1. Identification of the substance/preparation and of the company

Product identifier

Product Name: **Collagenase Type IV** Powder (**EC 3.4.24.3**)

Catalogue Number: C4310
CAS Number: 9001-12-1
EC Number: 232-582-9
REACH-No.: A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline

Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.
Application of the substance/the preparation
Laboratory biochemical
Cell culture applications

Details of the supplier of the safety data sheet
Manufacturer /Supplier:
Genaxxon bioscience GmbH, Söflinger Str. 70, 89077 Ulm/Germany.
Tel.: +49 (0)731 3608 123, info@genaxxon.com

Further information available from: General Management
Emergency telephone number:
Poison Information Centre Mainz, Germany, Tel.: +49 (0)6131 19240 / 24 h

NOTE: If this product is a kit or supplied with more than one material, please refer to the MSDS for each component for hazard information.

Product Use:
This products are for laboratory research use only and are not intended for human or animal diagnostics, therapeutics or other clinical uses.

2. Hazardous identification

Classification of the substance/preparation/mixture
Classification according to Regulation (EC) No 1272/2008

Eye Irrit. 2	H319	Causes serious eye irritation.
Resp. Sens. 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Classification according to European Directive 67/548/EEC or Directive 1999/45/EC.

Label elements
Labelling according to Regulation (EC) No 1272/2008
The product is classified and labeled according to the CLP regulation.
Pictogram(s)

GHS08

Signal word: Danger

Hazard determining components of labelling:
Collagenase
Hazard statement(s)

H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statements

P261	Âvoid breathing dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	Wear respiratory protection.
P304-P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Other hazards
Result of PBT and vPvB assessment
PBT: not applicable
vPvB: not applicable

3. Composition/information on ingredients

Chemical characterization: Substances

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Synonyms: Clostridiopeptidase A

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Classification	Concentration
Collagenase CAS-No.: 9001-12-1 EINECS: 232-582-9 Index-No.: 647-014-00-9	Eye Irrit. 2; Resp. Sens. 1; STOT SE 3; H334	<=100%

Additional information: For the wording of the listed risk phrases refer to section 16.

4. First-aid measures

Description of first aid measures
General information: Consult a physician. Show this safety data sheet to the doctor in attendance.
If inhaled:
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.
If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
In case of skin contact:
Wash off with plenty of water.
If skin irritation continues, consult a doctor.
In case of eye contact:
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
If swallowed:
Rinse out mouth.
If symptoms persist, consult a doctor.
Information for doctor:
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:
Water Spray. Carbon Dioxide. Dry chemical powder, or appropriate foam. 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 a fire, the following can be released:
Carbon oxides (CO, CO2)
Nitrogen oxides (NOx),
Advice for fire fighters:
Protective equipment:
Mouth respiratory protective device.
Wear self-contained respiratory protective device.
Additional information:
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Contain escaping vapours with water.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Avoid formation of dust.
Do not inhale dust.
Avoid substance contact.
Ensure adequate ventilation.
Use respiratory protective device against the effects of fumes/dust/aerosol.
Environmental precautions: Do not allow product to enter sewage system, surface or ground water.
Discharge into the environment must be avoided.
Methods and materials for containment and cleaning up:
Soak with inert absorbent material and dispose of as hazardous waste. Keep suitable, closed containers for disposal.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Clean up affected area.
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.

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Additional information: None

7. Handling and storage

Handling
Precautions for safe handling:
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Avoid contact with skin and eyes.
Prevent formation of dust.
Any unavoidable deposit of dust must be regularly removed.
Information about fire – and explosion protection:
Keep respiratory protective device available.

Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: Keep receptacles tightly sealed.
Store only in the original receptacle.
Containers which are opened must be carefully resealed.
Information about storage in one common storage facility: No special measures required.
Further information about storage conditions:
Keep container sealed.
Recommended storage temperature: +2°C - +8°C
Storage class: 10-13
Specific end use(s): No further relevant information available.

8. Exposure controls/personal protection

Additional information about design of technical facilities: No further data; see item 7.

Control parameters
Ingredients with limit values that require monitoring at the workplace: not required.
Additional information: The lists valid during the making were used as basis.

Exposure controls:
Personal protective equipment:
General protective and hygienic measures:
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Avoid contact with eyes and skin.
Store protective clothing separately.
Vacuum clean contaminated clothing. Do not blow or brush off contamination.
Immediately remove all soiled and contaminated clothing.
Respiratory protection:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
Filter P1 (EN 143).

