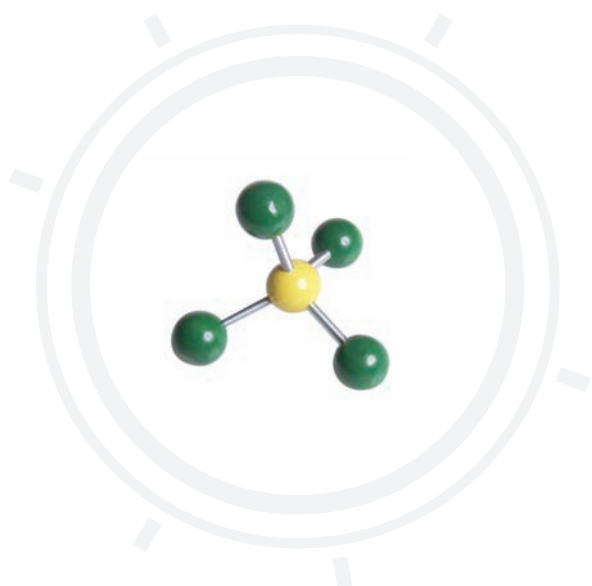
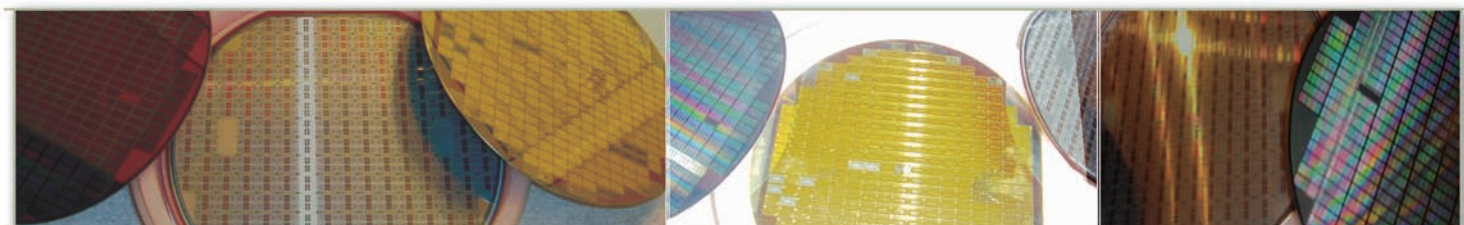


Semiconductor wafer-die separation solutions



UDM L SERIES LUBRICANT/COOLANT & CLEANERS IMPROVES DIE YIELD AND SAVES COST

UDM- L series is a nonionic concentrated wafer dicing and ingot slicing coolant/lubricant specifically formulated for processing Semiconductor and Medical materials. UDM- L series products are uniquely formulated with high performance dispersants and wetting agents to reduce water surface tension and eliminate wafer surface contamination during wafer dicing and wafer scrub. Highly effective for die separating small delicate devices
Eliminate wafer surface contamination and ESD issues - Swarf or sawdust

Unique Features

- Increased heat transfer and reduced thermal stress
- Effectively reduces the surface tension of water
- Outstanding wetting properties and excellent rinseability
- Increases die yield and reliability, and reduces ESD
- Extends Blade life by 20-30%
- Odor free
- Biodegradable, non-hazardous and easily disposable



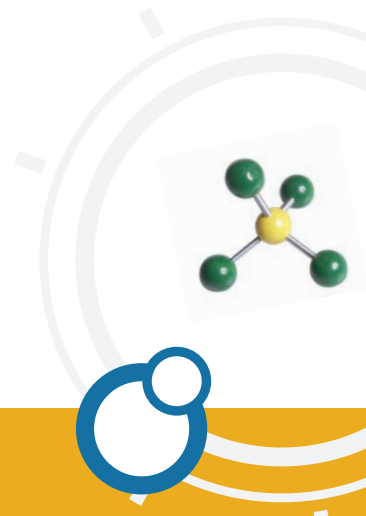
Applications for L Series Coolant/Lubricant

