

## SAFETY DATA SHEET

Revision date: 2024/04/18

Compliant with 29 CFR §1910.1200 HCS 2012

Compliant with HPR WHMIS 2015

# Alcalase® 2.5 L

## 1. PRODUCT AND COMPANY IDENTIFICATION

|                          |                       |
|--------------------------|-----------------------|
| <b>Product Name</b>      | Alcalase® 2.5 L       |
| <b>Chemical Name</b>     | Enzyme preparation    |
| <b>Declared activity</b> | Protease (Subtilisin) |

|                                         |                                                                                                                            |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>Use of the substance/preparation</b> | Novozymes' enzyme preparations are biocatalysts used in a variety of industrial processes and in certain consumer products |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------|

### Supplier's details

Novozymes North America, Inc.  
77 Perry Chapel Church Rd., Box 576  
Franklinton, NC 27525  
E-mail: [SafetyDataSheet@novozymes.com](mailto:SafetyDataSheet@novozymes.com)  
[www.novozymes.com](http://www.novozymes.com)

### Information Telephone Number

1-919-494-3000, 8 am - 4:30 pm EST M-F

### Emergency Telephone Number

1-800-424-9300 (Chemtrec) 24 hours every day

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## 2. HAZARD IDENTIFICATION

### Classification

Classification of the chemical in accordance with 29CFR §1910.1200  
WHMIS Classification

Serious eye damage/eye irritation Category 2A  
Respiratory sensitization Category 1  
The classification of eye effects is based on testing of a similar mixture.

### Label elements

#### Danger

#### Hazard statements

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

#### Precautionary Statements - Prevention

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P284 - In case of inadequate ventilation wear respiratory protection

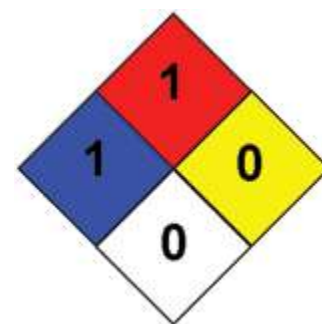
#### Precautionary Statements - Response

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician



#### Hazards not otherwise classified (HNOC)

|   |                      |
|---|----------------------|
| 1 | Health               |
| 1 | Flammability         |
| 0 | Reactivity           |
| X | Protective Equipment |



## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical name                | CAS No.   | IUB No.   | Weight-% |
|------------------------------|-----------|-----------|----------|
| Protease (Subtilisin) (aep.) | 9014-01-1 | 3.4.21.62 | 2.5 – <5 |

aep (active enzyme protein) contributes to the GHS classification.

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### 4. FIRST AID MEASURES

In case of unintended overexposure, the following measures apply

#### Inhalation

Effects

May cause allergic respiratory reaction.

Symptoms

Shortness of breath, wheezing and coughing.

The effect of inhalation may be delayed.

First Aid

Remove person to fresh air. If signs/symptoms continue, get medical attention.

Show this safety data sheet to the doctor in attendance.

#### Skin Contact

Effects

May cause slight irritation.

Symptoms

Slight irritation.

First Aid

Remove and wash contaminated clothing before re-use. Wash off immediately with plenty of water. If symptoms persist, call a doctor. Show this safety data sheet to the doctor in attendance.

#### Eye Contact

Effects

Irritating to eyes.

Symptoms

Irritation. Redness.

First Aid

Hold eye open and rinse slowly and gently with water for 15-20 min. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. If symptoms persist, call a doctor. Show this safety data sheet to the doctor in attendance.

#### Ingestion

Effects

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms

Irritation.

First Aid

Rinse mouth with water and drink plenty of water. If symptoms persist, call a doctor. Show this safety data sheet to the doctor in attendance..

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### 5. FIRE-FIGHTING MEASURES

#### Flammable Properties

Slightly flammable according to HMIS criteria.

#### Suitable Extinguishing Media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### Unsuitable Extinguishing Media

None.

#### Hazardous Combustion Products

None.

#### Specific Hazards Arising from the Chemical

May cause allergic respiratory reaction

#### Protective Equipment and Precautions for Firefighters

Self-contained breathing apparatus and standard turn-out apparel

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### 6. ACCIDENTAL RELEASE MEASURES

#### Personal Precautions

For personal protection see section 8

#### Environmental Precautions

Collect spillage.

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## Methods for cleaning up

Avoid formation of dust and aerosols.

Spilled preparation should be removed immediately to avoid formation of dust from dried preparation. Take up by mechanical means preferably by a vacuum cleaner equipped with a HEPA (High Efficiency Particulate Air) filter. Flush remainder carefully with plenty of water. Avoid splashing, high pressure washing or compressed air cleaning to avoid formation of aerosols. Ensure sufficient ventilation. Wash contaminated clothing.

