

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifiers

Product Name: Recombinant Human alpha-L-Iduronidase/IDUA Avi Protein, CF
Catalog Number: AVI11613

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

Identified Uses: For research use only.

1.3 Details of the supplier of the safety data sheet

Company:	R&D Systems, Inc. a Bio-Techne Brand 614 McKinley Place NE Minneapolis, MN 55413, USA	Telephone:	1-800-343-7475
		Fax:	1-612-656-4400
		Internet:	www.rndsystems.com
		Email address:	info@bio-techne.com
Canada:	21 Canmotor Ave Toronto, ON M8Z 4E6	Telephone:	1-855-668-8722
		Fax:	902-827-6402
		Email address:	Canada.inquiries@bio-techne.com
United Kingdom:	19 Barton Lane Abingdon Science Park Abingdon, OX14 3NB	Telephone:	44 (0)1235 529449
		Fax:	44 (0)1235 533420
		Email address:	info.emea@bio-techne.com
China:	1193 Changning Road Unit 1901, Raffles Changning Office Shanghai, China	Telephone:	86-400-821-3475
		Fax:	76 (021) 52371001
		Email address:	techsupport.cn@bio-techne.com

1.4 Emergency Telephone Number

For chemical emergency, spill, leak, fire, exposure, or accident call CHEMTREC day or night: Within U.S. 1-800-262-8200 Worldwide 1-703-741-5500
Bio-Techne Tel: US: 612-379-2956 or 800-343-7475 / Europe: +44(0)1235-529449 / China 86-400-821-3475

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

This substance does not meet the classification criteria according to Regulation (EC) No 1272/2008 [GHS/CLP] or 29 CFR 1910.1200 [OSHA].

2.2 Label Elements

This product does not need to be labeled in accordance with Regulation (EC) No 1272/2008 [GHS/CLP] or 29 CFR 1910.1200 [OSHA].

2.3 Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable.

3.2 Mixtures

Component	CAS No.	EC No.	Index No.	Classification	Concentration*
1,2,3-Propanetriol	56-81-5			Not classified.	10 – 30 %

*Percentages are listed in weight by weight percentage (w/w%). The specific chemical identity and/or exact percentage of composition have been withheld as a trade secret [29 CFR 1910.1200].

4. FIRST AID MEASURES

4.1 Description of first aid measures

General Advice

Consult a doctor and show this safety data sheet.

If Inhaled

Remove to fresh air and monitor breathing. If breathing becomes difficult, give oxygen. If breathing stops, give artificial respiration. Consult a doctor.

In Case of Skin Contact

Immediately wash skin with copious amounts of soap and water for at least 15 minutes. Remove contaminated clothing and shoes and wash before reuse. Consult a doctor.

In Case of Eye Contact

Flush with copious amounts of water for at least 15 minutes. Consult a doctor.

If Swallowed

Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Consult a doctor.

4.2 Most important symptoms and effects, both acute and delayed

General

Not expected to present a significant hazard under anticipated conditions of normal use.

Inhalation

Prolonged exposure may cause irritation.

Skin Contact

Prolonged exposure may cause skin irritation.

Eye Contact

May cause slight irritation to eyes.

Ingestion

Ingestion may cause adverse effects.

Chronic Symptoms

None known.

4.3 Indication of immediate medical attention and special treatment needed

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing Media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media

Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2 Special hazards arising from the substance or mixture

Hazardous reactions will not occur under normal conditions.

5.3 Precautions for fire-fighters

Wear suitable protective clothing to prevent contact with skin and eyes and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Do not take action without suitable protective clothing - see section 8 of SDS. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing vapors, mist, dust or gas.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover spillage with suitable absorbent material. Hold all material for appropriate disposal as described under section 13 of SDS.

6.4 Reference to other sections

For required PPE see section 8. For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid inhalation, contact with eyes, skin and clothing. Avoid the formation of dust and aerosols. Use in a well-ventilated area. Keep away from sources of ignition. Avoid prolonged or repeated exposure.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool, well-ventilated area. Keep away from direct sunlight. Keep container tightly sealed until ready for use.

7.3 Specific end uses

Not applicable.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace and control parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), or Canadian provincial governments.

1,2,3-Propanetriol (56-81-5)		
USA OSHA	OSHA PEL TWA	15 mg/m ³ (mist, total particulate) 5 mg/m ³ (mist, respirable fraction)
Alberta	OEL TWA	10 mg/m ³ (mist)
British Columbia	OEL TWA	10 mg/m ³ (mist, total) 3 mg/m ³ (mist-respirable)
Nunavut	OEL STEL	20 mg/m ³ (mist)

