

# SINGLE CRYSTAL DIAMOND



## Engineered To Meet Your Needs.

Single Crystal Diamond for Precision Machining is a cutting-edge solution for achieving unparalleled precision and efficiency in your machining operations.

## HPHT

HPHT (High-Pressure High-Temperature) single crystal diamond is a superior material renowned for its exceptional characteristics and versatility. Shannon Abrasives specialize in providing high-quality HPHT single crystal diamonds in various shapes and sizes, offering a wide range of applications in different industries.



### SPECIFICATIONS

We offer HPHT single crystal diamonds in a variety of shapes to suit your specific needs. Available shapes include square, rectangle, round, and triangle, providing versatility for a range of applications. In addition, we also offer plates suitable for wire drawing dies, ensuring we can meet the diverse requirements of our customers.

Our HPHT single crystal diamonds are available in a range of standard sizes, starting from 1mm up to 7mm. These sizes cater to various applications and offer versatility in their usage. However, we understand that unique projects may require specific dimensions. Therefore, we also offer the option for customers to request bespoke sizes, ensuring we can meet your precise requirements.

### FEATURES

#### **High Purity and Impact Toughness:**

Our HPHT single crystal diamonds are known for their high purity and excellent impact toughness. The high-purity composition ensures optimal performance in precision applications, providing clean and accurate cuts. The exceptional impact toughness ensures durability and resistance to mechanical stresses, extending the lifespan of the diamond and maintaining its performance even in demanding environments.

#### **Good Thermal and Chemical Stability:**

HPHT single crystal diamonds exhibit excellent thermal and chemical stability. They can withstand high temperatures and harsh chemical environments without compromising their structural integrity.

This stability ensures consistent performance and durability in extreme conditions, making them an ideal choice for demanding applications.

#### **Outstanding Thermal Conductivity:**

One of the standout characteristics of HPHT single crystal diamonds is their outstanding thermal conductivity. They possess exceptional heat dissipation properties, enabling efficient cooling during cutting or grinding processes. This high thermal conductivity helps prevent overheating and prolongs the tool's lifespan, ensuring optimal performance even in high-temperature environments.

## APPLICATIONS

HPHT single crystal diamonds find applications across a broad range of industries. Some notable applications include precision cutting tools for non-ferrous and non-metallic materials, dressing tools for grinding wheels, wear parts for high-wear applications, wire drawing dies for the manufacturing of wires, and much more. The exceptional properties of our HPHT single crystal diamonds ensure outstanding performance, precision, and longevity in these applications.

Choose our HPHT single crystal diamonds for their superior quality, reliability, and versatility. Contact us today to discuss your requirements and explore how our HPHT diamonds can elevate your cutting, grinding, and manufacturing processes. Our team is dedicated to providing tailored solutions and assisting you in finding the perfect diamond shape and size for your specific application needs.

## QUALITY

We recognize the critical role that quality plays in delivering exceptional diamonds for various applications. Our rigorous quality assurance process includes a comprehensive set of tests to ensure the highest standards are met. Each single crystal HPHT diamond undergoes a dimensional check, where precise measurements are taken to verify its size and thickness against specified requirements. We also conduct thorough examinations using advanced techniques such as microscopy and spectroscopy

to assess the diamond's clarity, color, and purity. Additionally, a comprehensive analysis of the diamond's optical and thermal properties is carried out to ensure its performance and reliability. Through these stringent quality assurance tests, we guarantee that our single crystal HPHT diamonds surpass industry standards and provide our customers with exceptional quality and value for their diverse applications.



**Talk To Our Experts About Your Industrial Diamond Needs**



+353 61 475066



[enquiries@shannonabrasives.com](mailto:enquiries@shannonabrasives.com)