

## TECHNICAL DATA SHEET

### UniPrep D 315 LL

Long Life, Low Temperature Soak Cleaning System

|                  |                                                                                                                          |
|------------------|--------------------------------------------------------------------------------------------------------------------------|
| Manufacturer     | Atotech Deutschland GmbH                                                                                                 |
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| IMDS-No.         | not applicable                                                                                                           |
| Products covered | UNIPREP D 315 LL (1685126)<br>ACTIVATOR B2 (1681262)<br>UNIPREP ANTIFOAM 100 (1687985)<br>UNIPREP ANTIFOAM 250 (1688011) |

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## 1 Process Information

UniPrep® D 315 LL is a highly emulsifying, alkaline, low temperature soak cleaner for steel and copper substrates. It is suitable for many metal finishing applications and is ideal as an immersion cleaner prior to barrel and rack zinc plating. UniPrep® D 315 LL is designed to rapidly penetrate, lift off and emulsify a variety of soils such as greases, oils, carbonized material, phosphate coatings and drawing compounds.

- UniPrep D® 315 LL is formulated specifically for steel, cast iron, copper and magnesium. It is not recommended for use on zinc and aluminum alloys.
- UniPrep D® 315 LL is suitable as the first step in both paint pretreatment and pre-plating applications.
- UniPrep D® 315 LL is suitable for use as a long life cleaner. When used in conjunction with specially formulated additives, oils and other complex organics are degraded in-situ, resulting in an economical cleaning system with long cleaner life and steady-state performance.

| Features                          | Benefits                            |
|-----------------------------------|-------------------------------------|
| Low operating temperature*        | Energy savings                      |
| No hard chelators                 | Reduced waste water treatment costs |
| No phosphorous                    |                                     |
| No boron                          |                                     |
| No alkyl phenol ethoxylates (APE) | Complies with EC 648/2004           |

\* Higher temperatures may be necessary for more difficult to remove soils.

## 2 Equipment

|                          |                                                                                 |
|--------------------------|---------------------------------------------------------------------------------|
| <b>Tanks</b>             | Mild steel, Stainless steel, HDPE, Polypropylene, PVC or CPVC                   |
| <b>Heating / Cooling</b> | Stainless steel, PTFE, Titanium                                                 |
| <b>Exhaust</b>           | Recommended (Removal of steam)                                                  |
| <b>Pumps</b>             | Mild steel, Stainless steel, PVC or CPVC                                        |
| <b>Agitation</b>         | Recommended, to improve cleaning efficiency and improve in-situ oil degradation |
| <b>Filtration</b>        | Recommended: Use 25 – 50 micron filter media                                    |

## 3 Make-Up

| Make-Up of 100 l                               | Optimum  | Range         |
|------------------------------------------------|----------|---------------|
| Water                                          | 85 liter | 75 – 95 liter |
| UniPrep® D 315 LL                              | 15 liter | 5 – 25 liter  |
| Activator B2<br>(required for oil degradation) | 75 ml    | 25 – 125 ml   |

- Fill tank with water to approximately 70 % of the volume.
- Add the required amount of UniPrep® D 315 LL.
- Add the required amount of Activator B2.\*
- Fill tank to required working volume.
- Heat to operating temperature.
- The solution is ready to use.

\* Do not combine Activator B2 with undiluted UniPrep® D 315 LL. The UniPrep® D 315 LL should be diluted prior to addition of Activator B2.

## 4 Working Parameters

| UniPrep® D 315 LL (Operated as conventional cleaner)               | Optimum   | Range          |
|--------------------------------------------------------------------|-----------|----------------|
| Temperature                                                        | 40 °C     | *20 – 80 °C    |
| Concentration                                                      | 150 ml/l  | 50 – 250 ml/l  |
| Dwell time                                                         | 5 minutes | 3 – 15 minutes |
| UniPrep® D 315 LL (Operated as long life, low temperature cleaner) | Optimum   | Range          |
| Temperature                                                        | 40 °C     | *20 – 50 °C    |
| Concentration                                                      | 100 ml/l  | 50 – 150 ml/l  |

| UniPrep® D 315 LL (Operated as long life, low temperature cleaner) | Optimum   | Range          |
|--------------------------------------------------------------------|-----------|----------------|
| Dwell time                                                         | 5 minutes | 3 – 15 minutes |

