SAFETY DATA SHEET

AVITI Dx 2x150 Cartridge CB Freestyle Low Output - Position 8

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name:	AVITI Dx 2x150 Cartridge CB Freestyle Low Output - Position 8
Product no.:	820-00044

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

Relevant identified uses of the substance or mixture:	Use as laboratory reagent Restricted to professional and industrial use.
Uses advised against :	All other uses not recommended above

1.3. Details of the supplier of the safety data sheet

Company and address:	**Element Biosciences, Inc.** 10055 Barnes Canyon Rd. Suite 100 92121 San Diego, CA United States (619) 353-0300
Contact person:	Element Biosciences, Inc.
E-mail:	info@elembio.com
Revision:	08/09/2026
SDS Version:	1.0

1.4. Emergency telephone number

Poison centres open 24 hours every day:
Bergamo: Az. Osp. Papa Giovanni XXII. Piazza OMS, 1, 24127. Tel: 800.88.33.00
Florence: Az. Osp. "Careggi" U.O. Tossicologia Medica. Largo Brambilla, 3, 50134. Tel: 055.794.7819
Foggia: Az. Osp. Univ. Foggia. V.le Luigi Pinto, 1, 71122. Tel: 800.183.459
Milano: Osp. Niguarda Ca' Granda. Piazza Ospedale Maggiore,3, 20162. Tel: 02.66.1010.29
Naples: Az. Osp. "A. Cardarelli". Via A. Cardarelli, 9, 80131. Tel: 081.545.3333
Pavia: Centro Nazionale di Informazione Tossicologica. Via Salvatore Maugeri, 10, 27100. Tel: 0382.24.444
Rome: “Osp. Pediatrico Bambino Gesù” Dip. Emergenza e Accettazione DEA. Piazza Sant`Onofrio, 4, 00165. Tel: 06.6859.3726
Rome: Policlinico "A. Gemelli". Largo Agostino Gemelli, 8, 168. Tel: 06.305.4343
Rome: Policlinico "Umberto I". V.le del Policlinico, 155, 161. Tel: 06.4997.8000

Verona: Az. Osp. Integrata Verona. Piazzale Aristide Stefani, 1, 37126. Tel: 800.011.858
See section 4 on first aid measures.

SECTION 2: HAZARDS IDENTIFICATION

Classified according to Regulation (EC) No. 1272/2008 (CLP).

2.1. Classification of the substance or mixture

STOT RE 2; H373, May cause damage to organs through prolonged or repeated exposure.

2.2. Label elements

Hazard pictogram(s):



Signal word: Warning

Hazard statement(s): May cause damage to organs through prolonged or repeated exposure. (H373)

Precautionary statement(s):

General: Not applicable.

Prevention: Do not breathe vapour/mist. (P260)

Response: Get medical advice/attention if you feel unwell. (P314)

Storage: Not applicable.

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

Hazardous substances: Ethane-1,2-diol

Additional labelling:

2.3. Other hazards

Additional warnings: This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification. The substance(s) shown below are considered/suspected to be endocrine disruptors according to the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2023/707:
Lithium chloride

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Not applicable. This product is a mixture.

3.2. Mixtures

Product/substance	Identifiers	% w/w	Classification	Note
Ethane-1,2-diol	CAS No.: 107-21-1 EC No.:	15-25%	Acute Tox. 4, H302 STOT RE 2, H373	[1]

	REACH: Index No.:			
Lithium chloride	CAS No.: 7447-41-8 EC No.: REACH: Index No.:	1-3%	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319	
Sodium hydroxide	CAS No.: 1310-73-2 EC No.: REACH: Index No.:	<0.25%	Met. Corr. 1, H290 Skin Corr. 1A, H314	
Hydrochloric acid	CAS No.: 7647-01-0 EC No.: REACH: Index No.:	<0.25%	Skin Corr. 1B, H314 STOT SE 3, H335	[1]

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

Other information

[1] European occupational exposure limit.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General information: In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

Inhalation: Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her.

Skin contact: Remove contaminated clothing and shoes immediately. Ensure to wash exposed skin thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.
If skin irritation occurs: Get medical advice/attention.

