

DeniSafe® certification of enzyme product(s)

To: COLORCENTER

From: Novozymes A/S, Denmark

Date: 15/03/2019

Luna no.: 2019-05047-01

Certification of COLORCENTER enzymes:

Customer Name	Product Name	Date of Expiration
COLORCENTER	Unizim DL-T	31,12,2019
	Unizim DR	31,12,2019

for safe use in DeniSafe® certified mist technology equipment for Denim washing

Executive Summary

Novozymes' development of unique, low temperature and low water effective enzymes has made it feasible to introduce innovative, highly effective processes for Denim washing with significant water savings and sustainability benefits.

Novozymes has successfully safety assessed enzyme products listed in the above table for spray application in specified closed denim washing machines, by product analysis, enzyme protein determinations and in accordance with best practice, European Standards (TLV*) and REACH guidelines.

A. Verification of RTU enzymes:

To verify that enzyme products listed in the above table is based on suitable enzyme concentrates, has an active enzyme protein content not overpassing the limit and being covered by the safety assessment, Novozymes has tested the product.

Conclusions:

1. Enzyme protein content within the limit.

The level of active enzyme proteins determined in products listed in the above table were **within the limit of the safety assessment** and suitable for the application.

2. Correct type of enzymes with high performance and enzyme activities within the target.



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The activities and type of enzymes found in products listed on the above table were **within the target and specifications** for **Denisafe® enzymes** and hence a good performance of abrasion and back staining can be ensured.

3. Products listed in the above table fulfills the criteria for **Denisafe®** enzymes.

B. Recommendation for safe application and use of enzymes:

- It is of special importance to check the correct connections of the elements of the system, as an improper installation in origin or deterioration of materials of use, can result in leakage of the product during the process of dosage and consequently a risk of exposure in the atmosphere.
- It is recommended to periodically check the state of the connection elements using [liquid visual](#) identifier and in any case to follow the manufacturer's recommendations.
- It is IMPERATIVE to DO A RINSE with water after each enzyme treatment and prior to opening of the washing machine
- PPE should be used near the open washing machine for 20 minutes after spray treatment
- Novozymes has tested and verified through determination of enzyme protein in filters from air samplings method its products in the following equipment:

• Manufacturer	Address	Equipment name
Jeanologia S.A.	Ronda Guglielmo Marconi,12 Parque tecnológico de Valencia 46980 Paterna (Valencia) Spain	E-Flow, type H
Tonello S.r.l.	via della Fisica 1/3 Sarcedo (VI) 36030 – Italy	Core
Metod Makina	Oruçreis Mahallesi, Oruç Reis Mahallesi Vadi Caddesi, Giyimkent Sitesi 5. Sokak No: 28-30, Atışalanı, 34235 Esenler/İstanbul, Tyrkiet	Magic Box with HEPA 14 filter installed on outlet
Yilmak	İkitelli Organize Sanayi Bölgesi Dersan Yapı Koop. S6 E Blok, 34306 - Başakşehir / İSTANBUL	Rainforest Jeanius



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C. General recommendations for safe application and use of enzymes

- Novozymes generally recommend respiratory protective equipment (PPE; at least P3/N100 mask) when there is a risk of inhalation of airborne enzyme via droplets or dust at levels above the prescribed TLV of 60 ng EP/m³ for peak values or if the exposure level is unknown, especially during:
 - ✓ open enzyme handling
 - ✓ cleaning and maintenance of production equipment in contact with enzymes
 - ✓ maintenance, repair and cleaning around production equipment where enzymes are used
- PPE must be used if visible spillage is present
- PPE must be used during all cleaning and maintenance/repair in enzyme handling areas
- Spilled enzyme must be removed immediately using a soft water hose (no high-pressure air or water)
- Written procedures are recommended for cleaning of spilled enzyme products
- Test of employees for sensitization/allergy should be considered if allergy symptoms are observed among the workers. Please contact your enzyme supplier.

D. Formulator responsibilities towards the end-user (typically a laundry)

- Include safety instructions on your RTU product documentation (MSDS, PDS, AS)
- Inform laundry about which equipment can be used for such spray application.
- Provide laundry with general safety guidelines on handling enzymes (from Novozymes)
- Ask the laundry to provide regular safety check/audit reports done by the machine supplier
- Reject to sell DeniSafe® branded enzymes to laundries without DeniSafe® certified machines
- Support the laundry with the correct use and application of the enzymes and auxiliaries incl. operating of the equipment so that a good performance is achieved overall.



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NOVOZYMES CERTIFICATION COMMITTEE

Chairman

Mr. Andreu Colomera



Global & Regional Marketing

Mr. Christian Wieth



Mr. Elmar Janser



Validity of DeniSafe® certificate:

This certificate is valid from 01/01/2019 until 31/12/2019.

Any change in the enzymes used for the RTU product formulation requires reanalysis by Novozymes labs.

All previous certificates regarding the above products are considered null and void.

Disclaimer:

Laws, regulations and/or third party rights may prevent customers from importing, using, processing and/or reselling the products described herein in a given manner. Without separate, written agreement between the customer and Novozymes to such effect, this document does not constitute a representation or warranty of any kind and is subject to change without further notice.

Novozymes performs various work environment tests to assist customers in mitigating the risk that employees may develop enzyme allergy when handling Novozymes enzyme products. Such tests can be analysis of air-sampling filters or tests of surface contamination.

Tests are performed diligently and will normally provide good guidance for the customer in evaluating the relative safety of the work environment. However, the tests have limitations and the peak value of enzyme exposure may not be captured because it will be instant, individual measurements influenced by a number of factors, e.g. humidity, placement and orientation of air filters, selection of surfaces, room ventilation and different work behaviours and more.

The tests are only provided as an indication of the typical air and surface contamination levels to assist the customer in making informed decisions about safe handling of Novozymes enzyme products. Since the conditions of actual use are beyond the control of Novozymes, it is the sole responsibility of the customer to determine the appropriate safety level and make sure that relevant staff is given adequate handling instructions. The accuracy or completeness of test results and any recommendations or suggestions are made without any warranty or guarantee.



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