

Safety Data Sheet

According to Regulation (EC)
No. 1907/2006 (REACH)

Cellulase - A01776

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name: Cellulase
Product No.: A01776
SDS No.: 906015
Material No.: 025393
CAS No.: Not applicable.
EC No.: Not applicable.
Index No.: Not applicable.

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

Identified use(s): Enzymatic mixture for use in educational science experiments.
Professional use only.
Uses advised against: Follow supplier's recommendations on correct use of the product.

1.3 Details of the supplier of the safety data sheet

Supplier: Philip Harris Manufacturing Ltd.
Unit 72, Gazelle Road
Weston Industrial Estate
Weston-super-Mare
BS24 9BJ
Telephone: +44 (0)1934 413 606
Fax: +44 (0)1934 626 421
E-mail: sdsinfo@philipharrismanufacturing.co.uk

1.4 Emergency telephone number

In case of emergency, call: +44 (0)1934 413 606
Monday – Thursday: 08:30 – 17:00 UK time
Friday: 08:30 – 13:00 UK time

SECTION 2: Hazard Identification

2.1 Classification of the substance or mixture

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

Resp. Sens. 1; H334

2.1.2. Classification according to Directive 67/548/EEC & Directive 1999/45/EC

Xn; R42

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2.2 Label elements

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

Hazard pictogram(s):



Signal Word:

Danger.

Hazard Statement(s):

H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary Statement(s):

P261: Avoid breathing dust.
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.
P501: Dispose of contents/container to hazardous waste collection point for disposal in accordance with local, regional, national or international regulations.

Supplemental Hazard information (EU):

None.

2.3 Other hazards

The product does not meet the criteria for PBT or vPvB substances.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical name	% w/w	CAS No.	EC No.	Index No.	Classification (Regulation (EC) No. 1272/2008 (CLP))	Classification (Directive 67/548/EEC)
Cellulase	1-10	9012-54-8	232-734-4	647-002-00-3	Resp. Sens . 1; H334	Xn; R42

See Section 16 for full description of R phrases and H statements.

SECTION 4: First Aid Measures

4.1 Description of first aid measures

INHALATION: Remove person to fresh air and keep in a position comfortable for breathing. Keep warm and at rest. If experiencing respiratory symptoms, obtain immediate medical attention.

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SKIN CONTACT: Take off immediately all contaminated clothing. Rinse skin with plenty of water. If irritation develops and persists, get medical attention. Contaminated clothing should be washed before reuse.

EYE CONTACT: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing, making sure to rinse under eyelids. If eye irritation persists, get medical attention.

INGESTION: Do not induce vomiting. Provided the patient is conscious, rinse mouth out with water and give 200-300 mL of water to drink. Never give anything by mouth to an unconscious person. If symptoms develop, get medical attention.

4.2 Most important symptoms and effects, both acute and delayed:

Inhalation may cause allergy or asthma symptoms or breathing difficulties if inhaled. Shortness of breath, wheezing and coughing. The effect of inhalation may be delayed. Skin contact may cause slight irritation. Eye contact may cause slight irritation and redness. Ingestion may cause gastrointestinal irritation.

4.3 Indication of any immediate medical attention and special treatments needed:

In case of accident or if you feel unwell, seek medical advice immediately. Show this Safety Data Sheet to the doctor in attendance. If breathing is laboured, oxygen should be administered by qualified personnel.

SECTION 5: Fire-fighting Measures

5.1 Extinguishing Media

Suitable extinguishing media: Use extinguishant suitable for surrounding fire. Water spray, alcohol-resistant foam, CO₂ or dry powder.

Unsuitable extinguishing media: None identified.

5.2 Special hazards arising from the substance or mixture

Containers exposed to fire may burst due to a build-up of pressure.

May cause allergy or asthma symptoms or breathing difficulties if inhaled. Combustion may liberate toxic fumes: Carbon monoxide, carbon dioxide, nitrogen oxides, sulphur oxides.