Nunavut	OEL TWA	10 mg/m ³ (mist)
Northwest Territories	OEL STEL	20 mg/m ³ (mist)
Northwest Territories	OEL TWA	10 mg/m ³ (mist)
Quebec	VEMP OEL TWA EV	10 mg/m ³ (mist)
Saskatchewan	OEL STEL	20 mg/m ³ (mist)
Saskatchewan	OEL TWA	10 mg/m ³ (mist)
Yukon	OEL TWA	30 mppcf (mist) 10 mg/m ³ (mist)
Belgium	OEL TWA (Legal Basis: Royal Decree 21/01/2020)	10 mg/m ³ (mist)
Croatia	OEL TWA (Legal Basis: OG No. 91/2018)	10 mg/m ³
Czech Republic	OEL TWA (Legal Basis: Reg 41/2020)	10 mg/m ³
Estonia	OEL TWA (Legal Basis: Regulation No. 105)	10 mg/m ³
Finland	OEL TWA (Legal Basis: HTP-ARVOT 2020)	20 mg/m ³
France	OEL TWA (Legal Basis: INRS ED 984)	10 mg/m ³ (aerosol)
Germany	OEL TWA (Legal Basis: TRGS 900)	200 mg/m ³ (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed-inhalable fraction)
Greece	OEL TWA (Legal Basis: PWHSE)	10 mg/m ³
Poland	OEL TWA (Legal Basis: Dz. U. 2020 Nr. 61)	10 mg/m ³ (inhalable fraction)
Portugal	OEL TWA (Legal Basis: Portuguese Norm NP 1796:2014)	10 mg/m ³ (mist)
Slovakia	OEL TWA (Legal Basis: Gov. Decree 33/2018)	11 mg/m ³
Slovenia	OEL TWA (Legal Basis: No. 79/19)	200 mg/m ³ (inhalable fraction)
Slovenia	OEL STEL (Legal Basis: No. 79/19)	400 mg/m ³ (inhalable fraction)
Spain	OEL	10 mg/m ³ (mist)
Switzerland	OEL STEL (Legal Basis: OLVSNIAIF)	100 mg/m ³ (inhalable dust)
Switzerland	OEL TWA (Legal Basis: OLVSNIAIF)	500 mg/m ³ (inhalable dust)

8.2 Exposure controls

Appropriate Engineering Controls

Use in a fume hood where applicable. Ensure all engineering measures described under section 7 of SDS are in place. Ensure laboratory is equipped with a safety shower a eye wash station.

8.3 Personal Protective Equipment

Eye / Face Protection

Use appropriate safety glasses.

Skin Protection

Use appropriate chemical resistant gloves (minimum requirement use standard BS EN 374:2003). Gloves should be inspected before use. Wash and dry hands thoroughly after handling.

Body Protection

Wear appropriate protective clothing.

Respiratory Protection

If risk assessment indicates necessary, use a suitable respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Clear liquid	Vapor Pressure	No data available.
Odor	Little to none	Vapor Density	No data available.
Odor Threshold	No data available.	Relative Density	No data available.
pH	5.0	Solubility	No data available.
Melting / Freezing Point	No data available.	Partition Coefficient	No data available.
Boiling Point / Range	No data available.	Auto ignition Temperature	No data available.
Flash Point	No data available.	Decomposition Temperature	No data available.
Evaporation Rate	No data available.	Viscosity	No data available.
Flammability (Solid, Gas)	Not applicable.	Explosive Properties	No data available.
Upper / Lower Flammability or Explosive Limits	No data available.	Oxidizing Properties	No data available.

9.2 Other safety information

No data available.

10. STABILITY AND REACTIVITY

10.1 Reactivity

Hazardous reactions will not occur under normal conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerizations will not occur.

10.4 Conditions to avoid

Direct sunlight, extremely high or low temperatures, and incompatible materials.

10.5 Incompatible materials

Strong acids/alkalis, strong oxidizing/reducing agents.

10.6 Hazardous decomposition products

Not expected to decompose under ambient conditions.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Toxicity

1,2,3-Propanetriol (56-81-5): LD50 – Oral Rat – 12600 mg/kg (Source: NLM_CIP). LD50 – Dermal Rabbit - > 10 g/kg (Source: NLM_CIP). LC50 – Inhalation Rat - > 2.75 mg/l/4h (No mortalities)

Skin Corrosion/Irritation

Classified based on available data.

Serious Eye Damage / Irritation

Classified based on available data.

Respiratory or Skin Sensitization

Classified based on available data.

Germ Cell Mutagenicity

Classified based on available data.

Carcinogenicity

Classified based on available data.

Reproductive Toxicity

Classified based on available data.

Specific Target Organ Toxicity – Single Exposure

Classified based on available data.

Specific Target Organ Toxicity – Repeated Exposure

Classified based on available data.

Aspiration Hazard

Classified based on available data.

Symptoms / Routes of Exposure

Inhalation:	Prolonged exposure may cause irritation.
Ingestion:	Ingestion may cause adverse effects.
Skin:	Prolonged exposure may cause skin irritation.
Eyes:	May cause slight irritation to eyes.
Delayed/Immediate Effects:	No known symptoms.

Additional Information

Classified based on available data.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

1,2,3-Propanetriol (56-81-5): LC50 – Fish – 51000 – 57000 mg/l (Exposure time: 96 h – Species: *Oncorhynchus mykiss* [static]).

