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MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1: Product identifiers

Product Name : n-Butyric acid, GR 99%+ Product Code : B 2427 CAS No: 107-92-6

1.2. Relevant identified uses of the substance or mixture and uses advised against Use : Industrial. For professional use only.

1.3. Details of the supplier of the safety data sheet Company identification OTTO CHEMIE PVT LTD No 603, 6th Floor, Tardeo AC Market, 87, Tardeo Road, Tardeo, Mumbai, Maharashtra 400034, India (BHARAT)

1.4. Emergency telephone number Phone no.: + 91 98200 41841 (10:00 am - 06:00 pm)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture Acute toxicity, (Category 4) Skin corrosion, (Sub-category

Serious eye damage, (Category 2.2 Label elements Labelling according Regulation (EC) No 1272/2008 Pictogram Signal Word Danger Hazard Statements H302 H314 **Precautionary Statements** P280 protection. P301 + P312 unwell. P303 + P361 + P353

P304 + P340 + P310

1B)

1)

P305 + P351 + P338

P363 Supplemental Hazard Statements Reduced Labeling (<= 125 ml) Pictogram Signal Word Hazard Statements H314 **Precautionary Statements** P280

P304 + P340 + P310

H302: Harmful if swallowed. H314: Causes severe skin burns and eye damage

H318: Causes serious eye damage.

Harmful if swallowed. Causes severe skin burns and eye damage.

Wear protective gloves/ protective clothing/ eye protection/ face IF SWALLOWED: Call a POISON CENTER/ doctor if you feel

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

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor. IF IN EYES. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsina.

Wash contaminated clothing before reuse.

none

Danger

Causes severe skin burns and eye damage.

Wear protective gloves/ protective clothing/ eye protection/ face protection. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove person to fresh air and keep comfortable

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for breathing. Immediately call a POISON CENTER/ doctor.

P305 + P351 + P338			IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	
P363		Wash contaminated	d clothing before reuse.	
Supplemental Haz	ard		-	
Statements 2.3 Other hazards		none	none	
		components considered to be eith		
	(<i>//</i>	very persistent and very bioaccum	nulative (vPvB) at	
levels of 0.1% or h	0			
Ecological informa				
		tain components considered to ha		
		EACH Article 57(f) or Commission		
(FU) 2017/2100 or	0	ulation (EU) 2018/605 at levels of	0.1% or higher.	
\ <i>)</i>				
Toxicological inform				
Toxicological inform The substance/mix	ture does not con	tain components considered to ha		
Toxicological inform The substance/mix disrupting propertie	ture does not con es according to RE	EACH Article 57(f) or Commission	Delegated regulation	
Toxicological inform The substance/mix disrupting propertie	ture does not con es according to RE		Delegated regulation	
Toxicological inform The substance/mix disrupting propertie (EU) 2017/2100 or	ture does not con es according to RE Commission Reg	EACH Article 57(f) or Commission ulation (EU) 2018/605 at levels of	Delegated regulation	
Toxicological inforr The substance/mix disrupting propertie (EU) 2017/2100 or SECTION 3: Com	ture does not con es according to RE Commission Reg	EACH Article 57(f) or Commission	Delegated regulation	
Toxicological inforr The substance/mix disrupting propertie (EU) 2017/2100 or SECTION 3: Com 3.1 Substances	ture does not con es according to RE Commission Reg	EACH Article 57(f) or Commission ulation (EU) 2018/605 at levels of tion on ingredients	Delegated regulation	
Toxicological inforr The substance/mix disrupting propertie (EU) 2017/2100 or SECTION 3: Com 3.1 Substances Formula	ture does not con es according to RE Commission Reg	EACH Article 57(f) or Commission ulation (EU) 2018/605 at levels of tion on ingredients : C4H8O2	Delegated regulation	
Toxicological inforr The substance/mix disrupting propertie (EU) 2017/2100 or SECTION 3: Com 3.1 Substances Formula Molecular weight	ture does not con es according to RE Commission Reg	EACH Article 57(f) or Commission ulation (EU) 2018/605 at levels of tion on ingredients : C4H8O2 : 88,11 g/mol	Delegated regulation	
Toxicological inform The substance/mix disrupting propertie (EU) 2017/2100 or SECTION 3: Com 3.1 Substances Formula Molecular weight CAS-No.	ture does not con es according to RE Commission Reg	EACH Article 57(f) or Commission ulation (EU) 2018/605 at levels of tion on ingredients : C4H8O2 : 88,11 g/mol : 107-92-6	Delegated regulation	
Toxicological inforr The substance/mix disrupting propertie (EU) 2017/2100 or SECTION 3: Com 3.1 Substances Formula Molecular weight	ture does not con es according to RE Commission Reg	EACH Article 57(f) or Commission ulation (EU) 2018/605 at levels of tion on ingredients : C4H8O2 : 88,11 g/mol	Delegated regulation	
Toxicological inform The substance/mix disrupting propertie (EU) 2017/2100 or SECTION 3: Com 3.1 Substances Formula Molecular weight CAS-No.	ture does not con es according to RE Commission Reg	EACH Article 57(f) or Commission ulation (EU) 2018/605 at levels of tion on ingredients : C4H8O2 : 88,11 g/mol : 107-92-6	Delegated regulation	
Toxicological inforr The substance/mix disrupting propertie (EU) 2017/2100 or SECTION 3: Com 3.1 Substances Formula Molecular weight CAS-No. EC-No.	ture does not con es according to RE Commission Reg	EACH Article 57(f) or Commission ulation (EU) 2018/605 at levels of tion on ingredients : C4H8O2 : 88,11 g/mol : 107-92-6 : 203-532-3	Delegated regulation 0.1% or higher.	
Toxicological inforr The substance/mix disrupting propertie (EU) 2017/2100 or SECTION 3: Com 3.1 Substances Formula Molecular weight CAS-No. EC-No. Component	ture does not con es according to RE Commission Reg	EACH Article 57(f) or Commission ulation (EU) 2018/605 at levels of tion on ingredients : C4H8O2 : 88,11 g/mol : 107-92-6 : 203-532-3	Delegated regulation 0.1% or higher.	

