

# NOBLE METALS



## Ceramics ACT<sup>®</sup> Platinum Coatings

ACT<sup>®</sup> (Advanced Coating Technology) is our proven technology for ceramic protection, with coating thickness from 200 to 500 microns in platinum and 10% rhodium/platinum. It gives complete corrosion resistance against attack of molten glass. It provides 100% shape retention for the lifetime of the coating.

### Ceramic Type

Sintered ceramics such as recrystallised alumina, zircon mullite and sillimanite are coated using a mix of flame and plasma deposition. They can be supplied as single items, or sets of forehearth and feeder consumables. In critical furnace areas, such as throats, ACT<sup>®</sup> coatings are provided on fused cast ceramic blocks. Johnson Matthey can assess the coatability of substrates that are not mentioned.

Ceramic Type	Manufacturer	Application
333, 311, 315	Emhart, PSR, SEFPRO, Toshiba	Feeder expendables
Zirmul	NARCO	Feeder expendables
ZK20S	P-D Refractories GmbH	Feeder expendables
KR90AH, ZM20RH	VGT - Dyko	Feeder expendables
ZA33, BPAL	SEFPRO	Forehearth channel, danners
AZS ER1711	SEFPRO	Furnace blocks
Alsint 99.7	Haldenwanger	Thermocouple sheaths

### Ceramic Quality

Surface finish and cleanliness of ceramic substrates are key parameters affecting the success of the ACT<sup>®</sup> coating process. All ceramic parts are inspected upon receipt and the following criteria should be met:

1. Surface completely clean over area to be coated
2. No finger prints over area to be coated
3. No greasy marks over area to be coated
4. No pencil / pen / ink / crayon marks over area to be coated
5. No sellotape / masking tape marks over area to be coated
6. No stains over area to be coated
7. No metallic spots over area to be coated
8. No surface cracks in the area to be coated, with a crack width greater than 0.25mm
9. Slip-cast or bonded ceramics should have a minimal amount of surface porosity.

Fused cast/AZS surfaces should be machined, plane (even and uniform flat surface) and with a porosity level equivalent to S3/S4 (SEFPRO quality standards).

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If the ceramic substrate is taken from stock, all available parts should be evaluated against the above criteria so that the best substrate is selected. It is recommended to send one or two spare parts for each specific job.

Some ceramics sent to Johnson Matthey arrive broken due to poor packing. The ceramic should be in bubble wrap or alternative packaging materials should be used to protect the substrate from physical damage. Finally, they should be encased in double-thick cardboard or wooden boxes.

### Disposal of ACT<sup>®</sup> Coated Ceramics

Johnson Matthey offers full precious metal recovery for all ACT<sup>®</sup> coatings.

When an ACT<sup>®</sup> coated part is produced by Johnson Matthey, it is given a unique ACT<sup>®</sup> reference number. This number appears on the item and on a metal tag, which is always included in the packing box.

When an ACT<sup>®</sup> coated part arrives at the end of its life cycle, it should be cleaned of glass residues and sent for refining. The metal tag should be returned. Alternatively, the ACT<sup>®</sup> reference number should be recorded on the paperwork sent with the goods. This will ensure correct identification of the ACT<sup>®</sup> part and enable prompt refining and swift metal return.

All parts are inspected upon receipt. They should be returned intact for Johnson Matthey to assess any metal loss that could have incurred during service or removal. This will avoid delays in the refining process and eliminates discrepancy over metal weights.



If you require more information on Johnson Matthey Noble Metals products please contact our technical support team.

**Europe**  
Johnson Matthey, Noble Metals,  
Orchard Road, Royston,  
Hertfordshire, SG8 5HE UK  
Tel: +44 (0) 1763 253000 Fax: +44 (0) 01763 25313  
E-mail: nobleuk@matthey.com

**North America**  
Johnson Matthey, Noble Metals,  
1401 King Road  
Pennsylvania 19380- 1497 USA  
Tel: (1) 610 648 8000 Fax: (1) 610 648 8105  
E-mail: nobleww@jmus.com

**Asia**  
Johnson Matthey Hong Kong Ltd  
Suite 2801, Tower 6, The Gateway,  
9 Canton Road, Tsimshatsui, Kowloon, Hong Kong  
Tel: (852) 2738 0380 Fax: (852) 2736 2345  
E-mail: jmhk@matthey.com