

- Fast, consistent cut rates
- Finer finish results in less polishing steps
- Compatible with most lapping machines
- Part flatness (TTV) as low as 1µm
- Less edge roll-off
- Controlled thinning
- Longer pad life
- Reduced slurry waste
- PSA mounting
- Quick pad change

UPI has a comprehensive selection of pads and polishing materials for the most discriminating processes — from pre-polish to final-polish — with critical surface requirements ranging from commercial grade to zero defect levels. Whether for silicon wafers, quartz crystal, or polycarbonate we offer the perfect material in a variety of configurations for every polishing application.

As we have for nearly a century, Universal Photonics strives to be a useful resource for your questions and unique applications. Our R&D engineers will work with you to develop a customized system for your unique application. All projects are treated with professional confidentiality.

For technical information and sales inquiries, please contact your Regional Sales Representative, or our friendly Account Services Team at (001) 516.935.4000.



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# Trizact™

## DIAMOND TILE ABRASIVE PADS

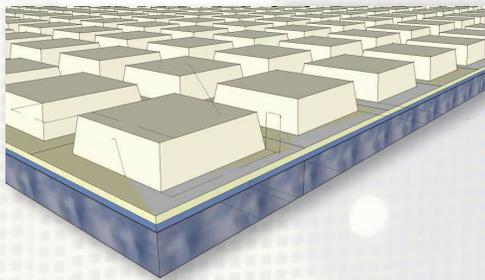
- Faster Cut Rates
- Less Subsurface Damage
- Increased Productivity

**3M** Science.  
Applied to Life.™

## Increased Productivity Shorter Process Time

Developed by 3M™, **TRIZACT™ Diamond Tile (TDT)** is a powerful tool; removing material faster than coarse slurries or fixed pellets, with less subsurface damage and without the cleaning issues of free abrasive lapping.

The results? Dramatically reduced polishing time, limited substrate damage, simplified waste removal – all contributing to increased levels of productivity.



## Faster Cut Rates / Finer Finishes

**TRIZACT™ Diamond Tile** grew out of the search for bonded fixed abrasives. Unlike conventional abrasives, superabrasives require a bond structure that is simultaneously rigid and flexible. **TDT's** fixed abrasive technology combines an organic polymeric binder with an inorganic, diamond-abrasive composite. Microreplicated throughout the process, the composite's lower lying abrasive is continuously exposed, resulting in faster, consistent cut rates, which maintains pad flatness and extends pad life. Faster polishing in subsequent steps also delivers finer surface finishes.

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## Compatible Lapping Quick Pad Change

**TRIZACT™ Diamond Tile** is suitable for most conventional single or double-sided lapping machines. Its Pressure Sensitive Adhesive, PSA, backing mounts easily to existing plates, eliminating plate replacement and making pad changes quick. The **TDT** polishing process uses water-based grinding coolants.

## Reduced Subsurface Damage

A key **TRIZACT™** advantage is the ability to process at lower pressures while the diamond abrasive continues delivering higher removal rates. Lower pressures result in lower subsurface damage. Lower pressures will also improve bow and warp on parts being processed, as well as improve overall flatness.

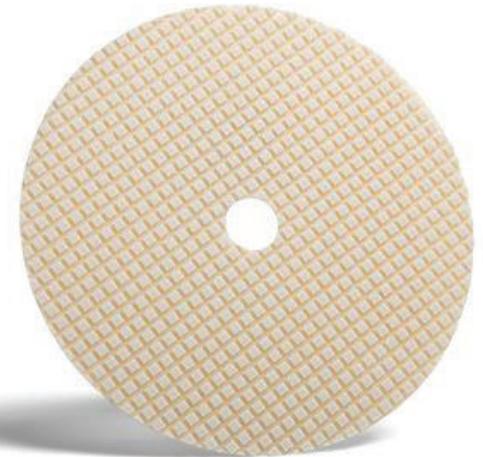
## Ongoing Conditioning Benefits

Fundamental to **TDT's** fixed abrasive technology is conditioning. Initial conditioning, a.k.a. *pad break-in*, removes a thin layer from the surface, exposing the fixed abrasives used for cutting. Pad break-in improves surface flatness and yields a stable substrate removal rate.

*Pad dressing* or *pad conditioning* happens throughout the life of the pad and is operation dependent. Ongoing conditioning improves flatness and keeps removal rates to appropriate levels.

# Trizact™

## DIAMOND TILE ABRASIVE PADS



## Ideal for Many Substrates

Conventional abrasives are hard-pressed to compete with diamond, which is why **TRIZACT™ Diamond Tile** is an ideal lapping solution for a wide variety of hard ceramics and brittle substrates like fused quartz/silica, borosilicate glass, lithium niobate, sapphire, and glass ceramics such as Zerodur™, among others. **TDT's** fast, consistent cut rates, finer finishes, and reduced process time increase productivity and reduce cost.

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3M's **TRIZACT™ Diamond Tile** is available in a variety of micron sizes, along with the silicon carbide pucks and boride stones used for conditioning. UNIVERSAL PHOTONICS also has a selection of water-based coolants to meet your application needs. For more information contact a UPI technical representative.