SAFETY DATA SHEET

AD99 – Bovine Cardiac Muscle Actin

Revision: 18 November 2026 | Version 1.0 | Supersedes MSDS dated 14 August 2017

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier	AD99 — Bovine Cardiac Muscle Actin
1.2 Relevant identified uses	Laboratory reagent for in vitro research. Uses advised against: human or veterinary diagnostic, therapeutic, food, household or other non-research use.
1.3 Manufacturer	Cytoskeleton, Inc., 1830 S. Acoma St., Denver, CO 80223, USA; Tel. +1 303-322-2254.
EU/German supplier	Tebu-bio GmbH germany@tebubio.com, (069) 801013-0
1.4 Emergency telephone	INFOTRAC (source MSDS): USA/Canada 1-800-535-5053; outside USA/Canada +1 352-323-3500 (collect calls accepted).

2. Hazards identification

2.1 Classification of the substance or mixture

The mixture is not classified as hazardous under Regulation (EC) No 1272/2008 (CLP).

2.2 Label elements	The product does not need to be labelled in accordance with EC directives or respective national laws.
2.3 Other hazards	The lyophilized powder may generate airborne dust causing mechanical irritation. PBT/vPvB assessment: no assessment data available. Endocrine-disrupting properties: no assessment data available. Nanoform: not identified in the source information.

3. Composition/information on ingredients

3.1.Mixture.

Component / Bestandteil	CAS	EC / EG	Content / Gehalt	CLP status / Status
Bovine cardiac actin protein / Actinprotein aus Rinderherz	None / keine	None / keine	>95%	Not classified / nicht eingestuft
Tris base / Tris-Base	77-86-1	Not listed / nicht gelistet	<1%	Not classified / nicht eingestuft
Dextran / Dextran	9004-54-0	Not listed / nicht gelistet	1%	Not classified / nicht eingestuft
Sucrose / Saccharose	57-50-1	200-334-9	5%	Not classified / nicht eingestuft
Calcium chloride dihydrate / Calciumchlorid-Dihydrat	10035-04-8	Not listed / nicht gelistet	<1%	Not classified / nicht eingestuft
Adenosine 5-triphosphate disodium salt / Adenosin-5-triphosphat-Dinatriumsalz	42373-41-1	Not listed / nicht gelistet	<1%	Not classified / nicht eingestuft

4. First-aid measures

4.1 Inhalation	Move to fresh air. If breathing is difficult or symptoms persist, seek medical advice. If not breathing, provide resuscitation by trained personnel and call emergency services.
Skin contact	Remove contaminated clothing. Wash skin thoroughly with soap and water. Seek medical advice if irritation persists.
Eye contact	Rinse cautiously with water for at least 15 minutes, removing contact lenses if easy. Seek medical advice if irritation persists.
Ingestion	Rinse mouth. Do not induce vomiting unless directed by medical personnel. Seek medical advice if unwell. Never give anything by mouth to an unconscious person.

4.2 Symptoms/effects	Dust may cause mechanical irritation of eyes, skin, nose and respiratory tract. No delayed effects are known from the available data.
4.3 Immediate care	If unconscious, call emergency services. Show this safety data sheet to the first responding physician. Treat symptomatically. No specific antidote identified.

5. Firefighting measures

5.1 Extinguishing media	Use water spray, alcohol-resistant foam, dry powder or carbon dioxide as appropriate for the surrounding fire. No unsuitable media identified.
5.2 Special hazards	Product is reported as not flammable or combustible. Thermal decomposition may produce irritating or harmful fumes; composition not determined.
5.3 Advice for firefighters	Wear self-contained breathing apparatus and protective clothing for surrounding fire. Avoid contact with skin and eyes.

6. Accidental release measures

6.1 Personal precautions	Restrict access. Avoid dust formation and inhalation. Wear gloves, eye protection and suitable protective clothing; use respiratory protection where ventilation is inadequate or dust is generated.
6.2 Environmental precautions	Prevent release to drains, surface water, groundwater and soil. Do not flush concentrated material to sewer.
6.3 Cleanup	For dry product, carefully sweep or vacuum with a HEPA-filtered unit without generating dust; place in a labelled closed container. For wetted material, absorb with inert material. Clean residue with water where permitted.
6.4 Reference	See Sections 8 and 13.

7. Handling and storage

7.1 Safe handling	Use with adequate ventilation. Avoid creating or breathing dust and avoid eye/skin contact. Keep away from food and drink. Wash hands after handling. Do not reuse the container.
7.2 Storage	Store tightly closed, dry/desiccated at 2-8 °C. Protect from contamination. Keep only in a suitably labelled container. Incompatible with strong oxidizing agents.
7.3 Specific end use	This product should only be used for applications described in Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters	No occupational exposure limit values exist.
8.2 Engineering controls	Use local exhaust or enclosure where dust may be generated. Provide eyewash access.
Eye/face protection	Safety glasses with side shields; tightly fitting goggles where dust exposure is possible (EN 166 or equivalent).
Hand protection	Protective gloves selected after workplace risk assessment. Confirm material and breakthrough time with the glove supplier (EN ISO 374 where applicable).
Skin/body protection	Laboratory coat or protective work clothing. Remove contaminated clothing and wash before reuse.
Respiratory protection	Normally not required with effective controls. If dust cannot be controlled, use a suitable particulate respirator selected under the workplace assessment (e.g., EN 149 P1/P2 as appropriate).
Environmental controls	Prevent uncontrolled environmental release.

