SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1	**Product identifiers**		
	Product name	:	Orotic acid Monohydrate ≥99 %
	Trade Name	:	
	CAS-No.	:	50887-69-9
1.2	**Relevant identified uses of the substance or mixture and uses advised against**		
	Relevant identified uses:	:	Laboratory chemical Laboratory and analytical use
	Uses advised against:	:	Do not use for private purposes (household). Food, drink and animal feedingstuffs.
1.3	**Details of the supplier of the safety data sheet**		
	Company	:	Inventys Research Company Pvt Ltd 901C Tower 2, One International Centre, Senapati Bapat Marg, Prabhadevi, Mumbai 400013. INDIA Tel:+91.22.714.00.200 Fax: +91.22.714.00.299 www.Inventys.In
1.4	**Emergency telephone number**		
	Emergency Phone #	:	+91 22.714.00.200

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

Section	Hazard class	Category	Hazard class and category	Hazard statement
3.2	Skin corrosion/irritation	2	Skin Irrit. 2	H315
3.3	Serious eye damage/eye irritation	2	Eye Irrit. 2	H319
3.8R	Specific target organ toxicity - single exposure (respiratory tract irritation)	3	STOT SE 3	H335

For full text of abbreviations: see SECTION 16

2.2	**Label Elements**
	Labelling Signal word: Warning Pictograms GHS07  **Hazard statements** H315 Causes skin irritation H319 Causes serious eye irritation H335 May cause respiratory irritation **Precautionary statements** **Precautionary statements – prevention** P261 Avoid breathing dust P280 Wear protective gloves/eye protection **Precautionary statements – response** P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
2.3	**Other hazards**
	Results of PBT and vPvB assessment According to the results of its assessment, this substance is not a PBT or a vPvB. **Endocrine disrupting properties** Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.

SECTION 3: Composition/information on ingredients

3.1	**Substances**
	Name of substance Orotic acid Monohydrate Molecular formula $C_5H_4N_2O_4 \cdot H_2O$ Molar mass 174,1 g/mol CAS No 50887-69-9 EC No 200-619-8

SECTION 4: First aid measures

4.1	**Description of first aid measures :**

	General notes Take off contaminated clothing. **Following inhalation** Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice. **Following skin contact** Rinse skin with water/shower. In case of skin irritation, consult a physician. **Following eye contact** Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist. **Following ingestion** Rinse mouth. Call a doctor if you feel unwell..
4.2	**Most important symptoms and effects, both acute and delayed**
	Irritation, Cough, Dyspnoea
4.3	**Indication of any immediate medical attention and special treatment needed**
	none
SECTION 5: Firefighting measures	
5.1	**Extinguishing media:**
	Suitable extinguishing media co-ordinate firefighting measures to the fire surroundings! water, foam, alcohol resistant foam, dry extinguishing powder, ABC-powder **Unsuitable extinguishing media** water jet
5.2	**Special hazards arising from the substance or mixture**
	Combustible. **Hazardous combustion products** In case of fire may be liberated: Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO_2)
5.3	**Advice for firefighters**
	In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a Reasonable distance. Wear self-contained breathing apparatus.
SECTION 6: Accidental release measures	
6.1	**Personal precautions, protective equipment and emergency procedures:**
	For non-emergency personnel Avoid contact with skin, eyes and clothes. Do not breathe dust.
6.2	**Environmental precautions**
	Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3	**Methods and material for containment and cleaning up**
	Advice on how to contain a spill Covering of drains. Take up mechanically. **Advice on how to clean up a spill** Take up mechanically. Control of dust. **Other information relating to spills and releases** Place in appropriate containers for disposal.
6.4	**Reference to other sections**
	Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.
SECTION 7: Handling and storage	
7.1	**Precautions for safe handling:**
	Provision of sufficient ventilation. Avoid dust formation. **Measures to prevent fire as well as aerosol and dust generation** Removal of dust deposits. **Advice on general occupational hygiene** Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.
7.2	**Conditions for safe storage including any incompatibilities:**
	Store in a dry place. **Incompatible substances or mixtures** Observe hints for combined storage. Incompatible materials: see section 10. **Consideration of other advice:** **Ventilation requirements** Use local and general ventilation. **Specific designs for storage rooms or vessels** Recommended storage temperature: 15 – 25 °C
7.3	**Specific end use(s)**
	No information available.
SECTION 8: Exposure controls/personal protection	
8.1	**Control parameters**
	National limit values **Occupational exposure limit values (Workplace Exposure Limits)**
8.2	**Exposure controls**

