

# Syngrit

## Maxigrit

For applications demanding a coarse diamond grit with narrow sizing and excellent thermal properties, Element Six announces the availability of two new products designated NDG120 and CDG110 – the Maxigrit Series.

The ideal choice for applications involving exposure to high temperatures and long sintering cycles, these coarse sized grits are manufactured to the highest level of consistency with a tightly defined particle size distribution. The products in this new Series are derived from both cobalt-based and nickel-based diamond synthesis technologies which offer the tool designer a choice of products that meet a remarkably wide range of requirements.

### SIZING - STONES PER CARAT

For the new Maxigrit Series of products, special proprietary measurement and innovative sizing techniques have been developed allowing product sizing to be specified in stones per carat (SPC) as opposed to the more traditional methods of defining size within nominal sieve sizes.

This new system makes it possible to control the mean particle size as well as the particle size distribution. Diamond particle size is important to diamond tool performance: it limits the maximum particle protrusion height and, for a given concentration, determines the number of individual particles, and therefore active cutting points, in the tool. By selecting a specified spc range, a toolmaker can manufacture consistent tools for a given concentration.

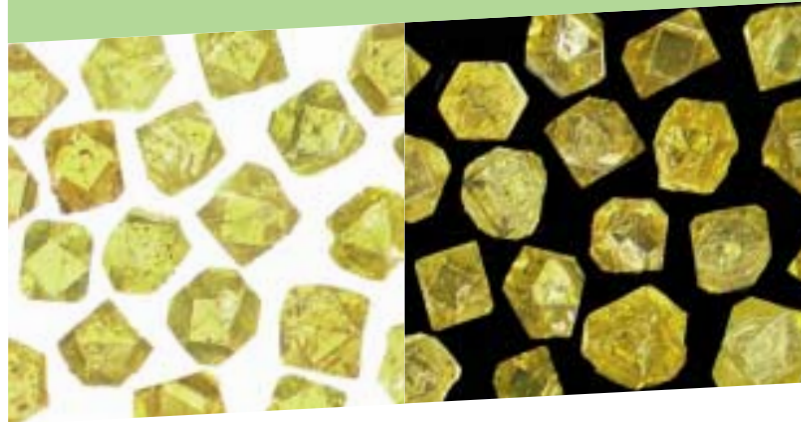
## Properties

### NDG120 -

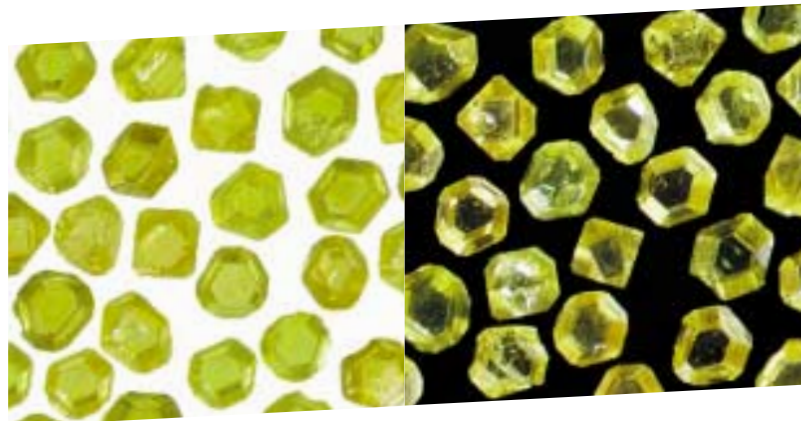
- Cubooctahedral with high strength and excellent thermal properties.

### CDG110 -

- Cubic faces with sharp edges.

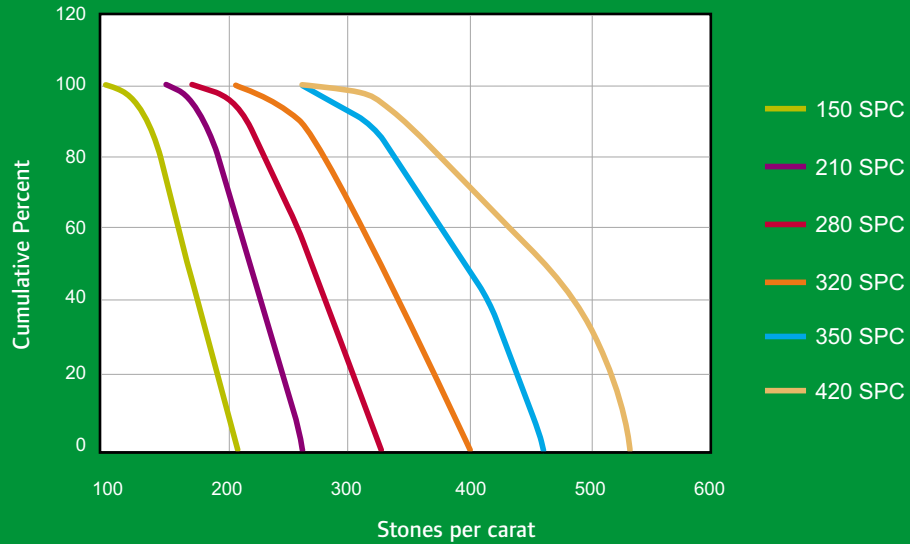


CDG110



NDG120

**TYPICAL STONES PER CARAT**  
Cumulative Distribution



**THE MAXIGRIT INDICATOR SYSTEM**

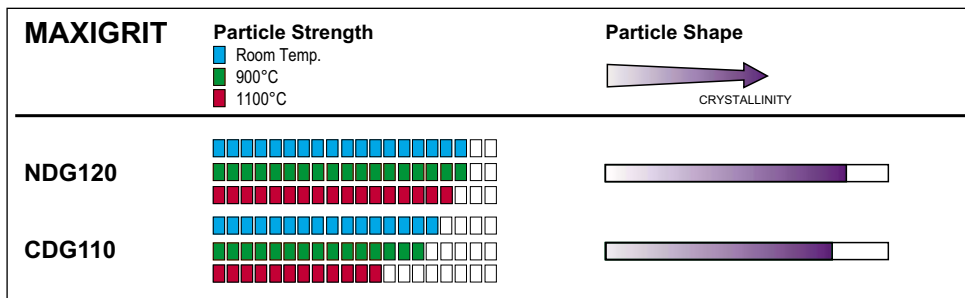
This system ranks the products in this Series in terms of relative Particle Strength and Particle Shape giving the toolmaker a valuable aid to grit selection.

**Particle Strength**

This Indicator relates to diamond particle strength at three different temperatures: room temperature, 900°C and 1100°C. The strength of each grit product is ranked relative to the other diamond grits within the respective product range. Since average particle strength increases as particle size decreases, Element Six has ensured that the relative ranking remains the same throughout the size range.

**Particle Crystallinity**

This Indicator gives a ranking based on the proportion of crystalline particles within each product. A particle is described as crystalline when it displays features such as a regular defined shape, smooth faces and a sharp edge definition. These particles are commonly associated with high strength grit and generally exhibit predictable breakdown characteristics in use. Particles described as less crystalline are more irregular in shape, with rough faces and less well defined edges. These particles are more free-cutting in appropriate applications and have improved bond retention.



**AVAILABILITY**

Standard Maxigrit products available are listed below.

SIZE AVAILABILITY						
Product	150 SPC	210 SPC	280 SPC	320 SPC	350 SPC	420SPC
NDG120*	•	•	•	•	•	•
CDG110*	•	•	•	•	•	•