	Wafer Dicing @ 65-72° F DI Water: L Series ratio	Wafer Slicing @ 65-72° F DI Water: L Series ratio	Wafer Back Grinding @ 65-72° F DI Water: L Series ratio
Si, GaAs, InP, Silicon Germanium, Ceramics	200:1 - 1500:1	500:1 - 2000:1	500:1 – 2000:1
SiC, Sapphire, Ferrite materials, Alumina, Glass	200:1 - 1500:1	500:1 - 2000:1	500:1 - 2000:1

UDM Systems® -L300 Series cleaning solution provide the performance and the capabilities needed for processing wafers with various technologies, which includes 90 nm, 65 nm and the upcoming 45 nm technology node. UDM- L series products are specifically formulated with high performance dispersants and wetting agents to reduce water surface tension and eliminate wafer surface ionic contamination. Highly effective for die separating delicate III-V materials devices
Excellent for eliminating wafer surface ionic contamination

Unique Features

- Effectively reduces the surface tension of water
- Outstanding wetting properties and excellent rinseability
- Increases die yield and reliability
- Odor free
- Biodegradable, non-hazardous and hence easily disposable





Applications for L Series Cleaner

	Wafer Dicing @ 65-72° F DI Water: L Series ratio	Mask & Wafer Scrubbing @ 65-72° F DI Water: L Series ratio
Si, GaAs, InP, Silicon Germanium, Ceramics	200:1 - 1500:1	200:1 - 1500:1
SiC, Sapphire, Ferrite materials, Alumina, Glass	200:1 - 1500:1	200:1 - 1500:1

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

Surface Tension Reduction: UDM-L used as an additive to de-ionized water reduces the water surface tension from 70 mN/m to 29.0 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 kerf.)

Heat Transfer: UDM-L 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-L disperses the swarf particles (sawdust dust) generated during dicing there by preventing the compaction of swarf, which is the main cause of chipping and die wall micro cracks.

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

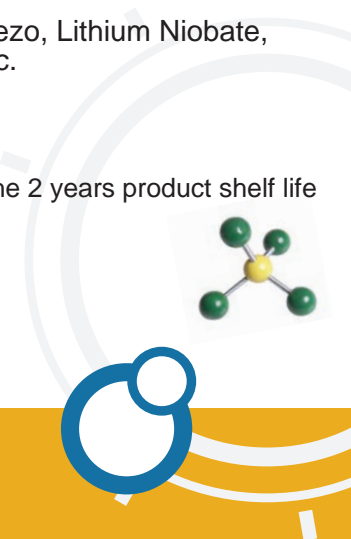
ESD (electrostatic discharge) Reduction: Dicing with UDM-L treated DI water reduces ESD with out increasing the acidity of the cooling DI water. Static charges cause swarf (silicon dusts) to adhere to wafer surface, thus causing bonding pad contamination problems. Dicing with UDM-L treated DI water reduces 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 is significantly improved with use of UMD-L. Chipping, micro- cracking, cleaner bonding pads and die yield are all improved. This increase in die yield will more than justify the cost of UMD-L.

Is UDM-L Safe? UDM-L is completely safe for all types of materials including Silicon, Piezo, Lithium Niobate, Lithium Tantalite, Gallium Arsenide (GaAs), Silicon Germanium, Sapphire, and Glass etc.

