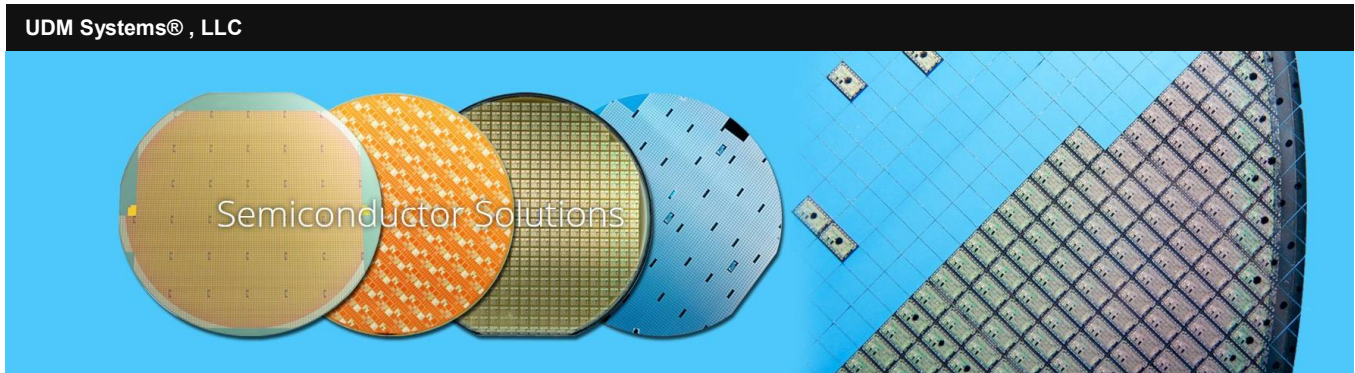


SEMICONDUCTOR WAFER-DIE SEPARATION SOLUTIONS



Advantages of UDM Systems® Semiconductor Products

UDM Systems® , LLC products are specifically designed for use in multiple applications in semiconductor manufacturing industries. Both our consumable products and dispensing equipment are specially designed to be environmental friendly, as well as a robust and easy to use technology. We strive to provide the best suited product to our customers as well as hands-on support for process development and troubleshooting any process issues for new and existing customers.



Add Value to Your Die-Separation Process

UDM Systems® , LLC semiconductor lubricants represent the best technology for your wafer dicing needs. Our products are specifically designed to enhance lubrication, prevent galvanic corrosion, dissipate heat and eliminate topside and bottom side chipping in a clean and effective way. No matter what your individual specifications are, we have



UDM Systems® , pride ourselves and our products on being completely environmentally safe. They are water-based, non-hazardous, biodegradable and Eco-Friendly chemicals.

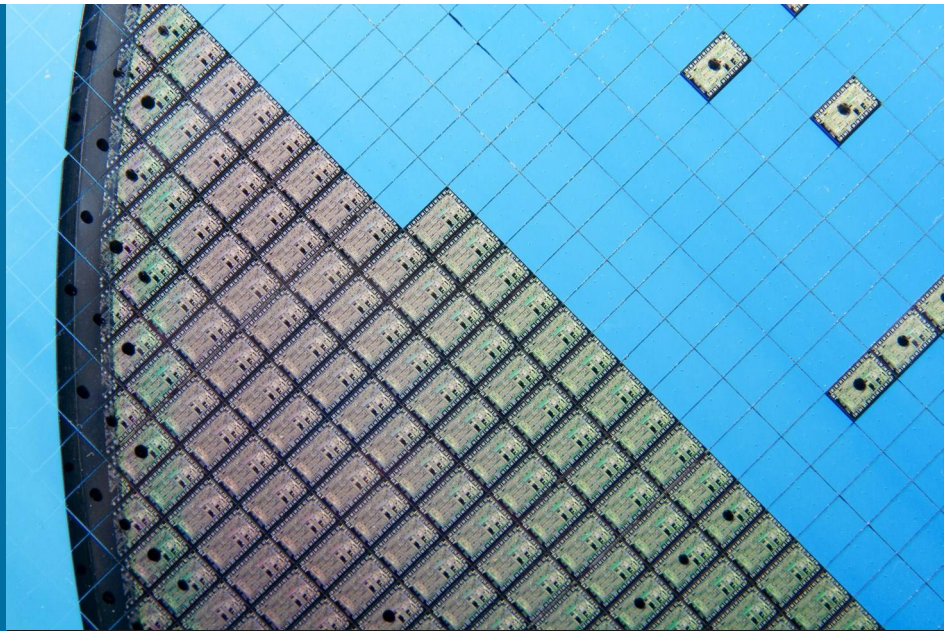


UDM System Products

UDM L-Series products are designed to address the major challenges in wafer dicing, in today's semiconductor industry.