Eye contact: If in eyes: Flush eyes with water or saline water (20-30 °C) for at least 5 minutes. Remove contact lenses. Seek medical assistance and continue flushing during transport.

Ingestion: If the person is conscious, rinse the mouth with water and stay with the person. Never give the person anything to drink.
In case of malaise, seek medical advice immediately and

bring the safety data sheet or label from the product. Do not induce vomiting, unless recommended by the doctor. Have the person lean forward with head down to avoid inhalation of or choking on vomited material.

Burns: Not applicable.

4.2. Most important symptoms and effects, both acute and delayed
None known.

4.3. Indication of any immediate medical attention and special treatment needed
Call a POISON CENTER/doctor if you feel unwell.

Information to medics
Bring this safety data sheet or the label from this product.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media
Suitable extinguishing media: Alcohol-resistant foam, carbon dioxide, powder, water mist.
Unsuitable extinguishing media: Waterjets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture
Fire will result in dense smoke. Exposure to combustion products may harm your health.
Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.
If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:
Halogenated compounds
Carbon oxides (CO / CO2)

5.3. Advice for firefighters
To avoid contact with the substance, wear self-contained breathing apparatus and protective clothing.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
Avoid direct contact with spilled substances.
Ensure adequate ventilation, especially in confined areas.
Contaminated areas may be slippery.

6.2. Environmental precautions
Avoid discharge to lakes, streams, sewers, etc.
Keep unauthorized persons away from the spill

6.3. Methods and material for containment and cleaning up
Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.
Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

6.4. Reference to other sections

See section 13 “Disposal considerations” on handling of waste.
See section 8 "Exposure controls/personal protection" for protective measures.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid direct contact with the product.
Avoid contact during pregnancy and while nursing.
Smoking, drinking and consumption of food is not allowed in the work area.
See section 8 "Exposure controls/personal protection" for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage material:	Always store in containers of the same material as the original container.
Storage conditions:	No specific requirements.
Incompatible materials:	Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Ethane-1,2-diol
Short term exposure limit (15 minutes) (mg/m^3): 104
Short term exposure limit (15 minutes) (ppm): 40
Long term exposure limit (8 hours) (mg/m^3): 52
Long term exposure limit (8 hours) (ppm): 20
Annotations:
"Cute" = The substance can be absorbed through the skin.

Hydrochloric acid
Short term exposure limit (15 minutes) (mg/m^3): 15
Short term exposure limit (15 minutes) (ppm): 10
Long term exposure limit (8 hours) (mg/m^3): 8
Long term exposure limit (8 hours) (ppm): 5

Ministerial Decree of 14 April 2021. Transposition of Commission Directive 2019/1831/EU of 24 October 2019 defining the fifth list of indicative occupational exposure values in implementation of Council Directive 98/24/EC and amending Directive 2009/39/EC of the Commission.

DNEL

Ethane-1,2-diol

Duration:	Route of exposure:	DNEL:
Long term – Systemic effects - General population	Dermal	53 mg/kg bw/day
Long term – Systemic effects - Workers	Dermal	106 mg/kg bw/day
Long term – Local effects - General population	Inhalation	7 mg/m³
Long term – Local effects - Workers	Inhalation	35 mg/m³

Hydrochloric acid

Duration:	Route of exposure:	DNEL:
Long term – Local effects - General population	Inhalation	8 mg/m³
Long term – Local effects - Workers	Inhalation	8 mg/m³
Short term – Local effects - General population	Inhalation	15 mg/m³
Short term – Local effects - Workers	Inhalation	15 mg/m³

Lithium chloride

Duration:	Route of exposure:	DNEL:
Long term – Systemic effects - General population	Dermal	4.25 mg/kg bw/day
Long term – Systemic effects - Workers	Dermal	9.9 mg/kg bw/day
Long term – Local effects - General population	Inhalation	0.6 mg/m³
Long term – Local effects - Workers	Inhalation	1.2 mg/m³
Long term – Systemic effects - General population	Inhalation	0.6 mg/m³
Long term – Systemic effects - Workers	Inhalation	1.2 mg/m³
Short term – Local effects - General population	Inhalation	0.6 mg/m³
Short term – Local effects - Workers	Inhalation	1.2 mg/m³
Long term – Systemic effects - General population	Oral	0.43 mg/kg bw/day
Short term – Systemic effects - General population	Oral	1.29 mg/kg bw/day