5.3 Advice for fire-fighters

A self-contained breathing apparatus and suitable protective clothing should be worn in fire conditions. Keep fire exposed containers cool by spraying with water. Do not allow to enter drains, sewers or watercourses.

SECTION 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

Provide adequate ventilation to minimise exposure to dust. Avoid formation of dust clouds. Do not breathe dust. Avoid contact with skin, eyes or clothing. Wear suitable personal protective equipment. Wear appropriate respirator when ventilation is inadequate (See Section 8).

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6.1.2 For emergency responders

Keep unnecessary personnel away. Wear suitable protective clothing (See Section 8). Take off contaminated clothing and wash it before reuse.

6.2 Environmental precautions

Do not allow to enter watercourses or surface water drainage (storm drains). Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body.

6.3 Methods and materials for containment and cleaning up

6.3.1 For containment

Avoid generation of dust clouds.

6.3.2 For cleaning up

Collect spilled material mechanically, preferably using a vacuum cleaner fitted with a high efficiency filter. Dispose of contaminated material as waste according to Section 13. Wash spill area with large amounts of water (discharge to foul sewer only).

6.3.3 Other advice

None.

6.4 Reference to other sections

See Section 8 for personal protective equipment. See Section 13 for waste disposal.

SECTION 7: Handling and Storage

7.1 Precautions for safe handling

Provide adequate ventilation to minimise exposure to dust. Avoid formation of dust clouds. Do not breathe dust. Avoid contact with skin, eyes or clothing. Wear suitable personal protective equipment (See Section 8).

Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Take off contaminated clothing and wash it before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a well-ventilated place. Keep cool. Storage in a refrigerator will prolong useful life. Protect from direct sunlight.

Keep away from: strong oxidising agents.

7.3 Specific end use(s)

Enzymatic mixture for use in educational science experiments. Professional use only.

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SECTION 8: Exposure Controls/Personal Protection

8.1 Control parameters

Workplace exposure limits

Source: EH40/2005, 2nd Ed., 2011.

No occupational exposure limits assigned.

DMELs (Workers)

Substance	Route	Acute/short-term exposure		Long-term exposure	
		Systemic effects	Local effects	Systemic effects	Local effects
Cellulase	Inhalation	-	-	0.00006 mg/m ³	0.00006 mg/m ³
	Dermal	-	-	-	-

PNECs

Substance	Aqua (fresh water)	Aqua (marine water)	Aqua (intermittent releases)	Sewage Treatment Plants	Sediment (fresh water)	Sediment (marine water)	Soil	Oral
Cellulase	0.0237 mg/L	0.00237 mg/L	0.237 mg/L	65 mg/L	Exposure not expected	Exposure not expected	-	No bioaccumulation potential.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Provide adequate ventilation to minimise exposure to dust.

8.2.2 Personal protection

Eye protection:

If eye-protection is not integral to the respirator being worn, wear goggles or safety glasses with side shields giving complete protection to eyes (EN 166).

Skin protection:

Hand protection:

Chemical-resistant gloves conforming (EN 374). Nitrile rubber, butyl rubber, natural rubber (latex) and polyvinyl chloride are recommended materials. Contact glove supplier to confirm suitable glove material, thickness and breakthrough times.

Other:

Long sleeve protective clothing.

Respiratory protection:

If case of insufficient ventilation, wear a respirator (EN 140) with a P3 particle filter or better (EN 143).

Thermal hazards:

Not applicable.

8.2.3 Environmental exposure controls

Inform environmental manager of all incidents involving this product.

