

## SAFETY DATA SHEET (MSDS) — HIGH CARBON FERRO MANGANESE (HC FeMn)

|                    |                                                                                                                                                                                                            |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Document No.       | ATB-SDS-FEALLOY-HCFEMN-2026-001                                                                                                                                                                            |
| Revision           | Rev.00                                                                                                                                                                                                     |
| Issue Date         | 26 October 2026                                                                                                                                                                                            |
| Format             | Prepared with reference to the UN GHS (Rev.10), Regulation (EC) No 1907/2006 Annex II as amended by Regulation (EU) 2020/878, Regulation (EC) No 1272/2008 (CLP) and the Turkish KKDİK and SEA Regulations |
| Companion Document | Technical Data Sheet (TDS) ATB-TDS-FEALLOY-HCFEMN-2026-001                                                                                                                                                 |

### SECTION 1. IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

#### 1.1 Product Identifier

|                |                                    |
|----------------|------------------------------------|
| Product Name   | High Carbon Ferro Manganese        |
| Abbreviation   | HC FeMn                            |
| Grades Covered | HC FeMn 65, HC FeMn 70, HC FeMn 75 |
| Product Type   | Alloy (special mixture)            |

#### 1.2 Relevant Identified Uses and Uses Advised Against

|                      |                                                                                                                                                                                          |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identified Uses      | Industrial use only: manganese addition and deoxidation in carbon and low-alloy steels; foundry and cast iron applications; manganese units in high-manganese and wear-resistant steels. |
| Uses Advised Against | Consumer use; any use other than the identified industrial uses.                                                                                                                         |

#### 1.3 Details of the Supplier

|           |                                                                                                                        |
|-----------|------------------------------------------------------------------------------------------------------------------------|
| Company   | ATABAŞ GLOBAL DIŞ TİCARET ANONİM ŞİRKETİ                                                                               |
| Address   | Huzur Mahallesi, Azerbaycan Caddesi, Skyland İstanbul 4 B Blok, 27. Kat, Daire 389-390-391, Sarıyer, İstanbul, Türkiye |
| Telephone | +90 212 801 64 60                                                                                                      |
| E-mail    | ceo@atabas.com.tr                                                                                                      |
| Website   | www.atabas.com.tr                                                                                                      |

#### 1.4 Emergency Telephone Number

|                                              |                                                        |
|----------------------------------------------|--------------------------------------------------------|
| Company (office hours)                       | +90 212 801 64 60 (Monday – Friday, 09:00 – 18:00 TRT) |
| National Poison Information Centre (Türkiye) | UZEM 114 (24 hours)                                    |

### SECTION 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the Mixture

|                                |                                                                                                     |
|--------------------------------|-----------------------------------------------------------------------------------------------------|
| Massive (Lump) Form            | Not classified as hazardous under GHS / CLP criteria.                                               |
| Dust / Fines (where generated) | STOT RE 1 / 2, H372 / H373 (central nervous system, by inhalation), as applicable to particle size. |



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## 2.2 Label Elements

The massive form requires no hazard labelling. For the classified form the following label elements apply:

| Form         | Pictogram             | Signal Word      | Hazard Statements | Precautionary Statements |
|--------------|-----------------------|------------------|-------------------|--------------------------|
| Dust / fines | GHS08 (health hazard) | Danger / Warning | H372 / H373       | P260, P280, P314, P501   |

## 2.3 Other Hazards

- Moist or wet material introduced into molten metal or slag can cause violent steam explosions and ejection of molten metal.
- Fumes generated during melting, cutting or welding may contain manganese oxides.
- Fine dust may form explosive mixtures with air.
- PBT / vPvB assessment: not applicable to inorganic alloys.

## SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

The product is an alloy (special mixture) of the elements listed below. Concentration ranges cover all grades listed in Section 1. Phosphorus, sulphur and other residual elements are present at trace levels as stated in the Technical Data Sheet.

| Component | CAS No.   | Content (% w/w) |
|-----------|-----------|-----------------|
| Manganese | 7439-96-5 | 65 – 80         |
| Carbon    | 7440-44-0 | ≤ 8.0           |
| Silicon   | 7440-21-3 | ≤ 1.5           |
| Iron      | 7439-89-6 | Balance         |

## SECTION 4. FIRST-AID MEASURES

### 4.1 Description of First-Aid Measures

|              |                                                                                                                                                    |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation   | Remove the person to fresh air and keep at rest. If breathing is difficult, give oxygen by trained personnel. Obtain medical attention.            |
| Skin Contact | Remove contaminated clothing. Wash skin with soap and water. For burns from hot material, cool with clean water and obtain medical attention.      |
| Eye Contact  | Rinse immediately with plenty of water for at least 15 minutes, holding eyelids open. Do not rub. Obtain medical attention if irritation persists. |
| Ingestion    | Rinse mouth with water. Do not induce vomiting. Obtain medical attention if symptoms develop.                                                      |

### 4.2 Most Important Symptoms and Effects

- Dust: mechanical irritation of the eyes and respiratory tract.
- Prolonged or repeated inhalation of manganese dust or fume: effects on the central nervous system.
- Metal oxide fumes: metal fume fever (flu-like symptoms, fever, chills), which may appear several hours after exposure.