## Other Information

For personal protection see section 8.

## 7. HANDLING AND STORAGE

### Handling

Avoid formation of dust and aerosols.  
Ensure adequate ventilation.  
Liquid enzyme preparations are dustfree preparations  
However, inappropriate handling may cause formation of dust or aerosols

### Storage

Keep tightly closed in a dry and cool place. Temperature 0-25 °C (32-77 °F)

### Storage Conditions

In unbroken packaging - dry and protect from the sun. The product has been formulated for optimal stability. Extended storage or adverse conditions such as higher temperatures or higher humidity may lead to a higher dosage requirement.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

| Chemical name                | ACGIH TLV                                                                                           |
|------------------------------|-----------------------------------------------------------------------------------------------------|
| Protease (Subtilisin) (aep.) | Ceiling: 0.00006 mg/m <sup>3</sup> Ceiling (as crystalline active enzyme, listed under Subtilisins) |

| Chemical name                | DNEL Dermal Acute Local (Workers) | DMEL Inhalation Long term Local (Workers) |
|------------------------------|-----------------------------------|-------------------------------------------|
| Protease (Subtilisin) (aep.) | -                                 | DMEL = 60 ng/m <sup>3</sup>               |

| Chemical name                | DMEL Inhalation Long term Local (Professionals/Consumers) | DNEL Dermal Acute Local (Professional/Consumers) |
|------------------------------|-----------------------------------------------------------|--------------------------------------------------|
| Protease (Subtilisin) (aep.) | DMEL = 15 ng/m <sup>3</sup>                               | -                                                |

### Derived No Effect Level (DNEL)

### Derived Minimal Effect Level (DMEL)

When enzymes are used for spray products or hard surface cleaning, exposure of enzymes may exceed the safety level (15 ng/m<sup>3</sup> DMEL). If you intend to develop such products, please contact Novozymes for further safety evaluation.

## Occupational exposure controls

### Engineering Controls

Ensure adequate ventilation, especially in confined areas.  
Maintain good conditions of industrial hygiene. Some processes may require enclosures, local exhaust ventilation, or other engineering controls to control airborne levels. Additional handling and healthy/safety information is available upon request

## Personal Protective Equipment

### Respiratory protection

In case of insufficient ventilation wear suitable respiratory equipment that meets HEPA/P100 specifications

### Eye Protection

Wear safety glasses with side shields (or goggles)

### Skin and body protection

Wear protective gloves and protective clothing

### General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice

### Environmental exposure controls

Local authorities should be advised if significant spillages cannot be contained

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Information on basic physical and chemical properties

|                                              |                                                                                                                                       |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Physical State                               | Liquid                                                                                                                                |
| Color                                        | Amber                                                                                                                                 |
| Odor                                         | Slight fermentation odor                                                                                                              |
| pH                                           | Adjusted to the range where active enzyme is stable – typically pH 4 – 9                                                              |
| Melting point / freezing point               | No data available                                                                                                                     |
| Boiling Point/Range                          | No data available                                                                                                                     |
| Flash Point                                  | Not determined                                                                                                                        |
| Evaporation rate                             | Not available                                                                                                                         |
| Flammability (solid, gas)                    | Not determined                                                                                                                        |
| Upper/lower flammability or explosive limits | Not available                                                                                                                         |
| Vapor Pressure                               | No data available                                                                                                                     |
| Vapor density                                | Not available                                                                                                                         |
| Density (g/ml)                               | 1.08                                                                                                                                  |
| Solubility                                   | Readily soluble in application-relevant solutions at all levels of concentration, temperature and pH which may occur in normal usage. |
| Partition Coefficient (n-octanol/water)      | No data available                                                                                                                     |
| Autoignition temperature                     | Not available                                                                                                                         |
| Decomposition temperature                    | Not available                                                                                                                         |
| Viscosity                                    | Not available                                                                                                                         |
| <b>Other information</b>                     | No information available                                                                                                              |

### 10. STABILITY AND REACTIVITY

|                                           |                                             |
|-------------------------------------------|---------------------------------------------|
| <b>Reactivity</b>                         | Not relevant                                |
| <b>Chemical stability</b>                 | Stable under recommended storage conditions |
| <b>Possibility of hazardous reactions</b> | None under normal processing                |
| <b>Conditions to Avoid</b>                | None                                        |
| <b>Incompatible materials</b>             | None                                        |
| <b>Hazardous Decomposition Products</b>   | None                                        |

