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.
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

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Not a hazardous substance or mixture

2.2 Label elements	Not a hazardous substance or mixture.
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	CAS	EC	Content	CLP status
Bovine cardiac actin protein	None	None	>95%	Not classified
Tris base	77-86-1	Not listed	<1%	Not classified
Dextran	9004-54-0	Not listed	1%	Not classified
Sucrose	57-50-1	200-334-9	5%	Not classified
Calcium chloride dihydrate	10035-04-8	Not listed	<1%	Not classified
Adenosine 5-triphosphate disodium salt	42373-41-1	Not listed	<1%	Not classified

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

Contact a licensed professional waste disposal service to dispose of this material. Disposal of this product, solutions, and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers. Observe all federal, state, and local environmental regulations.

14. Transport information

General Information	This product is subject to the de minimis exceptions for dangerous goods/hazardous materials in accordance with the following regulations: IATA 2.6.10, ADR 3.5.1.4, AND U.S. DOT 49 CFR 173.4b.
DOT (US)	Does not meet the criteria for classification as hazardous for transport.
IMDG	Does not meet the criteria for classification as hazardous for transport.
IATA	Does not meet the criteria for classification as hazardous for transport.

15. Regulatory information

15.1 Regulations

SARA (Superfund Amendments and Reauthorization Act of 1986-USA)
Section 302/304 (40CFR355.30/40CFR355.40):

None of the ingredients in this mixture are listed.

SARA (Superfund Amendments and Reauthorization Act of 1986-USA)
Section 313:

This material does not contain any chemical components with the known CAS numbers that exceed the threshold (de minimis) reporting levels established by SARA Title III, Section 313.

State right to know: PA, MA, NJ, AND CA PROP. 65 COMPONENTS:

No components are subject to these states' right-to-know acts.

Canada regulatory information
WHMIS classification: None.

WGK (Water Danger/Protection)
None

Hazard statement(s)
H315 Causes skin irritation.
H319 Causes serious eye irritation.

16. Other information

Revision scope: converted the 2018 MSDS into the REACH Annex II / Regulation (EU) 2020/878 subsection structure. 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.