PNEC

Ethane-1,2-diol

Route of exposure:	Duration of Exposure:	PNEC:
Soil		5 mg/kg

Lithium chloride

Route of exposure:	Duration of Exposure:	PNEC:
Freshwater		2.175 mg/L
Freshwater sediment		56.54 mg/kg
Marine water		0.217 mg/L
Marine water sediment		5.654 mg/kg
Sewage treatment plant		1,402 mg/L
Soil		10.44 mg/kg

8.2. Exposure controls

Compliance with the given occupational exposure limits values should be controlled on a regular basis.

General recommendations: Smoking, drinking and consumption of food is not allowed in the work area.

Exposure scenarios: There are no exposure scenarios implemented for this product.

Exposure limits: Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values above.

Appropriate technical measures: The formation of vapours must be kept at a minimum and below current limit values (see above). Installation of a local exhaust system if normal air flow in the work room is not sufficient is recommended. Ensure eyewash and emergency showers are clearly marked.
Apply standard precautions during use of the product. Avoid inhalation of vapours.

Hygiene measures: In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Pay special attention to hands, forearms and face.

Measures to avoid environmental exposure: Keep damming materials near the workplace. If possible, collect spillage during work.

Individual protection measures, such as personal protective equipment

Generally: Use only CE marked protective equipment.

Respiratory Equipment:

Type	Class	Colour	Standards	
Respiratory protection is not needed in the event of adequate ventilation.				

Skin protection:

Recommended	Type/Category	Standards	
Dedicated work clothing should be worn.	-	-	

Hand protection:

Material	Glove thickness (mm)	Breakthrough time (min.)	Standards	
Nitrile rubber, Natural rubber				

Eye protection:

Type	Standards	
Safety glasses with side shields.	EN 166 / EN ISO 16321-1	

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	No data available.
Odour / Odour threshold:	No data available.
pH:	6 – 9
Density (g/cm^3):	No data available.
Kinematic viscosity:	No data available.
Particle characteristics:	Does not apply to liquids.

Phase changes

Melting point/Freezing point (°C):	No data available.
Softening point/range (°C):	Does not apply to liquids.
Boiling point (°C):	No data available.
Vapour pressure:	No data available.
Relative vapour density:	No data available.
Decomposition temperature (°C):	No data available.

Data on fire and explosion hazards

Flash point (°C):	No data available.
Flammability (°C):	No data available.
Auto-ignition temperature (°C):	No data available.
Lower and upper explosion limit (% v/v):	No data available.

Solubility

Solubility in water:	No data available.
n-octanol/water coefficient (LogKow):	No data available.
Solubility in fat (g/L):	No data available.

9.2. Other information

Other physical and chemical parameters:	No data available.
Oxidizing properties:	No data available.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity
No data available.

10.2. Chemical stability
The product is stable under the conditions, noted in section 7 “Handling and storage”.

10.3. Possibility of hazardous reactions
None known.

10.4. Conditions to avoid
None known.

10.5. Incompatible materials
Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

10.6. Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity
Based on available data, the classification criteria are not met.

Skin corrosion/irritation
Based on available data, the classification criteria are not met.

Serious eye damage/irritation
Based on available data, the classification criteria are not met.

Respiratory sensitization
Based on available data, the classification criteria are not met.

Skin sensitisation
Based on available data, the classification criteria are not met.

Germ cell mutagenicity
Based on available data, the classification criteria are not met.

Carcinogenicity
Based on available data, the classification criteria are not met.

Reproductive toxicity
Based on available data, the classification criteria are not met.

STOT-single exposure
Based on available data, the classification criteria are not met.

STOT-repeated exposure
May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard
Based on available data, the classification criteria are not met.

Symptoms related to the physical, chemical and toxicological characteristics
None known.

11.2. Information on other hazards

Endocrine disrupting properties

This mixture/product does not contain any substances known to have hormone-disrupting properties in relation to health.

Other information

Hydrochloric acid has been classified by IARC as a group 3.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Based on available data, the classification criteria are not met.

12.2. Persistence and degradability

Based on available data, the classification criteria are not met.