12.2 Persistence and degradability

No data available.

12.3 Bio accumulative potential

1,2,3-Propanetriol (56-81-5): BCF Fish – No bioaccumulation. Partition coefficient n-octanol/water (Log Pow) – -1.75 at 25 C (at pH 7.4)

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

Does not contain any PBT/vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII.

12.6 Endocrine disrupting properties

Based on available data this substance/the substances in this mixture not listed below do(es) not have endocrine disrupting properties with respect to non-target organisms as it does not meet the criteria set out in section B of Regulation (EU) No 2017/2100 and/or the criteria set out in Regulation (EU) 2018/605, or the substance(s) are not required to be disclosed.

12.7 Other adverse effects

Other information

Avoid release to the environment.

13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods****Product**

Transfer to a suitable container and arrange for collection by specialized disposal company in accordance with national, regional, or local legislation.

Contaminated Packaging

Dispose of in a regulated landfill site or other method for hazardous or toxic wastes in accordance with national, regional, or local legislation.

14. TRANSPORT INFORMATION

Classified according to the criteria of the UN Model Regulations as reflected in the IMDG Code, ADR, RID, DOT and IATA.

14.1 UN-Number

Does not meet the criteria for classification as hazardous for transport.

14.2 UN proper shipping name

Does not meet the criteria for classification as hazardous for transport.

14.3 Transport hazard class(es)

Does not meet the criteria for classification as hazardous for transport.

14.4 Packaging group

Does not meet the criteria for classification as hazardous for transport.

14.5 Environmental hazards

Does not meet the criteria for classification as hazardous for transport.

14.7 Additional Transport Information

Does not meet the criteria for classification as hazardous for transport.

15. REGULATORY INFORMATION

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006. COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No 1907/2006 and 29 CFR 1910.1200 [OSHA]

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

TSCA (Toxic Substances Control Act): 1,2,3-Propanetriol (56-81-5) listed. Status: active.

SARA 313: Not applicable.

SARA 311/312: Not applicable.

CERCLA Reportable Quantity: Not applicable.

California Proposition 65: Not applicable.

U.S. – New Jersey Right to Know Hazardous Substance List: 1,2,3-Propanetriol (56-81-5) listed.

U.S. – Pennsylvania RTK (Right to Know) List: 1,2,3-Propanetriol (56-81-5) listed.

U.S. – Massachusetts Right to Know List: 1,2,3-Propanetriol (56-81-5) listed.

Canadian DSL (Domestic Substances List): 1,2,3-Propanetriol (56-81-5) listed.

REACH Annex XVII Information: Not applicable.

REACH Candidate List Information: Not applicable.

POP (2019/1021) – Persistent Organic Pollutants Information: Not applicable.

PIC Regulation EU (649/2012) – Export and Import of Hazardous Chemicals Information: Not applicable.

REACH Annex XIV Information: Not applicable.

Substances Depleting the Ozone Layer (1005/2009) Information: Not applicable.

EC Inventory Information: 1,2,3-Propanetriol (56-81-5) – Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Australian Industrial Chemicals Introduction Scheme (AICIS Inventory): 1,2,3-Propanetriol (56-81-5) listed introduction.

PICCS (Philippines Inventory of Chemicals and Chemical Substances): 1,2,3-Propanetriol (56-81-5) listed.

Japanese ENCS (Existing & New Chemical Substances) inventory: 1,2,3-Propanetriol (56-81-5) listed.

KECL/KECI (Korean Existing Chemicals Inventory): 1,2,3-Propanetriol (56-81-5) listed.

IECSC (Inventory of Existing Chemical Substances Produced or Imported in China): 1,2,3-Propanetriol (56-81-5) listed.

NZIoC (New Zealand Inventory of Chemicals): 1,2,3-Propanetriol (56-81-5) listed.

Japanese ISHL (Industrial Safety and Health Law): 1,2,3-Propanetriol (56-81-5) listed.

INSQ (Mexican National Inventory of Chemical Substances): 1,2,3-Propanetriol (56-81-5) listed.

TCSI (Taiwan Chemical Substance Inventory): 1,2,3-Propanetriol (56-81-5) listed.

NCI (Vietnam - National Chemical Inventory): 1,2,3-Propanetriol (56-81-5) listed.

Thailand Existing Chemicals Inventory (DIW): 1,2,3-Propanetriol (56-81-5) listed.

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been made for this product.

16. **OTHER INFORMATION**

Further Information

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This company shall not be held liable for any damage resulting from handling or from contact with the above product. This material must only be handled by suitably qualified experienced scientists in appropriately equipped and authorized facilities. The above information is believed to be correct but does not purport to be all inclusive and should be used as a guide only for experienced personnel. Always consult your safety advisor and follow appropriate local and national safety legislature. The absence of warning must not, under any circumstance, be taken to mean that no hazard exists.

End of safety data sheet.