	Individual protection measures (personal protective equipment) **Eye/face protection** Use safety goggle with side protection. **Skin protection** **• hand protection** Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide. **• type of material** NBR (Nitrile rubber) **• material thickness** >0,11 mm **• breakthrough times of the glove material** >480 minutes (permeation: level 6) **• other protection measures** Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. **Respiratory protection** Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P2 (filters at least 94 % of airborne particles, colour code: White). **Environmental exposure controls** Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1	**Information on basic physical and chemical properties:**	
	a) Physical state	solid
	b) Form	powder, crystalline
	c) Colour	white
	d) Odour	odourless
	e) Melting point/freezing point	334 °C
	f) Boiling point or initial boiling point and boiling range	not determined
	g) Flammability	this material is combustible, but will not ignite readily
	h) Lower and upper explosion limit	not relevant (solid)

	i) Flash point	not applicable
	j) Auto-ignition temperature	not determined
	k) Decomposition temperature	not relevant
	l) pH (value)	not applicable
	m) Kinematic viscosity	not relevant
	n) Solubility(ies) Water solubility	 1,7 g/l at 20 °C (TOXNET)
	o) Partition coefficient Partition coefficient n-octanol/water (log value):	 this information is not available
	p) Vapour pressure	not determined
	q) Density and/or relative density Density Relative vapour density	 not determined not relevant (solid)
	r) Particle characteristics	No data available.
	s) Other safety parameters Oxidising properties	 none
9.2	**Other information**	
	Information with regard to physical hazard classes:	hazard classes acc. to GHS (physical hazards): not relevant
	Other safety characteristics:	There is no additional information.

SECTION 10: Stability and reactivity

10.1	**Reactivity Hazard:**
	The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.
10.2	**Chemical stability:**
	The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
10.3	**Possibility of hazardous reactions**
	Violent reaction with: strong oxidiser
10.4	**Conditions to avoid:**
	There are no specific conditions known which have to be avoided.
10.5	**Incompatible materials:**
	There is no additional information.
10.6	**Hazardous decomposition products:**
	Hazardous combustion products: see section 5.

SECTION 11: Toxicological information	
11.1	**Information on toxicological effects**
	Classification acc. to GHS **Acute toxicity** Shall not be classified as acutely toxic. **Skin corrosion/irritation** Causes skin irritation. **Serious eye damage/eye irritation** Causes serious eye irritation. **Respiratory or skin sensitisation** Shall not be classified as a respiratory or skin sensitiser. **Germ cell mutagenicity** Shall not be classified as germ cell mutagenic. **Carcinogenicity** Shall not be classified as carcinogenic. **Reproductive toxicity** Shall not be classified as a reproductive toxicant. **Specific target organ toxicity - single exposure** May cause respiratory irritation. **Specific target organ toxicity - repeated exposure** Shall not be classified as a specific target organ toxicant (repeated exposure). **Aspiration hazard** Shall not be classified as presenting an aspiration hazard. **Symptoms related to the physical, chemical and toxicological characteristics** • **If swallowed** Data are not available. • **If in eyes** Causes serious eye irritation • **If inhaled** Irritation to respiratory tract, cough, Dyspnoea • **If on skin** causes skin irritation • **Other information** none
11.2	**Endocrine disrupting properties**
	Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.
11.3	**Information on other hazards**
	There is no additional information.

SECTION 12: Ecological information	
12.1	**Toxicity**
	Shall not be classified as hazardous to the aquatic environment
12.2	**Persistence and degradability**
	Theoretical Oxygen Demand (without nitrification): 0,4595 mg/mg Theoretical Oxygen Demand (with nitrification): 0,85 mg/mg Theoretical Carbon Dioxide: 1,264 mg/mg
12.3	**Bioaccumulative potential**
	Data are not available
12.4	**Mobility in soil**
	Data are not available
12.5	**Results of PBT and vPvB assessment**
	Data are not available
12.6	**Endocrine disrupting properties**
	Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.
12.7	**Other adverse effects**
	Data are not available.
SECTION 13: Disposal considerations	
13.1	**Waste treatment methods**
	This material and its container must be disposed of as hazardous waste. Dispose of contents/ container in accordance with local/regional/national/international regulations. **Sewage disposal-relevant information** Do not empty into drains. **Waste treatment of containers/packagings** Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.
13.2	**Relevant provisions relating to waste**
	The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process. **Properties of waste which render it hazardous** **HP 4** irritant - skin irritation and eye damage **HP 5** specific target organ toxicity (STOT)/aspiration toxicity
13.3	**Remarks**

	Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions. Non-contaminated packages may be recycled.

SECTION 14: Transport information

14.1	**UN-Number**
	not subject to transport regulations
14.2	**UN proper shipping name**
	not assigned
14.3	**Transport hazard class(es)**
	none
14.4	**Packaging Group**
	not assigned
14.5	**Environmental hazards**
	non-environmentally hazardous acc. to the dangerous goods regulations
14.6	**Special precautions for users**
	There is no additional information.
14.7	**Maritime transport in bulk according to IMO instruments**
	The cargo is not intended to be carried in bulk.
14.8	**Information for each of the UN Model Regulations**
	International Maritime Dangerous Goods Code (IMDG) - Additional information Not subject to IMDG. **International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information** Not subject to ICAO-IATA.

SECTION 15: Regulatory information

15.1	**Safety, health and environmental regulations/legislation specific for the substance or mixture**
15.2	**Chemical safety assessment**
	No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: OTHER INFORMATION

This product is not bioactive, non-radioactive. It is for R&D use only. Not for drug, household or other uses. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge. It does not represent any guarantee of the product.

Further information

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