### 11. TOXICOLOGICAL INFORMATION

#### Information on toxicological effects

Repeated inhalation of enzyme dust or aerosols resulting from improper handling may induce sensitization and may cause allergic type 1 reactions in sensitized individuals

Mild skin irritation

May cause eye irritation

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea

**Actual Product Data** An eye irritation study, Isolated Chicken Eye (ICE) on similar mixture concluded the classification as Eye Cat. 2

|               |                     |                           |                           |                                   |
|---------------|---------------------|---------------------------|---------------------------|-----------------------------------|
| Chemical name | Acute oral toxicity | Acute inhalation toxicity | Skin corrosion/irritation | Serious eye damage/eye irritation |
|---------------|---------------------|---------------------------|---------------------------|-----------------------------------|

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|                              |                                                         |                                                            |                                   |                                   |
|------------------------------|---------------------------------------------------------|------------------------------------------------------------|-----------------------------------|-----------------------------------|
| Protease (Subtilisin) (aep.) | LD50: 504 mg aep/kg bw (OECD401/423)                    | Exposure based waiving                                     | Slightly irritating (OECD TG 404) | Slightly irritating (OECD TG 405) |
| <b>Chemical name</b>         | <b>Specific target organ toxicity (single exposure)</b> | <b>Genetic toxicity</b>                                    | <b>Skin sensitization</b>         | <b>Respiratory sensitization</b>  |
| Protease (Subtilisin) (aep.) | Irritating, respiratory tract (ACGIH 2001)              | No indication of mutagenic effects (OECD TG 471, 473, 476) |                                   | Sensitizer (Human experience)     |

## 12. ECOLOGICAL INFORMATION

### Toxicity

|                              |                                             |                                              |                                             |
|------------------------------|---------------------------------------------|----------------------------------------------|---------------------------------------------|
| <b>Chemical name</b>         | <b>Daphnia, acute</b>                       | <b>Algae, acute</b>                          | <b>Fish, acute</b>                          |
| Protease (Subtilisin) (aep.) | EC50 (48 hours): 586 µg aep/l (OECD TG 202) | ErC50 (72 hours): 830 µg aep/l (OECD TG 201) | LC50 (96 hours): 8.2 mg aep/l (OECD TG 203) |

### Persistence/Degradability

|                              |                                      |                                                |
|------------------------------|--------------------------------------|------------------------------------------------|
| <b>Chemical name</b>         | <b>Persistence and degradability</b> | <b>Partition coefficient (n-octanol/water)</b> |
| Protease (Subtilisin) (aep.) | Readily biodegradable (OECD TG 301B) | LogPow: <0                                     |

|                              |                                  |
|------------------------------|----------------------------------|
| <b>Chemical name</b>         | <b>Bioaccumulative Potential</b> |
| Protease (Subtilisin) (aep.) | Does not bioaccumulate           |

**Mobility in soil** Not relevant

**Other adverse effects** No information available

## 13. DISPOSAL CONSIDERATIONS

**Disposal of wastes** Dispose of in accordance with local regulations.

**Contaminated Packaging** Dispose of wastes in an approved waste disposal facility.

## 14. TRANSPORT INFORMATION

### Transport Regulations

No dangerous goods according to transport regulations

No special precautions required

**UN-No** Not applicable

**Proper Shipping Name** Not applicable

**Packing Group** Not applicable

**Reportable Quantity (RQ)** Not applicable

**Marine Pollutant** Not applicable

### International Regulations

**IATA** Not regulated

**IMDG** Not regulated

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## 15. REGULATORY INFORMATION

### USA, Federal Regulations

#### TSCA Inventory

The active ingredient and all components of the enzyme preparation are listed on the TSCA inventory

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and 40 CFR Part 372.

#### SARA 311/312 Hazardous Categorization

|                                   |    |
|-----------------------------------|----|
| Acute health hazard               | No |
| Chronic Health Hazard             | No |
| Fire hazard                       | No |
| Sudden Release of Pressure Hazard | No |
| Reactive Hazard                   | No |

### USA, State Regulations

#### California Proposition 65

This product does not contain any intentionally added Proposition 65 chemicals.

### Canada

#### DSL/NDSL

All components are listed either on the DSL or NDSL

#### WHMIS Statement

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by WHMIS 2015.

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## 16. OTHER INFORMATION

#### Training advice

Details on the safe handling of this product are located in the Novozymes Customer Center Document Library on [www.mynovozymes.com](http://www.mynovozymes.com)

#### GHS-Classification

The classification of eye effects is based on testing of a similar mixture. The GHS calculation method has been used for classification of this mixture.

#### Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text. Furthermore, as the conditions of use are beyond the control of Novozymes, it is the responsibility of the customer to determine the conditions of safe use of these products.

#### End of Safety Data Sheet

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