Safety Data Sheet
acc. to OSHA HCS

Printing date 12/04/2023 *Reviewed on 12/04/2023*

1 Identification

· **Product identifier**

· **Trade name: Adenine**

· **Article number:** 10739
· **CAS Number:**
73-24-5
· **EC number:**
200-796-1
· **Application of the substance / the mixture:** Laboratory chemicals

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SERVA Electrophoresis GmbH
Carl-Benz-Str. 7
D-69115 Heidelberg
Tel.: +49 6221 13840-0
FAX: +49 6221 13840-10
msds.info@serva.de

· **Information department:** Product Safety Department Tel.: +49 6221 13840-35
· **Emergency telephone number:**
Emergency medical information in case of poisoning
Poison Information Center Mainz-Tel: +49 (0) 6131 19240
(Advice in German and English)

2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS06

Acute Toxicity - Oral 3 H301 Toxic if swallowed.

· **Label elements**
· **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms:** GHS06
· **Signal word:** Danger
· **Hazard statements:**
Toxic if swallowed.
· **Precautionary statements**
Wash thoroughly after handling.
If swallowed: Immediately call a poison center/doctor.
Specific treatment (see on this label).
Rinse mouth.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 2
Fire = 0
Reactivity = 0

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· **HMIS-ratings (scale 0 - 4)**

Health = 2
Fire = 0
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment:**
· **PBT:** *PBT - Assessment not available.*
· **vPvB:** *vPvB - Assessment not available.*

3 Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description:**
73-24-5 Adenine
· **Identification number(s):**
· **EC number:** *200-796-1*
· **Description:**
· **Empirical formula:** $C_5H_5N_5$
· **MW:** *135.1*

4 First-aid measures

· **Description of first aid measures**
· **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation:** *Supply fresh air; consult doctor in case of complaints.*
· **After skin contact:**
Wash off immediately with soap and water and rinse thoroughly. In case of complaints, consult a doctor.
· **After eye contact:**
Rinse opened eye for several minutes with running water. Remove existing contact lenses, if possible, and continue rinsing. Consult an ophthalmologist immediately.
· **After swallowing:** *Rinse mouth immediately. Drink plenty of water and fresh air. Call a doctor immediately.*
· **Most important symptoms and effects, both acute and delayed** *No further relevant information available.*
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO_2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
In case of fire, the following can be released:
Nitrogen oxides (NOx)
Carbon monoxide and carbon dioxide
· **Advice for firefighters**
· **Protective equipment:** *Wear self-contained breathing apparatus.*

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6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
Ensure adequate ventilation
Avoid formation of dust.
· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up**
Dispose contaminated material as waste according to section 13.
Pick up mechanically.
· **Protective Action Criteria for Chemicals**
· **PAC-1:** Substance is not listed.
· **PAC-2:** Substance is not listed.
· **PAC-3:** Substance is not listed.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Precautions for safe handling:**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
· **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
· **Information about storage in one common storage facility:**
Do not store together with strong oxidizing agents.
· **Further information about storage conditions:**
Store container tightly closed and dry.
Store under lock and key and with access restricted to technical experts or their assistants only.
· **Specific end use(s):** No further relevant information available.

8 Exposure controls/personal protection

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:** Not required.
· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Additional information about design of technical systems:** No further data; see section 7.
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Store protective clothing separately.
Avoid contact with the eyes and skin.
Wash hands before breaks and at the end of work.
· **Breathing equipment:**
Short term filter device:
Filter P2
· **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves:**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material:**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**
Natural rubber, NR
Nitrile rubber, NBR

· **Eye protection:** *Safety glasses*

· **Body protection:** *Protective work clothing*

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information:**	
· **Color:**	*White*
· **Odor:**	*Odorless*
· **Odor threshold:**	*Not determined.*
· **Melting point/Melting range:**	*approx. 350°C (decomposition)*
· **Boiling point/Boiling range:**	*not applicable (decomposition)*
· **Flammability (solid, gaseous):**	*No information available*
· **Explosion limits:**	
· **Lower:**	*No information available*
· **Upper:**	*No information available*
· **Flash point:**	*No information available*
· **Decomposition temperature:**	*> 350 °C (> 662 °F)*
· **Viscosity:**	
· **Kinematic viscosity:**	*No information available*
· **Dynamic viscosity:**	*No information available*
· **Solubility in / Miscibility with:**	
· **Water at 20 °C (68 °F):**	*0.5 g/l*
· **Partition coefficient (n-octanol/water):**	*No information available*
· **Vapor pressure:**	*No information available*
· **Vapor pressure:**	
· **Density:**	*No information available*
· **Relative density:**	*No information available*
· **Other information**	*Further physicochemical data are not available.*
· **Appearance:**	
· **Form:**	*Powder*
· **Important information on protection of health and environment, and on safety:**	
· **Danger of explosion:**	*The product is not explosive, but the formation of explosive dust/air mixtures is possible.*
· **Molecular weight**	*135.1 g/mol*