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

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance. If inhaled After inhalation: fresh air. Call in physician. In case of skin contact In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately. In case of eye contact After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses. If swallowed 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 The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed No data available

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SECTION 5: Firefighting measures

5.1 Extinguishing media Suitable extinguishing media Water Foam Carbon dioxide (CO2) 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 Carbon oxides Combustible. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating. Development of hazardous combustion gases or vapours possible in the event of fire. 5.3 Advice for firefighters Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing. 5.4 Further information Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system. **SECTION 6: Accidental release measures** 6.1 Personal precautions, protective equipment and emergency procedures Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8. 6.2 Environmental precautions Do not let product enter drains. 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 and 10). Take up with liquid-absorbent and neutralising material (e.g. Chemizorb® H⁺, Merck Art. No. 101595). Dispose of properly. Clean up affected area. 6.4 Reference to other sections For disposal see section 13. **SECTION 7: Handling and storage** 7.1 Precautions for safe handling Advice on protection against fire and explosion Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge. Hygiene measures Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2. 7.2 Conditions for safe storage, including any incompatibilities Storage conditions Tightly closed. Storage class Storage class (TRGS 510): 8A: Combustible, corrosive hazardous materials 7.3 Specific end use(s) Apart from the uses mentioned in section 1.2 no other specific uses are stipulated **SECTION 8: Exposure controls/personal protection** 8.1 Control parameters

Ingredients with workplace control parameters 8.2 Exposure controls Personal protective equipment Eye/face protection Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles Skin protection

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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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de). Full contact Material: Latex gloves Minimum layer thickness: 0,6 mm Break through time: 480 min 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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de). Splash contact Material: Nitrile rubber Minimum layer thickness: 0,11 mm Break through time: 30 min Material tested:KCL 741 Dermatril® L **Body Protection** Acid-resistant protective clothing Respiratory protection required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system. Recommended Filter type: Filter type ABEK The entrepeneur 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. Control of environmental exposure Do not let product enter drains. **SECTION 9: Physical and chemical properties** 9.1 Information on basic physical and chemical properties a) Physical state clear, liquid b) Color colorless c) Odor Stench. d) Melting Melting point/range: -7 - -5 °C point/freezing point 164 °C at 1.013,25 hPa - OECD Test Guideline 103 e) Initial boiling point and boiling range f) Flammability (solid, No data available gas) g) Upper/lower Upper explosion limit: 10 %(V) flammability or Lower explosion limit: 2 %(V) explosive limits h) Flash point 72 °C - closed cup i) Autoignition 435 °C at 1.008 hPa temperature j) Decomposition No data available temperature k) pH 2.0 at 25 °C - DIN 19268(50% solution) Viscosity, kinematic: No data available I) Viscosity Viscosity, dynamic: 1,66 mPa.s at 20 °C - ASTM D 445 m) Water solubility 10 g/l at 20 °C - OECD Test Guideline 105- completely soluble n) Partition coefficient: log Pow: 1,1 at 25 °C - Bioaccumulation is not expected. n-octanol/water o) Vapor pressure 0,57 hPa at 20 °C

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p) Density Relative density q) Relative vapor densitv r) Particle characteristics s) Explosive properties t) Oxidizing properties 9.2 Other safety information Surface tension 68.5 mN/m at 1g/l at 20 °C - OECD Test Guideline 115 Dissociation constant 4,9 at 20,7 °C - OECD Test Guideline 112 Relative vapor density 3.04 - (Air = 1.0)