### 4.3 Immediate Medical Attention

No specific antidote. Treat symptomatically.



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## SECTION 5. FIRE-FIGHTING MEASURES

|                                       |                                                                                                                                                                              |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Suitable Extinguishing Media</b>   | Massive material is not combustible. For burning fines or dust: dry sand, dry graphite powder, Class D metal-fire extinguishing powder, dry dolomite or dry magnesium oxide. |
| <b>Unsuitable Extinguishing Media</b> | Water, foam and carbon dioxide on burning metal fines; water jet on hot or molten material.                                                                                  |
| <b>Specific Hazards</b>               | metal oxide fumes in a fire; dust explosion of fines.                                                                                                                        |
| <b>Advice for Fire-Fighters</b>       | Wear self-contained breathing apparatus and full protective clothing. Avoid raising dust. Keep unaffected material dry.                                                      |

## SECTION 6. ACCIDENTAL RELEASE MEASURES

|                                  |                                                                                                                                         |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personal Precautions</b>      | Avoid dust formation and inhalation; wear the personal protective equipment listed in Section 8. Ventilate enclosed areas before entry. |
| <b>Environmental Precautions</b> | Prevent entry into drains, sewers and watercourses.                                                                                     |
| <b>Clean-Up Methods</b>          | Collect mechanically (shovel, vacuum with suitable filter) into dry, closed and labelled containers for reuse or disposal.              |

## SECTION 7. HANDLING AND STORAGE

### 7.1 Precautions for Safe Handling

- Minimise dust generation; use local exhaust ventilation at crushing, screening and transfer points.
- Ensure material added to molten metal is dry; preheat additions where practicable.
- Keep fines and dust away from ignition sources; earth equipment handling powders.
- Do not eat, drink or smoke in work areas; wash hands after handling.

### 7.2 Conditions for Safe Storage

- Store in dry, covered and well-ventilated areas, protected from rain, condensation and standing water.
- Store away from acids, alkalis and oxidising agents.

### 7.3 Specific End Uses

Metallurgical use as described in Section 1.2.

## SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Occupational Exposure Limits (8-hour TWA)

National occupational exposure limits (in Türkiye: Kimyasal Maddelerle Çalışmalarda Sağlık ve Güvenlik Önlemleri Hakkında Yönetmelik) prevail where they differ from the reference values below.

| Substance                                 | EU IOELV / BOELV                                                   | ACGIH TLV                                                          |
|-------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|
| Manganese and inorganic compounds (as Mn) | 0.2 mg/m <sup>3</sup> inhalable; 0.05 mg/m <sup>3</sup> respirable | 0.1 mg/m <sup>3</sup> inhalable; 0.02 mg/m <sup>3</sup> respirable |
| Iron oxide (as Fe)                        | —                                                                  | 5 mg/m <sup>3</sup> respirable                                     |
| Particles not otherwise specified         | —                                                                  | 10 mg/m <sup>3</sup> inhalable; 3 mg/m <sup>3</sup> respirable     |



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## 8.2 Exposure Controls

|                                        |                                                                                                                                 |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Engineering Controls</b>            | Local exhaust ventilation and dust extraction at handling points; general ventilation of storage areas and enclosed spaces.     |
| <b>Eye Protection</b>                  | Safety glasses with side shields (EN 166); face shield near molten metal.                                                       |
| <b>Hand Protection</b>                 | Mechanical-resistance work gloves (EN 388); heat-resistant gloves (EN 407) near hot material.                                   |
| <b>Respiratory Protection</b>          | FFP2 / FFP3 particle filter respirator (EN 149) where dust is generated.                                                        |
| <b>Skin and Body Protection</b>        | Work clothing covering arms and legs, safety footwear (EN ISO 20345); aluminised or flame-retardant clothing near molten metal. |
| <b>Environmental Exposure Controls</b> | Prevent release of dust to the environment; use filters on extraction systems.                                                  |