*\*Temperature can play a critical role in cleaning performance. Prior to implementation in production, the operating temperature of UniPrep® D 315 LL should be verified that it will meet the application's cleaning performance requirement.*

## 5 Application Guidelines

### Foam

UniPrep® D 315 LL is a moderately foaming soak cleaner. Applications with strong agitation may experience foaming. Use of UniPrep® Antifoam 250 or UniPrep® Antifoam 100 will rapidly reduce foam. It is highly recommended to have UniPrep® Antifoam available for the initial installation of UniPrep® D 315 LL.

### Operating UniPrep® D 315 LL as a Long Life, Low Temperature Cleaning Process

*NOTE: UniPrep® D 315 LL can be operated as a long life, low temperature cleaning process. In order for in-situ oil degradation to occur effectively, the following operational guidelines must be followed:*

### Solution Replenishment

UniPrep® D 315 LL solution will be consumed by soil loading and by solution drag-out. Concentration should be determined by titration and replenished at least once per operating shift.

To maintain optimum oil degradation efficiency, it is necessary to replenish Activator B2 on a regular basis; 50 % of initial make-up dose of Activator B2 must be added once per week. Failure to add Activator B2 will result in the loss of in-situ oil degradation, which will reduce bath life.

### Aeration

An oxygenated (aerobic) environment is required for proper oil degradation to occur. Air injection or other aeration methods must be provided continuously including weekends and shutdowns. Without proper oxygenation, oil degradation will be diminished and unpleasant odors can occur.

### Temperature

The operating temperature range is 20 – 50 °C. Temperatures in excess of 50 °C should be avoided as they are detrimental to the oil degradation mechanism, and can result in reduced bath life. In the event that temperature exceeds 50 °C, the temperature controller should be repaired as quickly as possible. Once proper temperature control is restored, Activator B2 should be added, at the original make-up dosage, to re-establish the in-situ oil degradation capabilities.

### Filtration (Recommended)

When operated as a Long life, Low temperature cleaner, UniPrep® D 315 LL provides extended solution life by degrading organic contaminants. Some contaminants entering the cleaner are inorganic particulates that will not be degraded. Filtration is recommended to remove these particulates.

A well designed filtration system can provide the following process benefits.

- Removes inorganic particulates from cleaning solution.
- Provides aeration (oxygen) necessary for in-situ oil degradation.

Pump recirculation through a 25 micron polypropylene filter bag is typically sufficient. To provide aeration, the return from the filter should discharge above solution level.

## 6 Material No. for Make-Up and Maintenance Products

| PRODUCT              | MATERIAL NO. |
|----------------------|--------------|
| UNIPREP D 315 LL     | 1685126      |
| ACTIVATOR B2         | 1681262      |
| UNIPREP ANTIFOAM 100 | 1687985      |
| UNIPREP ANTIFOAM 250 | 1688011      |

## 7 General Safety Precautions

Avoid direct contact with this material. Do not inhale associated mist or vapors. Wash contaminated clothing before reuse. Refer to Safety Data Sheet (SDS) for specific precautions before handling this material and for first aid recommendations. As applicable, keep exposure below the limits recommended by the appropriate regional regulatory agencies.

*For further information regarding safe handling of the product please refer to the corresponding SDS. The SDS is provided as part of the ordering process. If you don't have a copy of the SDS for a product then it can be obtained, on request, from the appropriate regional Atotech office.*

## 8 Document History

| Current revision status | Date          | Change against last version:                 |
|-------------------------|---------------|----------------------------------------------|
| 01                      | 04. Aug.2016  | New                                          |
| 02                      | 22. Aug.2016  | Sales Product                                |
| 03                      | 07. Dec.2017  | Application changed                          |
| 04                      | 11. July.2018 | Activators changed                           |
| 05                      | 06. Dec.2018  | New format; Update Wastewater Recommendation |
| 06                      | 14. Nov.2022  | Chapter 4: Temperature changed               |

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