Using all eco-friendly components in our formulations not only provides a cost savings, but also helps to keep the environment clean.

Our consumable product, when utilized with our specially designed lubricant dispensers offers an accurate and complete solution to semiconductor development and production applications.



Wafer-Die Separation

Applications for UDM Systems® L-Series Coolant/Lubricant

WAFER DICING

UDM Systems®® -L300 Series provides the performance and the capabilities needed for processing semiconductor and compound semiconductor wafers with various technologies.

- *Highly effective for wafer-die separation of silicon and delicate III-V materials substrates.*
- *Excellent at eliminating wafer surface contamination.*
- *Eliminate Galvanic and pitting corrossions.*
- *Effective in reducing electrostatic discharge (ESD) issues.*

Unique Features

- Effectively reduces the surface tension of DI water
- Outstanding wetting properties and excellent rinse-ability
- Increases die yield and reliability
- Increase heat transfer and reduced thermal stress (Heat dissipation)

Advantages of UDM Systems® L-Series over DI Water and Other Coolants or Lubricants



Surface Tension Reduction: UDM Systems® L-Series used as an additive to de-ionized water reduces the water surface tension from 70 mN/m to 25.0 mN/m. This allows cooling water to penetrate down in the kerf. (The higher surface tension the harder it is for cooling water to penetrate down in the kerf).

Heat Transfer Optimization: UDM Systems® L-Series optimizes dicing process by dissipating heat and reducing friction at the contact zone (contact point of the dicing blade and work piece).

Sawdust Dispersion: An improperly cooled dicing wheel will “load up” with debris, increasing the wear rate of the blade and preventing the exposure of fresh diamonds needed for cutting. UDM Systems® L-Series disperses the swarf particles (sawdust) generated during dicing thereby preventing the compaction of sawdust, which is the main cause of chipping and die wall micro cracks.

Extend blade life: A dicing wheel cooled with UDM Systems® L-Series treated water increases blade life by 20- 30%. The wheel will run cooler with much less drag and will be less susceptible to metal fatigue. UDM Systems® L-Series effectively frees the working edge of swarf (sawdust). Sawdust will not abrade the sides of the dicing wheel which ultimately increases the life of the blade.

ESD (electrostatic discharge) Reduction: Dicing with UDM Systems® L-Series treated deionized (DI) water reduces ESD without increasing the acidity of the cooling DI water. Static charges cause swarf (silicon dusts) to adhere to wafer surface, thus causing bonding pad contamination issues. Dicing with UDM Systems® L-Series treated DI water reduces or completely eliminates ESD which prevents wafer surface contamination and improves bonding pad integrity and die reliability.

Improve Wafer and Die Reliability: Wafer and die reliability are significantly improved with use of UDM Systems® L-Series. Improvements include reduction in chipping, micro-cracking, cleaner bonding pads and increased die yields. This increase alone more than justifies the cost of UDM-L Series products.

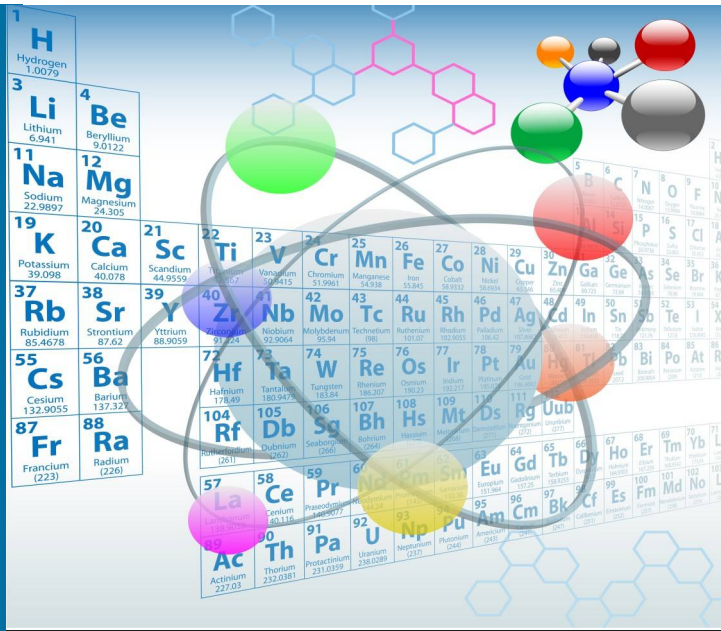
Is UDM Systems® L-Series Safe? UDM Systems® L-Series is completely safe for all types of materials including Silicon, Piezo, Lithium Niobate, Lithium Tantalite, Gallium Arsenide (GaAs), Silicon



