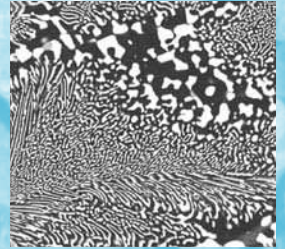
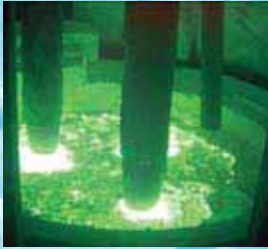




Grain Codes: 1620 and 1622 Coated Applications



Coated abrasives made with NorZon NV™ 1620 and 1622 demonstrate groundbreaking cutting abilities, bringing higher efficiency and lower force development to your applications. The grain, a 40 percent alumina-zirconia formulation, provides strength and resistance to dulling. Our unique electro-fusion process combines zircon sand, alumina and stabilizers at close to 1900°C or 3452°F. This recipe creates abrasive grains with controlled fracture properties engineered to give dramatic improvements in rapid stock removal operations. Depending on the grit size and applications, the effective cutting life of this

sharp, hard, durable grain is two to six times longer than ordinary abrasives.

NorZon NV™ 1620 and 1622 are especially suited for use in applications in which rapid medium-to-heavy stock removal is required. These grains offer enhanced performance on a variety of materials, including stainless and high alloy steels. NorZon NV™ will also out-perform traditional alumina-zirconia grains at lower applied pressure and power conditions.

In coated abrasives, NorZon NV™ 1620 and 1622 offer superior performance vs. the previous generation of 40 percent alumina-zirconia grains.

NorZon™ NV

| GRAIN CODE | GRAIN SHAPE | TREATMENT | SIZING CONVENTION | GRIT SIZES | APPLICATIONS |
|------------|-------------|-----------------|-------------------|------------|------------------|
| 1620 | Weak | Untreated | Modified FEPA P | 16-220 | Coated Abrasives |
| 1622 | Weak | Sodium Silicate | Modified FEPA P | 16-220 | Coated Abrasives |



Chemical Properties (Typical)

| CHEMICAL | PERCENT (%) |
|--|-------------|
| Aluminium Oxide (Al ₂ O ₃) | 53.0-60.0 |
| Zirconium Oxide (ZrO ₂ + HfO ₂) | 39.0-42.5 |
| Calcium Oxide (CaO) | Max 0.13 |
| Iron Oxide (Fe ₂ O ₃) | Max 0.20 |
| Magnesium Oxide (MgO) | Max 0.05 |
| Silica (SiO ₂) | Max 0.60 |
| Sodium Oxide (Na ₂ O) | Max 0.05 |
| Titanium Oxide (TiO ₂) | Max 2.00 |
| Yttria (Y ₂ O ₃) | Max 0.80 |

Physical Characteristics

| DESCRIPTION | MEASUREMENT |
|-------------------------------|------------------|
| Crystal size | 10-15 microns |
| True density | 4.68 gms/cc |
| Vickers hardness for 50g load | 19 GPa |
| Melting point | 1890°C |
| LPD range | 1.90-2.30 gms/cc |

Loose Packed Density Range ANSI B 74.4 1992 Test Unit A

| SIZE | 1620/1622 CA (MAX LPD) |
|------|------------------------|
| 20 | 2.22 |
| 24 | 2.16 |
| 30 | 2.16 |
| 36 | 2.14 |
| 40 | 2.06 |
| 50 | 1.97 |
| 60 | 1.95 |
| 80 | 1.97 |
| 100 | 1.92 |
| 120 | 1.93 |
| 150 | 1.93 |
| 180 | 1.93 |
| 220 | 1.90 |

Modified FEPA P Codes 1620 and 1622

| SIZE/SIEVE | OVERSIZE | COARSE GRIT | 1ST NOMINAL | 2ND NOMINAL | FINES | PAN |
|-------------|----------|-------------|--------------------|------------------------|------------------------|-------------|
| | 1 | 2 | 2 + 3 | 2 + 3 + 4 | 2 + 3 + 4 + 5 | -5 |
| P20/Limits | +12/0 | +16/(0-7) | (+16+18)/(34-50) | (+16+18+20)/(80-92) | (+16+18+20+25)/96+ | -25/(0-4) |
| P24/Limits | +14/0 | +18/(0-1) | (+18+20)/(10-18) | (+18+20+25)/(52-70) | (+18+20+25+30)/92+ | -30/(0-8) |
| P30/Limits | +16/0 | +20/(0-1) | (+20+25)/(10-18) | (+20+25+30)/(52-70) | (+20+25+30+35)/92+ | -35/(0-8) |
| 36T/Limits | +18/0 | +25/(0-5) | (+25+30)/(14-28) | (+25+30+35)/(58-76) | (+25+30+35+40)/90+ | -40/(0-10) |
| 40T/Limits | +25/0 | +35/(4-15) | (+35+40)/(48-73) | (+35+40+45)/(85-97) | (+35+40+45+50)/95+ | -50/(0-5) |
| 50T/Limits | +30/0 | +40/(3-10) | (+40+45)/(36-52) | (+40+45+50)/(80-92) | (+40+45+50+60)/94+ | -60/(0-6) |
| 60T/Limits | +35/0 | +45/(0-7) | (+45+50)/(15-35) | (+45+50+60)/(56-74) | (+45+50+60+70)/92+ | -70/(0-8) |
| 80T/Limits | +45/0 | +60/(0-7) | (+60+70)/(15-35) | (+60+70+80)/(56-74) | (+60+70+80+100)/92+ | -100/(0-8) |
| P100/Limits | +50/0 | +70/(0-1) | (+70+80)/(10-18) | (+70+80+100)/(52-70) | (+70+80+100+120)/92+ | -120/(0-8) |
| P120/Limits | +70/0 | +100/(0-7) | (+100+120)/(34-50) | (+100+120+140)/(80-92) | (+100+120+140+170)/96+ | -170/(0-4) |
| P150/Limits | +80/0 | +120/(0-3) | (+120+140)/(20-32) | (+120+140+170)/(66-84) | (+120+140+170+200)/96+ | -200/(0-4) |
| P180/Limits | +100/0 | +140/(0-2) | (+140+170)/(10-20) | (+140+170+200)/(50-74) | (+140+170+200+230)/90+ | -230/(0-10) |
| P220/Limits | +120/0 | +170/(0-2) | (+170+200)/(10-20) | (+170+200+230)/(50-74) | (+170+200+230+270)/90+ | -270/(0-10) |



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