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

|                                      |                                                |
|--------------------------------------|------------------------------------------------|
| <b>Physical State</b>                | Solid                                          |
| <b>Appearance</b>                    | Metallic grey to silver-grey lumps             |
| <b>Odour</b>                         | Odourless                                      |
| <b>Indicative Density (g/cm³)</b>    | 7.1 – 7.3                                      |
| <b>Indicative Melting Range (°C)</b> | 1,250 – 1,330                                  |
| <b>pH</b>                            | Not applicable                                 |
| <b>Flash Point</b>                   | Not applicable                                 |
| <b>Flammability</b>                  | Non-flammable in massive form                  |
| <b>Explosive Properties</b>          | Fine dust may form explosive mixtures with air |
| <b>Oxidising Properties</b>          | None                                           |
| <b>Vapour Pressure</b>               | Not applicable                                 |
| <b>Solubility in Water</b>           | Insoluble                                      |

## SECTION 10. STABILITY AND REACTIVITY

|                                           |                                                                                        |
|-------------------------------------------|----------------------------------------------------------------------------------------|
| <b>Reactivity</b>                         | Not reactive under normal conditions of storage and use; reacts with strong acids.     |
| <b>Chemical Stability</b>                 | Stable under dry storage conditions.                                                   |
| <b>Possibility of Hazardous Reactions</b> | Violent steam explosion if wet material contacts molten metal.                         |
| <b>Conditions to Avoid</b>                | Moisture, water, dust generation, ignition sources near fines.                         |
| <b>Incompatible Materials</b>             | Acids, alkalis, strong oxidising agents, halogens.                                     |
| <b>Hazardous Decomposition Products</b>   | None under dry conditions. Metal oxide fumes at high temperature; hydrogen with acids. |



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## SECTION 11. TOXICOLOGICAL INFORMATION

|                                          |                                                                                                                                                                            |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Acute Toxicity</b>                    | Massive form: no acute toxicity expected.                                                                                                                                  |
| <b>Skin Corrosion / Irritation</b>       | Not classified; dust may cause mechanical irritation.                                                                                                                      |
| <b>Serious Eye Damage / Irritation</b>   | Not classified; dust may cause mechanical irritation.                                                                                                                      |
| <b>Respiratory or Skin Sensitisation</b> | Not classified.                                                                                                                                                            |
| <b>Germ Cell Mutagenicity</b>            | Not classified.                                                                                                                                                            |
| <b>Carcinogenicity</b>                   | Not classified.                                                                                                                                                            |
| <b>Reproductive Toxicity</b>             | Not classified.                                                                                                                                                            |
| <b>STOT – Single Exposure</b>            | Dust may cause respiratory tract irritation; metal fume fever from fumes.                                                                                                  |
| <b>STOT – Repeated Exposure</b>          | Prolonged or repeated inhalation of manganese-containing dust or fume may cause damage to the central nervous system (tremor, impaired coordination, behavioural changes). |
| <b>Aspiration Hazard</b>                 | Not applicable.                                                                                                                                                            |

## SECTION 12. ECOLOGICAL INFORMATION

|                                      |                                                                                                                                                                             |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Toxicity</b>                      | The massive alloy is insoluble with low bioavailability. Dissolved metal ions released from fines over time may be harmful to aquatic organisms at elevated concentrations. |
| <b>Persistence and Degradability</b> | Not applicable to inorganic alloys.                                                                                                                                         |
| <b>Bioaccumulative Potential</b>     | Not expected for the massive form.                                                                                                                                          |
| <b>Mobility in Soil</b>              | Low mobility of the massive form.                                                                                                                                           |
| <b>PBT / vPvB Assessment</b>         | Not applicable.                                                                                                                                                             |
| <b>Other Adverse Effects</b>         | Avoid release of dust and fines to the environment.                                                                                                                         |

## SECTION 13. DISPOSAL CONSIDERATIONS

- Recycling into metallurgical processes is the preferred route for off-specification material, fines and residues.
- Disposal shall be carried out by licensed operators in accordance with local regulations (in Türkiye: Atık Yönetimi Yönetmeliği; in the EU: Directive 2008/98/EC).
- Suggested European Waste Catalogue codes: 16 03 04 (inorganic off-specification material); 15 01 02 (plastic packaging); 15 01 04 (metallic packaging).