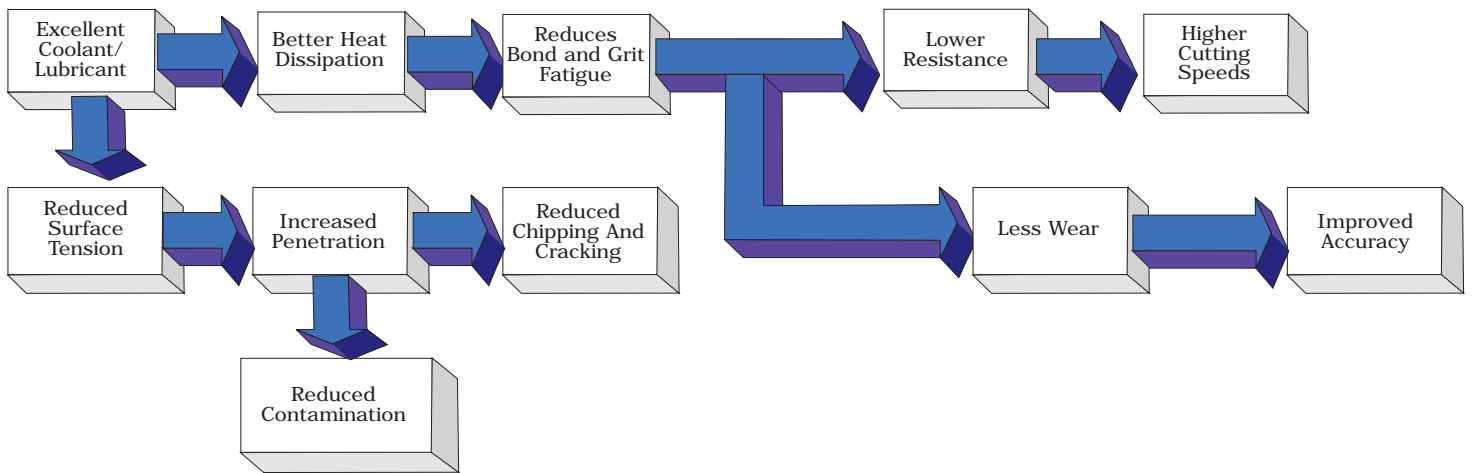
UDM-L Series Storage

UDM-L Series should be stored at room temperature condition preferably about 68F to 75 F for the 2 years product shelf life to hold. Also, UDM-L Series should not be stored below freezing point (32 F)

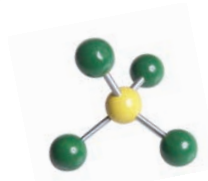
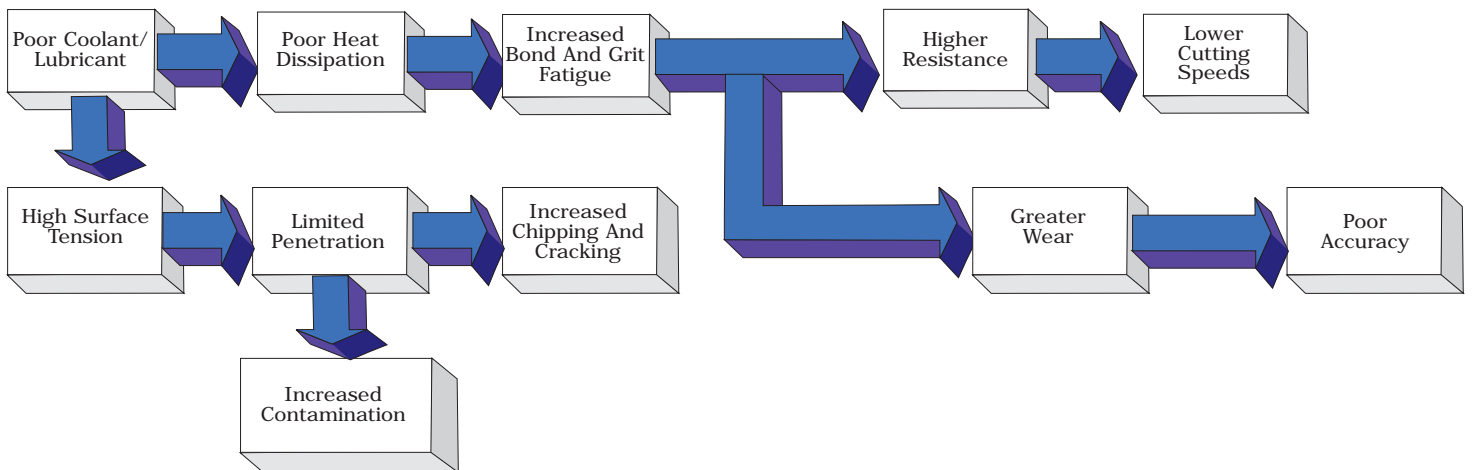


UDM SYSTEMS/ ADVANTAGES OF L-200 LUBRICANT IN WAFER DICING

L-200 Mixed with De-Ionized Water



De-Ionized Water



LD Series Lubricant Dispensing Systems

The UDM Systems® LD series is designed with computerized digital capabilities to deliver precisely the set up mixing ratio for optimum results. Get enhanced performance, features, and capabilities from UDM Systems® LD series lubricant dispensing systems to enhance your die separation process.