0,9574 g/cm3 at 20 °C - DIN 51757 No data available No data available

No data available

No data available none

SECTION 10: Stability and reactivity

10.1 Reactivitv Forms explosive mixtures with air on intense heating. A range from approx. 15 Kelvin below the flash point is to be rated as critical. 10.2 Chemical stability The product is chemically stable under standard ambient conditions (room temperature). 10.3 Possibility of hazardous reactions Violent reactions possible with: Strong oxidizing agents chromium(VI) oxide Vapors may form explosive mixture with air. 10.4 Conditions to avoid Strong heating. 10.5 Incompatible materials No data available 10.6 Hazardous decomposition products In the event of fire: see section 5 **SECTION 11: Toxicological information**

11.1 Information on toxicological effects Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Toxicity to Animals: Oral LD50 Rat: 1500 mg/kg; Dermal LD50 Rabbit: 2000mg/kg Inhalation LC50 Rat: > 50mg/L. Chronic Effects on Humans: CARCINOGENIC EFFECTS: Classified None. by NTP, None. by OSHA, None. by NIOSH. Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of inhalation (lung irritant). Special Remarks on Toxicity to Animals: Not available. Special Remarks on other Toxic Effects on Humans: Not available. Special Remarks on other Toxic Effects on Humans: Not available.

SECTION 12: Ecological information

12.1 Toxicity Toxicity to fish static test LC50 - Pimephales promelas (fathead minnow) - 77 mg/l - 96 h (OECD Test Guideline 203) Toxicity to daphnia and other aquatic invertebrates static test EC50 - Daphnia magna (Water flea) - 51,25 mg/l - 48 h (DIN 38412) Toxicity to algae IC50 - Desmodesmus subspicatus (green algae) - 46,7 mg/l - 72 h Remarks: (IUCLID) Toxicity to bacteria static test EC10 - Pseudomonas putida - 51 mg/l - 18 h (DIN 38 412 Part 8)

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static test EC50 - Pseudomonas putida (DIN 38 412 Part 8) 12.2 Persistence and degradability Biodegradability aerobic - Exposure tim Result: 100 % - Readily biodegradable. Remarks: (ECHA) 12.3 Bioaccumulative potential No data available 12.4 Mobility in soil No data available 12.5 Results of PBT and vPvB assessm This substance/mixture contains no corr bioaccumulative and toxic (PBT), or ver levels of 0.1% or higher. 12.6 Endocrine disrupting properties	e 14 d nent nponents considered to be eith				
Product:					
Assessment :	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.				
12.7 Other adverse effects	Regulation (EO) 2010/005 at	levels of 0.1% of higher.			
Avoid release to the environment.					
Avoid release to the environment.					
SECTION 13: Disposal consideration 13.1 Waste treatment methods	s				
Product					
See www.retrologistik.com for processe	s regarding the return of chem	icals and			
containers, or contact us there if you ha					
SECTION 14: Transport information	A Write				
14.1 UN number					
ADR/RID: 2820	IMDG: 2820	IATA: 2820			
14.2 UN proper shipping name	INIDO. 2020	IATA. 2020			
ADR/RID: BUTYRIC ACID					
IMDG:					
IATA: Butyric acid					
14.3 Transport hazard class(es)					
ADR/RID: 8	IMDG: 8	IATA: 8			
14.4 Packaging group					
ADR/RID: III	IMDG: III	IATA: III			
14.5 Environmental hazards					
ADR/RID: no	IMDG Marine pollutant: no	IATA: no			
14.6 Special precautions for user					
Tunnel restriction code : (E)					
Further information : No data available					
SECTION 15: Regulatory information					
15.1 Safety, health and environmental regulations/legislation specific for the					
substance or mixture					
This material safety data sheet complies with the requirements of Regulation (EC) No.					
1907/2006. Other regulations					
Other regulations	tornity protoction in apportance	a ta Dir 02/85/EEC ar			
Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or					
stricter national regulations where applicable. Take note of Dir 94/33/EC on the protection of young people at work.					
15.2 Chemical Safety Assessment					
For this product a chemical safety assessment was not carried out					
	sement mas not ournou out				

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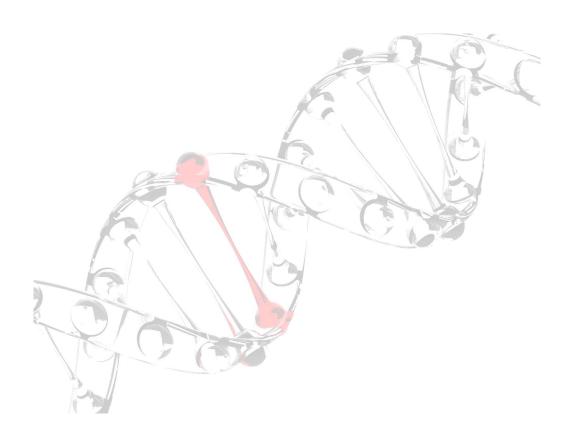
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SECTION 16: Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.



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