Protection of hands:

Protective gloves (EN 374)

The glove material has to be impermeable and resist ant to the product/ the substance/ the preparation.
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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
For the permanent contact gloves made of the following materials are suitable:
Nitrile rubber, NBR

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Recommended thickness of the material: ≥0.11 mm
Value for permeation: Level: >480 min.
As protection from splashes gloves made of the following materials are suitable:
Nitrile rubber, NBR
Recommended thickness of the material: ≥0.11 mm
Value for the permeation: Level ≥480 min.
Eye/face protection: Safety glasses

Safety glasses (EN 166)

Body protection:
Use protective suit.
Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

9. Physical and chemical properties

Information on basic physical and chemical properties
General Information
Appearance

Form:	Powder
Colour:	brownish to brown powder
Odour:	not characteristic
pH value at 20°C:	not determined
Change in conditions	
Melting point/Melting range:	Undetermined
Boiling point/Boiling range:	Undetermined
Flash point:	Not applicable
Flammability (solid, gaseous):	Product is not flammable
Decomposition temperature:	Not determined
Self-ignition:	Product is not self-igniting
Danger of explosion:	Product does not present an explosion hazard
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapour pressure:	Not applicable
Density (20°C):	Not determined
Bulk density at 20°C:	Not determined
Solubility in / Miscibility with (water, 20°C):	Soluble
Partition coefficient (n-octanol/water):	Not determined
Viscosity:	
Dynamic:	Not applicable
Kinematic:	Not applicable
Solvent content:	
Organic solvents:	0.0%
VOC (EC)	0.00%
Other information:	No further relevant information available.

10. Stability and reactivity

Reactivity
Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
Possibility of hazardous reactions: No dangerous reactions known.
Conditions to avoid: No further relevant information available.
Incompatible materials: No further relevant information available.

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Hazardous decomposition products: In the event of fire: See chapter 5 of this data sheet.

11. Toxicological information

Information on toxicological effects
Acute toxicity:

LD50/LC50 values relevant for classification
Quantitative data on the toxicological effect of this product are not available.

Primary irritant effect
Skin corrosion/irritation: No further relevant data available.
Serious eye damage/eye irritation: No further relevant data available.
Respiratory or skin sensitization: Irritating to respiratory system..
CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):
Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenity: 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: Based on available data, the classification criteria are not met.
Additional toxicological information: -
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
The product should be treated with usual precautions while handling chemicals.

12. Ecological Information

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

13. Disposal considerations

Waste treatment methods
Recommendation:
Chemicals must be disposed of in compliance with the respective national regulations. Must not be disposed together with household garbage. Do not allow product to reach sewage system. Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.
Uncleaned packaging:
Recommendation: Disposal must be made according to official regulations. Packagings that may not be cleansed are to be disposed of in the same manner as the product.
Recommended cleaning agents: Water, if necessary together with cleansing agents.

14. Transport information

UN-Number
ADR, ADN, IMDG, IATA Void

UN proper shipping name
ADR; ADN, IMDG, IATA: Void

Transport hazard class(es):
ADR, ADN, IMDG, IATA class: Void

Packing group:
ADR, IMDG, IATA Void

Environmental hazards / Marine pollutant: No

Special precautions for user: Not applicable

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Transport in bulk according to Annex II of MARPOL 73/78 and the IBC-Code	Not applicable
Transport/Additional information:	Not dangerous according to the above specifications
UN „Model Regulation“:	Void

15. Regulatory information

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

Directive 2012/18/EU
Named dangerous substances – ANNEX I: Substance is not listed.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16. Other information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Genaxxon bioscience GmbH, shall not be held liable for any damage resulting from handling or from contact with the above product.

Disclaimer
This product is for R&D use only. Not for drug, household or other uses.

Abbreviations and Acronymes:

ACAO-TI: Technical Instructions by the “International Civil Aviation Organization” (ICAO)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS: Chemical Abstracts Service (division of the American Chemical Society)
EINECS: European Inventory of Existing Commercial Chemical Substances
GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)
GHS: Globally Harmonized System of Classification and labeling of Chemicals
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the “International Air Transport Association” (IATA)
ICAO: International Civil Aviation Organization
IMDG: International Maritime code for Dangerous Goods
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative