

# Product Development Services

## Developing Partnerships through New Products



### “You choose it, We fuse it”

At Washington Mills, we offer a unique Product Development Service to companies looking to experiment with ideas for new material formulations. We specialize in creating sample size custom fusions through our pilot scale furnace. Our fully equipped pilot processing plant is designed to create experimental lots of various mineral types. We've invested in equipment specially engineered for small-scale product development work so that you may test and produce sample sized quantities of your new product idea with no costly capital investment.

### Custom Fusions

*Our Capabilities:*

- you choose the material and we'll fuse it for you
- electric-arc furnaces specially designed for fusing small quantities
- custom fusions as small as five pounds or as large as three hundred tons
- over 100 combined years of electric-arc fusion and materials expertise

### Pilot Processing Plant

*Our Capabilities:*

- crushing, grinding and magnetically separating materials
- heat treating and surface treating new product compositions
- integrated resources for engineering, manufacturing and research
- extensive know-how on scaling up from lab to production

**WASHINGTON MILLS**

# Turn Your Ideas into a Reality

Washington Mills' Research and Development engineers have created an impressive range of new exotic fused minerals for customers looking to test new fused mineral formulations or improve the performance of existing materials. We can co-fuse varying percentages of several oxides together according to your preferences. The following is a list of some of the materials we have custom fused:

EXAMPLES OF MATERIALS FUSED IN OUR EXPERIMENTAL FURNACES	
ALUMINA-ZIRCONIA 80% – 20% / 60% – 40%	CERIUM OXIDE
ALUMINA-ZIRCONIA-MAGNESIA 57% – 10% – 32%	ERBIUM OXIDE
ALUMINA-ZIRCONIA-TITANIA 72% – 26% – 2%	LANTHANUM OXIDE
ALUMINA-CHROME OXIDE $CR_2O_3$ VARIED BY 0.3% – 99%	LIME-MAGNESIA-ALUMINA-SILICA 37% – 7% – 12% – 48%
ALUMINA-NICKEL OXIDE 56% – 44%	MAGNESIA-CHROME OXIDE 20% – 80%
ALUMINA-TITANIA-YTTRIA 94% – 3% – 3%	MAGNESIA-ALUMINA-ZIRCONIA 82% – 13% – 5%
ALUMINUM-TITANIA 98% – 2% / 87% – 13% / 60% – 40%	MAGNESIA-CHROME-ALUMINA-IRON OXIDE 64% – 19% – 6% – 11%
ALUMINA-SILICA-ZIRCONIA-TITANIA 70% – 20% – 5% – 2%	MAGNESIA-SILICA 55% – 45% (FORSTERITE)
ALUMINA-MAGNESIA-SILICA 14% – 35% – 51% (CORDIERITE)	PRASEODYMIUM OXIDE
CALCIA STABILIZED ZIRCONIA	TIO <sub>2</sub> (FUSED TITANIA)
CALCIA-SILICA 64% – 34% (LARNITE)	ZIRCONIA-DYSPROSIUM OXIDE
CALCIA-YTTRIA-MANGANESE OXIDE 26% – 25% – 49%	ZIRCONIUM-DYPROSIUM-INDIUM OXIDE
CALCIUM OXIDE (FUSED LIME)	ZIRCONIA-YTTERBIUM OXIDE

## Developing Partnerships

Take advantage of our expertise by working directly with our fusion and ceramic specialists. Washington Mills' skilled engineers have over 100 combined years of electric-arc fusion and materials experience and are ready to work with your R&D personnel to turn your new product idea into a reality. All product development services are provided in complete confidence.



### Getting Started

To find out more about our Product Development Services, please direct your inquiry to:

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 1801 Buffalo Ave  
 Niagara Falls, NY 14302  
 800-828-1666 or e-mail [info@washingtommills.com](mailto:info@washingtommills.com)