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SECTION 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance:	Powder.
Odour:	Characteristic.
Odour threshold:	Not available.
pH:	Not available.
Melting/freezing point:	Not available.
Initial boiling point and boiling range:	Not available.
Flash point:	Not available.
Evaporation rate:	Not available.
Flammability (solid; gas):	Not available.
Upper/lower flammability or explosive limits:	Not available.
Vapour pressure:	Not available.
Vapour density:	Not available.
Relative density:	Not available. Cellulose: 1.33 – 14.2 (estimated) (water = 1)
Solubility(ies):	Soluble in water. Cellulose: 1 – 100 g/L
Partition coefficient: n-octanol/water:	Not available. Cellulose: Log Pow = -2.95 – -3.1 (estimated)
Auto-ignition temperature:	Not available.
Decomposition temperature:	Not available.
Viscosity:	Not applicable.
Explosive properties:	Not explosive.
Oxidising properties:	Not oxidising.

9.2 Other information

None known.

SECTION 10: Stability and Reactivity

10.1	Reactivity	Reacts with oxidising agents.
10.2	Chemical stability	Stable under normal conditions.
10.3	Possibility of hazardous reactions	No hazardous reactions expected during normal use.
10.4	Conditions to avoid	Avoid extreme temperatures. Storage in a refrigerator will prolong useful life. Protect from direct sunlight.
10.5	Incompatible materials	Strong oxidising agents.

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10.6 Hazardous decomposition products Combustion may liberate toxic fumes: Carbon monoxide, carbon dioxide, nitrogen oxides, sulphur oxides.

SECTION 11: Toxicological Information

11.1 Information on toxicological effects

Acute toxicity	Not classified. May cause discomfort if swallowed. No data are available for the mixture. The following data are for the ingredients: Cellulase: LD ₅₀ (oral/rat): > 2,880 mg/kg LC ₅₀ (inhalation/rat/4 h): > 4.86 mg/L air (analytical)
Skin corrosion/irritation	May cause slight skin irritation.
Serious eye damage/irritation	May cause slight eye irritation.
Skin sensitisation	Not classified. The product does not contain substances classified as skin sensitisers above the classification thresholds.
Respiratory sensitisation	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Germ cell mutagenicity	Not classified. The product does not contain substances classified as mutagenic above the classification thresholds.
Carcinogenicity	Not classified. The product does not contain substances classified as carcinogenic above the classification thresholds.
Reproductive toxicity	Not classified. The product does not contain substances classified as toxic to reproduction above the classification thresholds.
Specific Target Organ Toxicity – single exposure	Not classified. The product does not contain substances classified for specific target organ toxicity following a single exposure above the classification thresholds.
Specific Target Organ Toxicity – repeated exposure	Not classified. The product does not contain substances classified for specific target organ toxicity following repeated exposure above the classification thresholds.
Aspiration hazard	Not classified. Based on available data, the classification criteria are not met.
Information on likely routes of exposure	
Inhalation	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin contact	May cause slight skin irritation.
Eye contact	May cause slight eye irritation.

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Ingestion

May cause gastrointestinal irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation may cause allergy or asthma symptoms or breathing difficulties if inhaled. Shortness of breath, wheezing and coughing. The effect of inhalation may be delayed. Skin contact may cause slight irritation. Eye contact may cause slight irritation and redness. Ingestion may cause gastrointestinal irritation.

Mixture versus substance Information

No data available.

Other information

None.

SECTION 12: Ecological Information

12.1 Toxicity

Not classified.

No data are available for the mixture. The following data are for the ingredients:

Cellulase:

LC₅₀ (*Oncorhynchus mykiss*): > 52.1 mg/L active enzyme protein, 96h

NOEC (*Oncorhynchus mykiss*): 23.7 mg/L active enzyme protein, 96h

EC₅₀ (*Daphnia magna*): > 52.1 mg/L active enzyme protein, 48 h

NOEC (*Daphnia magna*): ≥ 52.1 mg/L active enzyme protein, 48 h

EC₅₀ (*Desmodesmus subspicatus*): ≥ 52.1 mg/L active enzyme protein, 72 h (growth rate)

EC₅₀ (*Desmodesmus subspicatus*): ≥ 52.1 mg/L active enzyme protein, 72 h (biomass)

NOEC (*Desmodesmus subspicatus*): ≥ 52.1 mg/L active enzyme protein, 72 h (yield)

12.2 Persistence and degradability

Cellulase:
Readily biodegradable.