## SECTION 14. TRANSPORT INFORMATION

|                                            |                                                                                                                                                                    |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>UN Number</b>                           | Not regulated                                                                                                                                                      |
| <b>UN Proper Shipping Name</b>             | Not applicable                                                                                                                                                     |
| <b>Transport Hazard Class (Subsidiary)</b> | Not applicable                                                                                                                                                     |
| <b>Packing Group</b>                       | Not applicable                                                                                                                                                     |
| <b>Modes Covered</b>                       | IMDG Code (sea), ADR (road), RID (rail), ICAO-TI / IATA DGR (air)                                                                                                  |
| <b>Solid Bulk Carriage (IMSBC Code)</b>    | Group C, where so assessed by the shipper                                                                                                                          |
| <b>Environmental Hazards</b>               | Not classified as marine pollutant                                                                                                                                 |
| <b>Special Precautions</b>                 | Keep dry; protect from rain and seawater ingress. For bulk carriage, the shipper shall provide the cargo declaration and documentation required by the IMSBC Code. |
| <b>MARPOL Annex II</b>                     | Not applicable                                                                                                                                                     |



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## SECTION 15. REGULATORY INFORMATION

### 15.1 Safety, Health and Environmental Regulations

- This MSDS has been prepared with reference to the UN GHS (Rev.10), Regulation (EC) No 1907/2006 (REACH) Annex II as amended by Regulation (EU) 2020/878, Regulation (EC) No 1272/2008 (CLP), the Turkish KKDİK Regulation and the Turkish SEA Regulation.
- Registration obligations under REACH, KKDİK or similar chemical regimes, where applicable, rest with the importer of record in the relevant jurisdiction.
- Occupational exposure limits: Directives 2000/39/EC, 2006/15/EC, (EU) 2017/164 and (EU) 2017/2398, and national legislation.
- Transport: IMDG Code, IMSBC Code, ADR, RID and ICAO-TI / IATA DGR.

### 15.2 Chemical Safety Assessment

A chemical safety assessment has not been carried out by the supplier for this alloy.

### 15.3 Sanctions and Trade Compliance

ATABAŞ GLOBAL DIŞ TİCARET ANONİM ŞİRKETİ conducts its business in full compliance with the economic and trade sanctions regimes administered by the United States (OFAC), the European Union, the United Kingdom (OFSI) and the United Nations Security Council. ATABAŞ does not work with sanctioned countries, sanctioned companies, sanctioned individuals or sanctioned vessels, and does not supply, source, finance or transport goods in breach of these regimes.

All counterparties are subject to Know-Your-Customer and sanctions screening before contract signature and throughout performance. ATABAŞ reserves the right to suspend or terminate any transaction which may expose it to sanctions risk.

## SECTION 16. OTHER INFORMATION

### 16.1 Revision Information

Rev.00, 26 October 2026: first issue.

### 16.2 Full Text of Hazard Statements

| Code | Statement                                                          |
|------|--------------------------------------------------------------------|
| H372 | Causes damage to organs through prolonged or repeated exposure.    |
| H373 | May cause damage to organs through prolonged or repeated exposure. |

### 16.3 Abbreviations

| Abbreviation  | Meaning                                                                                               |
|---------------|-------------------------------------------------------------------------------------------------------|
| ACGIH TLV     | American Conference of Governmental Industrial Hygienists Threshold Limit Value                       |
| BOELV / IOELV | Binding / Indicative Occupational Exposure Limit Value (EU)                                           |
| CLP           | Classification, Labelling and Packaging Regulation (EC) No 1272/2008                                  |
| GHS           | Globally Harmonized System of Classification and Labelling of Chemicals                               |
| IMSBC         | International Maritime Solid Bulk Cargoes Code                                                        |
| KKDİK / SEA   | Turkish chemical registration regulation / Turkish classification, labelling and packaging regulation |
| MHB           | Materials Hazardous only in Bulk                                                                      |
| STEL / TWA    | Short-Term Exposure Limit / Time-Weighted Average                                                     |
| STOT RE       | Specific Target Organ Toxicity – Repeated Exposure                                                    |



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#### 16.4 Disclaimer

The information in this Safety Data Sheet is given in good faith and relates only to the product described. It is intended to support safe handling, storage, transport and use and does not constitute a specification or a warranty of any particular property. Users are responsible for complying with all applicable laws and for assessing the suitability of the product and of these precautions for their own operations.

|                                      |                                                                          |
|--------------------------------------|--------------------------------------------------------------------------|
| <b>Prepared By</b>                   | Technical & Quality Department, ATABAŞ GLOBAL DIŞ TİCARET ANONİM ŞİRKETİ |
| <b>Approved By</b>                   | Hakan ATABAŞ, Founder & CEO                                              |
| <b>Date</b>                          | 26 October 2026                                                          |
| <b>Signature &amp; Company Stamp</b> |                                                                          |



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