)-608 (JP)***
- ISHL (2)-608 (JP)***
- KECI KE-03838 (KR)***
- INSQ (MX)***
- PICCS (PH)***
- TSCA (US)***
- NZIoC (NZ)***
- TCSI (TW)***

SECTION 16: Other information

Revision Date	10-May-2022
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Hazard Rating Systems

NFPA (National Fire Protection Association)

Health Hazard	3
Fire Hazard	2
Reactivity	0

HMIS (Hazardous Material Information System)

Health Hazard	3
Flammability	2
Physical Hazard	0

Training advice
For effective first-aid, special training / education is needed.

Sources of key data used to compile the datasheet
Information contained in this safety data sheet is based on OQ owned data and public sources deemed valid or acceptable. The absence of data elements required by OSHA, ANSI or Annex II, Regulation 1907/2006/EC indicates, that no data meeting these requirements is available.

Further information for the safety data sheet
Changes against the previous version are marked by ***. Observe national and local legal requirements. For more information, other material safety data sheets or technical data sheets please consult the OQ homepage (www.chemicals.oq.com).
The use of a comma in section 3 and section 7 to 12 is the same as a period.

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End of Safety Data Sheet