12.3 Bioaccumulative potential

No potential to bioaccumulate.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

The product does not contain substances assessed to be PBT or vPvB.

12.6 Other adverse effects

None known.

SECTION 13: Disposal Considerations

13.1 Waste treatment methods

To be disposed of as hazardous waste. Disposal should be in accordance with local, state or national legislation.

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SECTION 14: Transport Information

ADR

14.1	UN Number	Not classified.
14.2	UN Proper shipping name	-
14.3	Transport hazard class(es)	-
14.4	Packing group	-
14.5	Environmental hazards	-
14.6	Special precautions for the user	-

ADN

14.1	UN Number	Not classified.
14.2	UN Proper shipping name	-
14.3	Transport hazard class(es)	-
14.4	Packing group	-
14.5	Environmental hazards	-
14.6	Special precautions for the user	-

RID

14.1	UN Number	Not classified.
14.2	UN Proper shipping name	-
14.3	Transport hazard class(es)	-
14.4	Packing group	-
14.5	Environmental hazards	-
14.6	Special precautions for the user	-

IATA/ICAO

14.1	UN Number	Not classified.
14.2	UN Proper shipping name	-
14.3	Transport hazard class(es)	-
14.4	Packing group	-
14.5	Environmental hazards	-
14.6	Special precautions for the user	-

IMDG

14.1	UN Number	Not classified.
14.2	UN Proper shipping name	-
14.3	Transport hazard class(es)	-
14.4	Packing group	-
14.5	Environmental hazards	-
14.6	Special precautions for the user	-
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code	The product is not intended to be transported in bulk.

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SECTION 15: Regulatory Information

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

This Safety Data Sheet was prepared in accordance with EC Regulation (EC) No. 1907/2006 as amended. The product has been classified in accordance with Regulation (EC) No. 1272/2008 (CLP), Directive 67/548/EEC & Directive 1999/45/EC.

15.2 Chemical Safety Assessment

A chemical safety assessment has not been carried out.

SECTION 16: Other Information

Full text of relevant R-phrases and/or H-statements:

Hazard Statement(s):	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Supplemental Hazard information (EU):	None.
Risk phrase(s):	R42: May cause sensitisation by inhalation.

Abbreviations:

CAS:	Chemical Abstracts Service;
DMEL:	Derived Minimal Effect Level
DNEL:	Derived No Effect Level
EINECS:	European Inventory of Existing Commercial Chemical Substances
EC ₅₀ :	Effective Concentration 50%
EL ₅₀ :	Effective Loading rate 50%
EbC ₅₀ :	Concentration at which 50% reduction in biomass is observed
ErC ₅₀ :	Concentration at which 50% reduction in growth rate is observed
IC ₅₀ :	Inhibitory Concentration 50%
LC ₅₀ :	Lethal Concentration 50%
LD ₅₀ :	Lethal Dose 50%
LL ₅₀ :	Lethal Loading rate 50%
LCLo:	Lowest lethal concentration
LOEL:	Lowest Observed Effect Level
NOEC:	No Observed Effect Concentration
NOEL:	No Observed Effect Level
PBT:	Persistent, Bioaccumulative and Toxic
PNEC:	Predicted No Effect Concentration
vPvB:	Very Persistent and Very Bioaccumulative

References:

Supplier's Safety Data Sheets for ingredients
ECHA disseminated REACH dossiers
ECHA Classification & Labelling Inventory
Approved Classification and Labelling Guide (Sixth edition)
The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (CHIP)

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Regulation (EC) No. 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP)

Disclaimer:

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