UDM SYSTEMS, LLC

UDM Systems® L-Series Storage

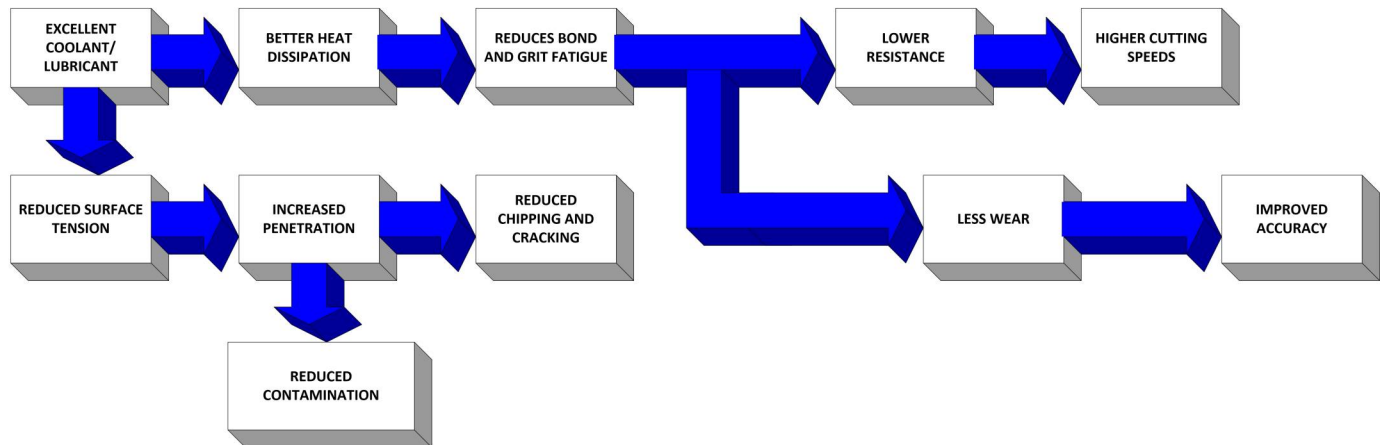
UDM Systems® L-Series Products should be stored at room temperature, preferably between 68F and 75F to optimize the 2-year product shelf-life. UDM Systems® L-Series should not be stored below freezing point.



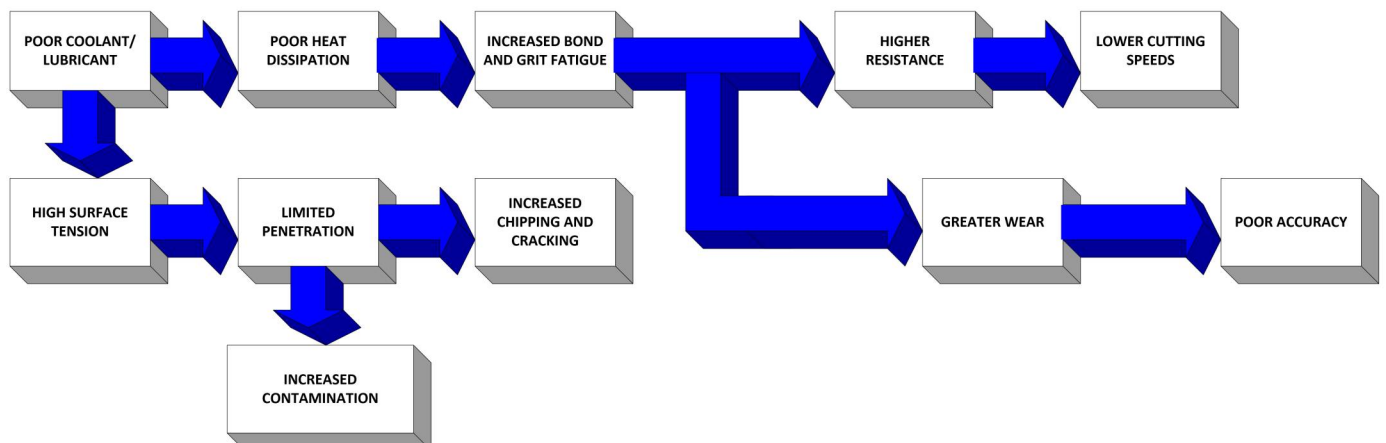
Non-Hazardous, Environmentally safe formulation

ADVANTAGES OF L300 LUBRICANT IN WAFER DICING

L-300 CONCENTRATE



DE-IONIZED WATER ONLY





UDM Systems® offers advanced products to address the major challenges in wafer dicing in today's Semiconductor Industry.