12.3. Bioaccumulative potential

Based on available data, the classification criteria are not met.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

12.6. Endocrine disrupting properties

This mixture/product does not contain any substances considered to have endocrine-disrupting properties in relation to the environment.

12.7. Other adverse effects

None known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Product is covered by the regulations on hazardous waste.
HP 5 - Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
Dispose of contents/container to an approved waste disposal plant.
Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.

EWC code: Not applicable.

Contaminated packing

Packaging containing residues of the product must be disposed of similarly to the product.

SECTION 14: TRANSPORT INFORMATION

	14.1 UN / ID ***	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other information:
ADR/ADN/RID	-	-	-	-	-	-
IMDG	-	-	-	-	-	-
IATA	-	-	-	-	-	-

* Packing group
** Environmental hazards
*** UN number or ID number

Additional information

Not dangerous goods according to ADR/ADN/RID, IATA and IMDG.

14.6. Special precautions for user

Not applicable.

14.7. Maritime transport in bulk according to IMO instruments

No data available.

SECTION 15: REGULATORY INFORMATION

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

Restrictions for application:	Restricted to professional users. People under the age of 18 shall not be exposed to this product. Pregnant women and women breastfeeding must not be exposed to this product. The risk, and possible technical precautions or design of the workplace needed to eliminate exposure, must be considered.
Demands for specific education:	No specific requirements.
SEVESO - Categories / dangerous substances:	Hydrochloric acid
Regulation on drug precursors:	Hydrochloric acid is included (Category 3)
Additional information:	Not applicable.
Sources:	Implementation of Directive 94/33 / EC on the protection of young people on work. LEGISLATIVE DECREE 25 November 1996, n. 645 concerning the improvement of safety and health at work of pregnant workers, who have recently given birth or are breastfeeding. Legislative Decree 26 June 2015, n. 105 relating to the control of the danger of major accidents associated with dangerous substances. Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.

Council Regulation (EC) No 273/2004 on drug precursors.
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (CLP).
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

15.2. Chemical safety assessment

No

SECTION 16: OTHER INFORMATION

Full text of H-phrases as mentioned in section 3

H290, May be corrosive to metals.
H302, Harmful if swallowed.
H314, Causes severe skin burns and eye damage.
H315, Causes skin irritation.
H319, Causes serious eye irritation.
H335, May cause respiratory irritation.
H373, May cause damage to organs through prolonged or repeated exposure.

Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS = Chemical Abstracts Service
CE = Conformité Européenne (European conformity)
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
CSA = Chemical Safety Assessment
CSR = Chemical Safety Report
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EC = Effective concentration
ED = Effective dose
EINECS = European Inventory of Existing Commercial chemical Substances
EL = Effective Loading
ErC = Concentration associated with x% growth rate response
ES = Exposure Scenario
EUH statement = CLP-specific Hazard statement
EuPCS = European Product Categorisation System
EWC = European Waste Catalogue
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
GWP = Global warming potential
HP = Hazardous Property code

IARC = International Agency for Research on Cancer (IARC)
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IC = X maximum inhibitory concentration
IMDG = International Maritime Dangerous Goods
LC = Lethal concentration
LCLo = Value is the lowest concentration of a material in air reported to have caused the death of animals or humans
LD = Lethal dose
LOAEC = Lowest Observed Adverse Effect Concentration
LOAEL = Lowest Observed Adverse Effect Level
LOEC = Lowest Observed Effect Concentration
LogKow = logarithm of the n-octanol/water coefficient
LL = Lethal Loading
M = For multiplication factor
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
NOAEC = No Observed Adverse Effect Concentration
NOAEL = No Observed Adverse Effect Level
NOEC = No Observed Effect Concentration
NOELR = No Observable Effect Loading Rate
OECD = Organisation for Economic Co-operation and Development
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SCL = A specific concentration limit
SVHC = Substances of Very High Concern
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TWA = Time weighted average
UN = United Nations
UVCB = Unknown or variable composition, complex reaction products or of biological materials
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

Additional information

The classification of the mixture in regard of health hazards is in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP).

The safety data sheet is validated by

Matthew Byrne

Other

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a triangle.
The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.
It is recommended to hand over this safety data sheet to the actual user of the product.
Information in this safety data sheet cannot be used as a product specification.

Country-language: IT-en