

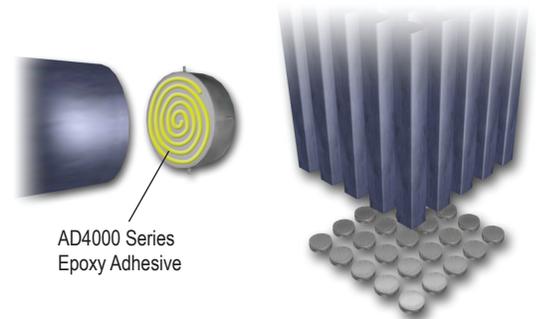
### High-Performance Specialty Products

*Epoxy Adhesives - Polymer Mounting Beams - Formulated Detergents*

#### Monocrystalline Ingot Squaring

**VALTRON AD4000**  
Heat Release Epoxy System

Two-component temporary bonding adhesives designed specifically for squaring of monocrystalline or multicrystalline ingots.



Monocrystalline silicon ingot bricks easily debonded from adhesive and mounting fixture after squaring when heat is applied.

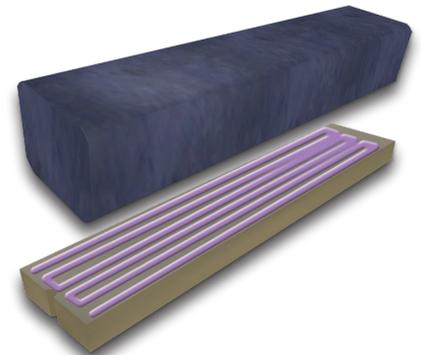
**VALTRON Ingot Mounting Plate**

Unique composite polymeric resin designed to self-dress the saw blade with each slice. Wire saw mountable, eliminating the need for glass and other substrates.

#### Ingot Mounting for Wafering

**VALTRON Photovoltaic Slicing Beam**

Composite polymer mounting beam for PV wafer processing, especially diamond wire slicing. Unique surface texture promotes improved adhesive bonding and dimensional stability.



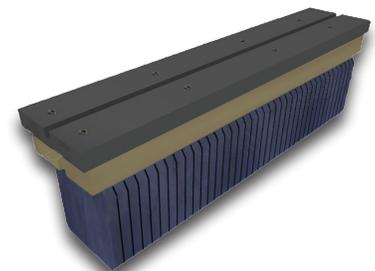
VALTRON ingot mounting adhesive applied to PV slicing beam for wafer slicing.

**VALTRON AD1339-A / AD3905-B**  
Quick-Cure Ingot Mounting Adhesive

Two-component fast-curing epoxy system for adhering PV ingots for slurry slicing applications.

**VALTRON AD1846-A / AD1846-B**  
Medium Viscosity Quick-Cure Ingot Mounting Adhesive

Two-component medium viscosity epoxy system for adhering PV ingots for diamond wire slicing applications.



Sliced wafers ready for debonding.

*See back page for formulated detergents.*

# Wafer Demounting & Cleaning

## Post Slice Cleaning

**VALTRON DP146**  
Low Foam Alkaline  
Detergent

High purity, low foam alkaline detergent which exhibits excellent cleaning and rinsability.

**VALTRON SP2260**  
Alkaline Detergent

Formulated for fast and effective penetration and removal of contaminants.

## De-Bonding

**VALTRON DP164**  
Adhesive De-Bonding  
& Cleaning Solution  
for PV Wafers

Formulated for adhesive de-bonding and preliminary cleaning of PV wafers.

## Pre-Cleaning

**VALTRON DP146**  
Low Foam Alkaline  
Detergent

General purpose detergent for effective cleaning leaving no organic or inorganic residue.

**VALTRON SP2260**  
Alkaline Detergent

Formulated for fast and effective penetration and removal of contaminants.

## Final Cleaning

**VALTRON DP184**  
Alkaline Detergent for PV  
Wafer Cleaning

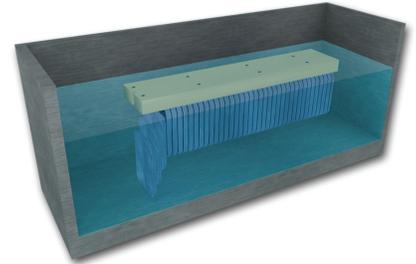
Effectively cleans and removes silicon kerf, cutting slurry and abrasives by-products of diamond wire and silicon carbide slicing.

**VALTRON DP187**  
Low Foam Alkaline  
Detergent for Final PV  
Wafer Cleaning

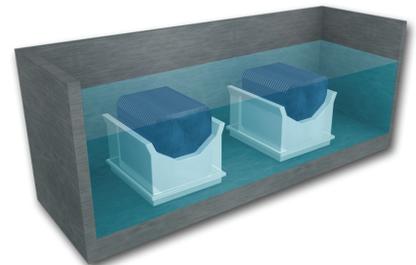
Low foam alkaline detergent formulated for final PV wafer cleaning and removal of contaminants normally resistant to conventional detergents.

**VALTRON SP2260**  
Alkaline Detergent

Formulated for fast and effective penetration and removal of contaminants.



Wafers de-bonded from PV slicing beam using a solution of hot water and VALTRON detergent.



Ultrasonic cleaning of wafers using VALTRON detergent.



In-Line cleaning of wafers using VALTRON detergent.



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