UDM Systems® L-Series products are not only Eco-Friendly, but provide a cost savings due to specifically designed low-consumption rates.



Eco-Friendly Engineered Formulation

UDM Systems® L-Series Coolant/

| UDM Systems® Product | DI WATER: L300 SERIES |
|-----------------------------|------------------------|
| <i>L300-01-D5</i> | <i>1000:1 - 1500:1</i> |
| <i>L300-01-D5CMOS</i> | <i>1000:1 - 1500:1</i> |
| <i>L300-01-00 (N2000)</i> | <i>2000:1 - 4000:1</i> |
| <i>L300-01-00 (N2000_B)</i> | <i>5000:1 - 7000:1</i> |
| <i>AKLC400-SPV (QFN)</i> | <i>1000:1</i> |



UDM Systems® , LLC is a global chemical manufacturing company based in the United States. We offer high-performance products that are suitable for many industries such as Semiconductor, Solar, Optoelectronics, Biomedical, LED, Precision Glass & Optics, and much more.

It's called environmentally friendly for a reason

We pride ourselves and our products on being completely Eco-friendly. All UDM System Products are water-based, non-hazardous, biodegradable and safe for the environment!

UDM Systems® , LLC a global chemical manufacturing company

Distributed by:



Dou Yee Enterprises

Give us a call for more information about our services and products

Visit us on the web at:
www.douyee.com



Sales and Application Offices

Singapore - HQ 2304 Bedok Reservoir Road Bedok Industrial Park C, Singapore 479223
| Tel: (65) 6444 2678 | Fax: (65) 6743 7172 | Email: s1_marketing@douyee.com.sg

China

Shanghai
Tel: +86-21-5899 4619
Fax: +86-21-5899 4618
Email: dysh@douyee.com.cn

Suzhou
Tel: +86-512-6258 5066
Fax: +86-512-6258 5366
Email: ongcc@douyee.com.sg

Beijing
Tel: +86-10-8368 6931
Fax: +86-10-8368 7651
Email: dybj@douyee.com.cn

Tianjin
Tel: +86-22-2642 2093
Fax: +86-22-2642 2023
Email: dytj@douyee.com.cn

Dalian
Tel: +86-411-8377 9121 / 9193
Fax: +86-411-8369 5216
Email: dydl@douyee.com.cn

Chengdu
Tel: +86-28-8501 7691
Fax: +86-28-8501 7693
Email: dycd@douyee.com.cn

Xi An
Tel: +86-29-8824 7085
Fax: +86-29-8824 7085
Email: dyxa@douyee.com.cn

Anhui
Tel: +86-21-5899 4619
Fax: +86-21-5899 4618
Email: dyah@douyee.com.cn

Shenzhen
Tel: +86-755-8389 0255
Fax: +86-755-8389 0675
Email: dysz@douyee.com.hk

France

Tournefeuille
Tel: +33 5 61 16 20 50
Fax: +33 5 34 57 51 30
Email: info.fr@douyee.fr

Pont de Poitte
Tel: +33 3 84 87 02 39
Fax: +33 3 84 48 30 00
Email: info.fr@eurostatgroup.com

Thailand

Tel: (662) 529 0979
Fax: (662) 9081820
Email: mkt.thailand@douyee.co.th

Malaysia

Johor Bahru
Tel: (607) 556 6284 / 558 6285
Fax: (607) 556 6273
Email: jhbsales1@douyee.com.my

Malacca
Tel: (60-6) 231 5060/61/62/64
Fax: (60-6) 231 5059
Email: mlcsales@douyee.com.my

Kuala Lumpur
Tel: (603) 5121 1613 / 14
Fax: (603) 5121 8121
Email: dysales@douyee.com.my

Penang
Tel: (60-4) 390 4824
Fax: (60-4) 390 3815
Email: pngsales1@douyee.com.my

Ipoh
Tel: (60-5) 2911853
Fax: (60-4) 390 3815
Email: pngsales9@douyee.com.my

Sarawak
Tel : 082-262518
Fax: 082- 363517
Email: dennis.ngu@douyee.com.my