

# Melted Products Delivery Programme and Applications

## **Chromium Metal**

- Superalloys for aerospace and land based turbines
- Electrical resistance wire
- Nickel alloys for industrial engineering
- Atomised hardfacing alloys for thermal spraying
- Medical alloys

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## **Ferro Niobium (vacuum grade)**

- Superalloys for aerospace and land based turbines
- Nickel alloys for industrial engineering

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## **High Carbon Chromium Metal**

- Atomised hardfacing alloys for thermal spraying

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## **Nickel Boron**

- Atomised hardfacing alloys for

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## **70% Ferro Titanium**

- Automotive interstitial free steels
- HSLA steels for pipeline applications
- Stainless steels

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## **Ferro Boron**

- Magnet alloys
- Steels

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## **Hypercal**

- Steels
- Cast irons

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These products are supplied in accordance with a Quality Assurance system which meets the standards of ISO9001.

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# Nickel Boron

## Production Method:

Carbothermic reduction.

## Size & Packaging:

Available to customers' requirements.

### Chemical analysis in wt%

| Grade | Regular Grade<br>REG NiB | Low C Grade<br>LC NiB | Ultra Low C<br>ULC NiB |
|-------|--------------------------|-----------------------|------------------------|
| B     | 15.0 – 20.0%             | 14.0 – 18.0%          | 14.0 – 18.0%           |
| Si    | 0.50% max                | 0.50% max             | 0.50% max              |
| Al    | 0.20% max                | 0.20% max             | 0.20% max              |
| Fe    | 3.0% max                 | 3.0% max              | 3.0% max               |
| S     | 0.005% max               | 0.005% max            | 0.005% max             |
| P     | 0.02% max                | 0.02% max             | 0.02% max              |
| C     | 0.50% max                | 0.15% max             | 0.05% max              |
| Ni    | Balance                  | Balance               | Balance                |

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# Ferro Boron

**Production Method:**

Carbothermic reduction.

**Size & Packaging:**

Available to customers' requirements.

| Chemical analysis in wt% |              |
|--------------------------|--------------|
| Grade                    | FeB          |
| B                        | 17.0 – 20.0% |
| C                        | 0.50% max    |
| Al                       | 0.20% max    |
| S                        | 0.01% max    |
| Si                       | 0.50% max    |
| P                        | 0.05% max    |
| Fe                       | Balance      |

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# Boron Containing Powders

## Production Method:

Carbothermic reduction or induction furnace melted.

## Size & Packaging:

Available to customers' requirements, and size controlled by particle size analysis.

### Chemical analysis in wt%

| Alloy | FeB          | FeSiB        | NiB          | CrB          |
|-------|--------------|--------------|--------------|--------------|
| B     | 17.0 – 20.0% | 3.5 – 5.5%   | 15.0 – 20.0% | min 15.0%    |
| C     | 0.50% max    | 0.25% max    | 0.50% max    | 4.0 – 7.0%   |
| Al    | 0.25% max    | 0.75% max    | 0.20% max    | 0.35% max    |
| Si    | 0.50% max    | 19.0 – 23.0% | 0.80% max    | 1.0% max     |
| S     | 0.01% max    | 0.02% max    | 0.02% max    | 0.05% max    |
| P     | 0.05% max    | 0.04% max    | 0.02% max    | 0.05% max    |
| Fe    | Main balance | Main balance | 3.0% max     | 5.0% max     |
| Ni    | -            | -            | Main balance | -            |
| Cr    | -            | -            | -            | Main balance |

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