9. Physical and chemical properties

9.1 Physical state	Solid, lyophilized powder
Color	No data available
Odor/odor threshold	No data available
Melting/freezing point	No data available
Boiling point/range	No data available

Flammability	Reported not flammable or combustible
Explosive limits	No data available
Flash point	No data available or not applicable
Auto-ignition temperature	Product is not reported as self-igniting
Decomposition temperature	No data available
pH	No data available
Kinematic viscosity	No data available or not applicable
Solubility	Fully miscible/soluble in water per source
Partition coefficient	No data available
Vapor pressure/density	Not applicable or no data
Relative density	No data available
Particle characteristics	No data available; lyophilized powder
9.2 Other information	No additional physical hazard or other safety-characteristic data are available.

10. Stability and reactivity

10.1 Reactivity	No specific test data available.
10.2 Chemical stability	Stable when stored under recommended storage conditions.
10.3 Hazardous reactions	No known hazardous reactions under recommended conditions; no test data available.
10.4 Conditions to avoid	Moisture, contamination, dust formation, repeated freeze/thaw cycles for frozen product, and conditions outside recommended storage.
10.5 Incompatible materials	Strong oxidizing agents.
10.6 Decomposition products	Not determined. Irritating or harmful fumes may form in a fire.

11. Toxicological information

11.1 Acute toxicity	No adequate mixture data available.
Skin corrosion/irritation	No adequate data. Dust may cause mechanical irritation.
Serious eye damage/irritation	No adequate data. Dust may cause mechanical irritation.
Respiratory/skin sensitization	No adequate mixture data available.
Mutagenicity	No adequate mixture data available.
Carcinogenicity	No adequate mixture data available.
Reproductive toxicity	No adequate mixture data available.
STOT single/repeated exposure	No data available.
Aspiration hazard	No data available.
Likely routes/symptoms	Inhalation of dust and contact with eyes or skin may cause mechanical irritation. Ingestion effects unknown.
11.2 Information on other hazards	No additional data available.

12. Ecological information

12.1 Toxicity	No ecological test data available for the mixture.
12.2 Persistence/degradability	No data available.
12.3 Bioaccumulative potential	No data available.
12.4 Mobility in soil	No data available.
12.5 PBT/vPvB assessment	No assessment data available.
12.6 Endocrine disruption	No assessment data available.
12.7 Other adverse effects	No data available. Avoid uncontrolled environmental release.

13. Disposal considerations

Dispose of product, solutions, absorbents and contaminated packaging through an authorized waste contractor in accordance with Directive 2008/98/EC, the German Circular Economy Act (KrWG), the Waste Catalogue Ordinance (AVV) and local requirements. Do not discharge to drains. The waste producer must assign the appropriate waste code based on actual use and contamination. Treat contaminated packaging as unused product unless fully decontaminated.

14. Transport information

14.1 UN number	Does not meet the criteria for classification as hazardous for transport.
14.2 UN proper shipping name	Not applicable.
14.3 Transport hazard class(es)	Not applicable.
14.4 Packing group	Not applicable.
14.5 Environmental hazards	Not identified as marine pollutant/environmentally hazardous for transport.
14.6 Special precautions	Protect from moisture and physical damage; avoid dust release.
14.7 Maritime transport in bulk	Not intended for bulk transport under IMO instruments.

15. Regulatory information

15.1 Regulations	Prepared in the structure of REACH Regulation (EC) No 1907/2006, Annex II, as amended by Commission Regulation (EU) 2020/878, and classified provisionally under CLP Regulation (EC) No 1272/2008. German national considerations include the Hazardous Substances Ordinance (GefStoffV) and TRGS 220. Not Classified.
15.2 Chemical safety assessment	No chemical safety assessment information was provided.

16. Other information

Revision scope: converted the 2018 MSDS into the REACH Annex II / Regulation (EU) 2020/878 subsection structure; removed US-only rating content from the main hazard presentation; added Germany/EU regulatory fields. No new toxicological or ecotoxicological test data were supplied.

Abbreviations: ADR, European road transport agreement; CLP, Classification, Labelling and Packaging Regulation; DNEL, derived no-effect level; IATA, International Air Transport Association; IMDG, International Maritime Dangerous Goods Code; PBT, persistent, bioaccumulative, and toxic; PNEC, predicted no-effect concentration; STOT SE, specific target organ toxicity single exposure; UFI, unique formula identifier; vPvB, very persistent and very bioaccumulative.

Sources: Cytoskeleton AD99 MSDS, revised 14 August 2017; Cytoskeleton AD99 product page; Regulation (EC) No 1907/2006 (REACH), Article 31 and Annex II; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 (CLP); German Hazardous Substances Ordinance (GefStoffV), section 5.

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. The above information is believed to be correct, be all inclusive and shall be used only as a guide. Cytoskeleton Inc. shall not be held liable for any damages resulting from contact with the above product.