

Section 1: Identification of the substance/mixture and of the company

1.1 Product Identifier

Product form: Liquid
 Trade name: α-Amylase (Thermostable) Concentrate
 Synonyms: N/A
 Catalog Number: TDF80 (20ml) / TDF81 (100ml)
 Appearance: Product is provided in a plastic container

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

Relevant identified uses: Industrial
 For professional use only
 Use as laboratory reagent
 Uses advised against: No additional information available

1.3 Details of the supplier of the Material Safety Data Sheet


Company Name: ANKOM Technology
 Address: 2052 O'Neil Rd.
 Macedon, NY USA 14502
 E-mail: service@ankom.com
 Emergency Phone: (315) 986-3857 8am-5pm EST

Section 2: Hazards Identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]: Resp. Sens. 1 H334 (for full text of H-phrases see section 16)
 Classification according to Directive 67/548/EEC or 1999/45/EC: Xn; R42 (for full text of R-phrases see section 16)
 Adverse physicochemical, human health and environmental effects: No additional information available

2.2 Label elements according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP): 
 GHS08
 Signal word (CLP): Danger
 Hazardous ingredients: alpha-amylase
 Hazard statements (CLP): H334 – May cause allergy or asthma symptoms or breathing difficulties if inhaled
 Precautionary statements (CLP): P261 – Avoid breathing spray
 P285 – In case of inadequate ventilation wear respiratory protection
 P304+P341 – If INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing
 P342+P311 – If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
 P501A – Dispose of this material and its container at a hazardous or special waste collection point

2.3 Other hazards

No additional information available

Section 3: Composition / Information on Ingredients (for full text of R, H, and EUH-phrases see section 16)

3.1 Substances

Not applicable

3.2 Mixture

Name	Product Identifier	%	Classification
Alpha-amylase	CAS #: 9000-90-2 EC #: 232-565-6 EC Index #: 647-015-00-4	20-30	Directive 67/548/EEC: Xn; R42 Regulation (EC) No. 1272/2008 [CLP]: Resp. Sens. 1, H334

For full text of R-, H-, and EUH-phrases, see section 16.

Section 4: First Aid Measures

4.1 Descriptions of first aid measures

First aid measures general:	Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.
First aid measures after Inhalation:	Assure fresh air breathing. Allow the victim to rest. Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
First aid measures after skin Contact:	Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.
First aid measures after eye Contact:	Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing and immediately call a POISON CENTER or doctor/physician.
First aid measures after ingestion:	Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms/injuries:	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
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4.3 Indication of any immediate medical attention and special treatment needed

No additional information available

Section 5: Fire Fighting Measures

5.1 Extinguishing media

Suitable extinguishing Media:	Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing Media:	Do NOT use a heavy water stream.

5.2 Special hazards arising from the substance or mixture

Reactivity:	Thermal decomposition generates: Corrosive vapors.
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5.3 Advice for firefighters

Firefighting instructions:	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid fire-fighting water when entering the environment.
Protection during firefighting:	Do not enter fire area without proper protective equipment, including respiratory protection.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

Emergency procedures:	Evacuate unnecessary personnel.
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6.1.2 For emergency responders

Protective equipment:	Equip cleanup crew with proper protection.
Emergency procedures:	Ventilate area.

6.2 Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up:	Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.
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6.4 Reference to other sections

See Heading 8: Exposure controls/personal protection.

Section 7: Handling and Storage

7.1 Precautions for safe handling

Precautions for safe handling:	Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and when leaving work. Provide good ventilation in process areas to prevent formation of vapor. Do not breathe vapors. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
Hygiene measures:	After handling, wash hands and other exposed areas thoroughly with mild soap and water before eating, drinking, or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures:	Comply with applicable regulations.
Storage conditions:	Keep only in the original container in a cool, well ventilated place away from direct sunlight. Keep container closed when not in use.
Incompatible materials:	Sources of ignition. Direct sunlight.