Lubricant Dispensing systems models

- 1 line systems will dispense coolant/lubricant to 1 saw
- 2 line systems will dispense coolant/lubricant to 2 saws at the same time
- 3 line systems will dispense coolant/lubricant to 3 separate saws at the same time. (Maximum line system)

Lubricant Dispensing system specifications

Performance:

- Minimum dispense ratio - 200:1 water to lubricant
- Maximum dispense ratio - 2000:1 water to lubricant

Electrical:

120/240 VAC 50/60Hz

Water:

- Max Inlet Pressure – 150psi
- Nominal Operating Pressure – 50-75psi
- Max Outlet Pressure – 85psi
- Output Flow Rates – 1.5-15 Liters/min
- Inlet/Outlet Connections – 1/2" NPTF

Environmental:

- 50-90 Degrees F
- 0-80% Humidity

Dimensions:

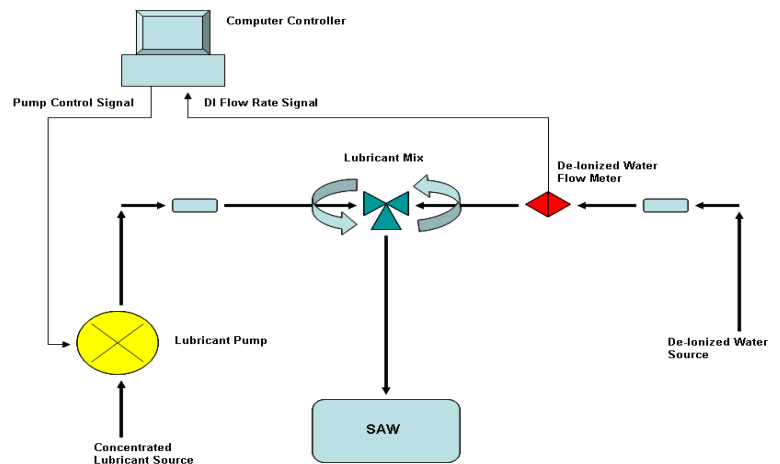
- | | |
|--------|---------|
| Height | 42" |
| Width | 26" |
| Depth | 20" |
| Weight | 100 lbs |



UDM LUBRICANT DISPENSER SYSTEM



Computer Control Interface



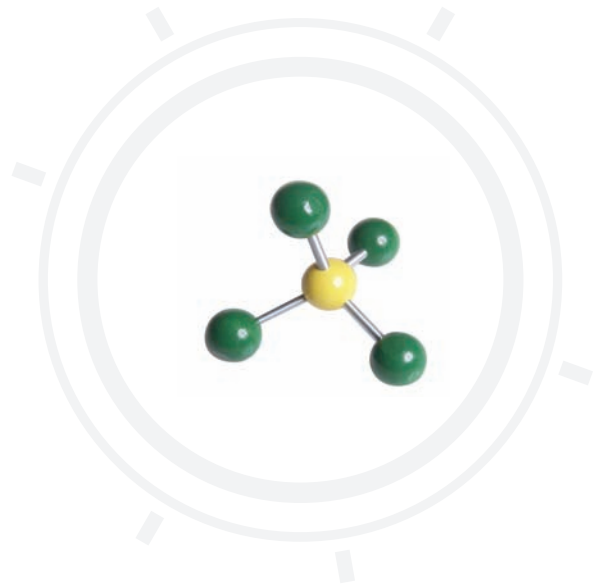
Head Office

UDM
UDM Systems, LLC
8311 Brier Creek Parkway
Suite 105-159
Raleigh, NC 27617 USA
Phone (336)543-8040

www.udmsystems.com

Overseas Offices

China
Korea
Malaysia
Philippines
Singapore
Taiwan



Semiconductor wafer-die separation solutions

Head Office



UDM Systems, LLC
8311 Brier Creek Parkway
Suite 105-159
Raleigh, NC 27617 USA
Phone (336)543-8040

www.udmsystems.com

Overseas Offices

China
Korea
Malaysia
Philippines
Singapore
Taiwan