10 Stability and reactivity

· **Reactivity:** *No further relevant information available.*

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· **Chemical stability:**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions:**
As the product is supplied it is not capable of dust explosion; however enrichment with fine dust causes risk of dust explosion.
· **Conditions to avoid:** High temperatures
· **Incompatible materials:**
Avoid contact with:
Strong oxidizers
Strong acids
· **Hazardous decomposition products:** In case of fire: see section 5

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:** Toxic if swallowed.

· **LD/LC50 values that are relevant for classification:**		
Oral	LD50	783 mg/kg (mouse) 227 mg/kg (rat)

· **Additional toxicological information:**

· **Carcinogenic categories**
· **IARC (International Agency for Research on Cancer)** Substance is not listed.
· **NTP (National Toxicology Program)** Substance is not listed.
· **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

12 Ecological information

· **Toxicity:**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability:** No further relevant information available.
· **Bioaccumulative potential:** No further relevant information available.
· **Mobility in soil:** No further relevant information available.
· **Results of PBT and vPvB assessment:**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects:**
· **Additional ecological information:**
· **General notes:**
Do not allow product to reach ground water, water course or sewage system.
Water hazard class 1 (Self-assessment): slightly hazardous for water

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:**
Uncleaned packaging must be disposed of in the same way as the product in accordance with official regulations.

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14 Transport information

· **UN-Number**	
· **DOT, ADR, IMDG, IATA**	UN2811
· **UN proper shipping name**	
· **DOT**	Toxic solids, organic, n.o.s. (Adenine)
· **ADR**	2811 TOXIC SOLID, ORGANIC, N.O.S. (Adenine)
· **IMDG, IATA**	TOXIC SOLID, ORGANIC, N.O.S. (Adenine)
· **Transport hazard class(es)**	
· **DOT**	

· **Class**	6.1 Toxic substances
· **Label**	6.1
· **ADR, IMDG, IATA**	

· **Class:**	6.1 Toxic substances
· **Label:**	6.1
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	III
· **Environmental hazards**	
· **Marine pollutant:**	No
· **Special precautions for user**	Warning: Toxic substances
· **Hazard identification number (Kemler code):**	60
· **EMS Number:**	F-A,S-A
· **Stowage Category**	A
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· **IMDG**	
· **Limited quantities (LQ)**	5 kg
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· **UN "Model Regulation":**	UN 2811 TOXIC SOLID, ORGANIC, N.O.S. (ADENINE), 6.1, III

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.

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· **Section 355 (extremely hazardous substances):** Substance is not listed.
· **Section 313 (Specific toxic chemical listings):** Substance is not listed.
· **TSCA (Toxic Substances Control Act):** ACTIVE
· **Hazardous Air Pollutants** Substance is not listed.
· **Proposition 65** Substance is not listed.
· **Chemicals known to cause cancer:** Substance is not listed.
· **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.
· **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.
· **Chemicals known to cause developmental toxicity:** Substance is not listed.

· **Cancerogenity categories**
· **EPA (Environmental Protection Agency)** Substance is not listed.
· **TLV (Threshold Limit Value)** Substance is not listed.
· **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
· **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** GHS06
· **Signal word** Danger
· **Hazard statements**
Toxic if swallowed.
· **Precautionary statements**
Wash thoroughly after handling.
If swallowed: Immediately call a poison center/doctor.
Specific treatment (see on this label).
Rinse mouth.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

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.

· **Department issuing SDS:** Product Safety Department
· **Contact:** +49 6221 13840-35
· **Date of preparation / last revision** 12/04/2023
· **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
PBT: persistent, bioaccumulative, toxic substance (REACH)
vPvB: very persistent, very bioaccumulative substance (REACH)
REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
CLP: Regulation on classification, labelling and packaging of substances and mixtures
bw: body weight
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Toxicity - Oral 3: Acute toxicity – Category 3