7.3 Specific end use(s)

No additional information available

Section 8: Exposure Controls / Personal Protection

8.1 Control parameters

No additional information available

8.2 Exposure controls

Personal protective equipment:	Avoid all unnecessary exposure.
Hand protection:	Wear protective gloves.
Eye protection:	Wear chemical goggles or face shield.
Skin and body protection:	Wear suitable protective clothing.
Respiratory protection:	Wear appropriate mask.
Other information:	Do NOT eat, drink, or smoke when handling this material.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state:	Liquid	Flammability (solid, gas):	No data available
Color:	Colorless	Vapor Pressure:	No data available
Odor:	Characteristic	Relative vapor density at 20°C:	No data available
Odor Threshold:	No data available	Relative Density:	No data available
pH:	No data available	Solubility:	No data available
Relative evaporation rate (butylacetate=1):	No data available	Log Pow:	No data available
Melting point:	No data available	Log Kow:	No data available
Freezing point:	No data available	Viscosity, kinematic:	No data available
Boiling point:	No data available	Viscosity, dynamic:	No data available
Flash point:	No data available	Explosive properties:	No data available
Self-ignition temperature:	No data available	Oxidizing properties:	No data available
Decomposition temperature:	No data available	Explosive limits:	No data available

9.2 Other information

No additional information available

Section 10: Stability and Reactivity

10.1 Reactivity

Thermal decomposition generates: Corrosive vapors.

10.2 Chemical stability

Not established.

10.3 Possibility of hazardous reactions

Not established.

10.4 Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5 Incompatible materials

Strong bases.

10.6 Hazardous decomposition products

Fume. Carbon monoxide. Carbon dioxide. Thermal decomposition generates: Corrosive vapors.

Section 11: Toxicological Information

11.1 Information on toxicological effects

Acute toxicity:	Not classified.
Alpha-amylase (9000-90-2)	LD50 oral rat: > 7500 mg/kg (Rat)
Skin corrosion/irritation:	Not classified. Causes severe skin burns and eye damage.
Serious eye damage/irritation:	Not classified. Causes severe skin burns and eye damage.
Respiratory or skin sensitization:	May cause allergy or asthma symptoms or breathing difficulties if inhaled. Based on available data, the classification criteria are not met.
Germ cell mutagenicity:	Not classified. Based on available data, the classification criteria are not met.
Carcinogenicity:	Not classified. Based on available data, the classification criteria are not met.
Reproductive toxicity:	Not classified. Suspected of damaging fertility or the unborn child.
Specific target organ toxicity (single exposure)	Not classified. Based on available data, the classification criteria are not met.
Specific target organ toxicity (repeated exposure)	Not classified. Based on available data, the classification criteria are not met.
Aspiration hazard:	Not classified. Based on available data, the classification criteria are not met.
Potential adverse human health effects and symptoms:	Based on available data, the classification criteria are not met.

Section 12: Ecological Information

12.1 Toxicity

Alpha-amylase (9000-90-2)	LC50 fish 1: > 100 mg/l (Pisces; SOLUTION < 50%)
	EC50 Daphnia 1: > 100 mg/l (Daphnia sp.; SOLUTION < 50%)

12.2 Persistence and degradability

TDF80 / TDF81:	Not established
Alpha-amylase (9000-90-2):	Readily biodegradable in water

12.3 Bioaccumulative potential

TDF80 / TDF81:	Not established
Alpha-amylase (9000-90-2):	Bioaccumulation unlikely

12.4 Mobility in soil

No additional information available

12.5 Results of PBT and vPvB assessment

No additional information available

12.6 Other adverse effects

Other information:	Avoid release to the environment
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Section 13: Disposal Considerations

13.1 Waste treatment methods

Waste disposal recommendations:	Dispose in a safe manner in accordance with local/national regulations.
Ecology – waste materials:	Avoid release to the environment.

Section 14: Transport Information (in accordance with ADR / RID / ADNR / IMDG / ICAO / IATA)

14.1 UN number

No dangerous goods with respect to transport regulations

14.2 UN proper shipping name

Not applicable

14.3 Transportation hazard class(es)

Not applicable

14.4 Packing group

Not applicable

14.5 Environmental hazards

Other information: No supplementary information available.

14.6 Special precautions for user
14.6.1 Overland transport

No additional information available

14.6.2 Transport by sea

No additional information available

14.6.3 Air transport

No additional information available

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Section 15: Regulatory Information

15.1 Safety, health, and environmental regulations/legislation specific to the substance or mixture
15.1.1 EU-Regulations

No REACH Annex XVII restrictions
Contains no REACH candidate substance

15.1.2 National regulations

No additional information available

15.2 Chemical safety assessment

No chemical safety assessment has been carried out.

Section 16: Other Information

Indication of changes:

Revision: See document footer for version information.

Data sources: REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling, and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No. 1907/2006.

Other information: None.

16.1 Full text of R, H, and EUH-phrases

Resp. Sens. 1: Sensitization – Respiratory, Category 1

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

R42: May cause sensitization by inhalation

Xn: Harmful

SDS EU (REACH Annex II)

Information in this document is based on our current knowledge and is intended to describe the product for the purposes of health, safety, and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.