MATERIAL SAFETY DATA SHEET

Black Iron Oxide
C.A.S. Number: 1317-61-9

SECTION I – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT/MATERIAL: FE-602

MANUFACTURER/DISTRIBUTOR: Atlantic Equipment Engineers
ADDRESS: 13 Foster Street, P.O. Box 181
Bergenfield, NJ 07621

TELEPHONE/FAX NUMBERS: (201) 384-5606 / (201) 387-0291
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(703) 527-3887 (Outside the U.S.A.)

TRADE NAME: Black Iron Oxide
CHEMICAL NAME: Magnetite
CHEMICAL FORMULA: Fe₃O₄
COLOUR INDEX: Pigment Black 11:77499
CAS NUMBER: 1317-61-9 [12227-89-3 Europe]
EINECS NUMBER: 2354425

HMIS RATING:

- HEALTH: 0
- FLAMMABILITY: 1
- REACTIVITY: 1

SECTION II – COMPOSITION:

<table>
<thead>
<tr>
<th>INGREDIENT NAME:</th>
<th>CAS NUMBER:</th>
<th>PERCENT:</th>
<th>EXPOSURE LIMITS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRON OXIDE BLACK</td>
<td>1317-61-9</td>
<td>100</td>
<td>ACGIH TLV: 10 mg/m³ TWA</td>
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<td></td>
<td></td>
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<td>OSHA PEL: 15 mg/m³ TWA</td>
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</tbody>
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SECTION III – HAZARDS IDENTIFICATION:

EMERGENCY OVERVIEW: NO UNUSUAL FIRE OR SPILL HAZARD. LOW HEALTH RISK BY INHALATION. MAY BE SUBJECT TO SLOW OXIDATION IF STORED AT TEMPERATURES ABOVE 140 °F.

POTENTIAL HEALTH EFFECTS:

- EYES: MAY CAUSE MECHANICAL IRRITATION.
- SKIN: NONE
- INHALATION: LOW HEALTH RISK BY INHALATION. TREAT AS A NUISANCE DUST.
- ORAL LD₅₀: GREATER THAN 10 g/kg (RAT)
EFFECTS OF OVEREXPOSURE:

**ACUTE** - CAUSES MECHANICAL SKIN AND EYE IRRITATION.

**CHRONIC** - PROLONGED INHALATION OF IRON OXIDE DUST IS KNOWN TO PRODUCE A CONDITION KNOWN AS SIDEROSIS. ON X-RAYS IT APPEARS TO BE A BENIGN PNEUMOCONIOSIS AND IS NOT ASSOCIATED WITH PULMONARY FIBROSIS OR DISABILITY UNLESS THERE IS CONCURRENT EXPOSURE TO OTHER FIBROSIS-PRODUCING MATERIALS SUCH AS SILICA. THE TLV IS SET TO PROTECT AGAINST SIDEROSIS.

CARCINOGENICITY: NOT LISTED WITH NTP, IARC, OR OSHA AS A KNOWN OR SUSPECTED CARCINOGEN.

SECTION IV – FIRST AID MEASURES:

**EYES:** FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. CONSULT A PHYSICIAN IF IRRITATION PERSISTS.

**SKIN:** WASH WITH SOAP AND WATER.

**INHALATION:** REMOVE TO FRESH AIR. IF BREATHING IS LABORED OR STOPPED, GIVE ARTIFICIAL RESPIRATION. GET IMMEDIATE MEDICAL ATTENTION.

**INGESTION:** IF SWALLOWED, DILUTE WITH LARGE AMOUNTS OF WATER TO INDUCE VOMITING. CONSULT A PHYSICIAN.

SECTION V – FIRE FIGHTING MEASURES:

**FLAMMABLE PROPERTIES:** NON-FLAMMABLE

**FLASH POINT** - NONE

**FLAMMABLE LIMITS** - NOT APPLICABLE

**AUTO-IGNITION TEMPERATURE** - NOT APPLICABLE

**HAZARDOUS COMBUSTION PRODUCTS:** NONE

**EXTINGUISHING MEDIA:** USE EXTINGUISHING AGENT APPLICABLE TO SURROUNDING FIRE. IF OXIDATION STARTS, THE MATERIAL SHOULD BE COOLED WITH WATER TO DISSIPATE THE HEAT.

**FIRE FIGHTING INSTRUCTIONS:** FIRE FIGHTERS SHOULD WEAR NIOSH APPROVED, POSITIVE PRESSURE, SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE CLOTHING WHEN APPROPRIATE.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** BLACK IRON OXIDE MAY BE SUBJECT TO RAPID OXIDATION IF STORED AT TEMPERATURES ABOVE 140 ºF.

SECTION VI – ACCIDENTAL RELEASE MEASURES:

**SMALL/LARGE SPILL:** CLEAN UP USING DRY PROCEDURES; AVOID DUSTING.

SECTION VII – HANDLING AND STORAGE:

**HANDLING:** GOOD INDUSTRIAL HYGIENE PRACTICE REQUIRES THAT EMPLOYEE EXPOSURE BE MAINTAINED BELOW TLV. THIS IS PREFERABLY ACHIEVED THROUGH THE PROVISION OF ADEQUATE VENTILATION WHERE NECESSARY. WHERE DUST CANNOT BE CONTROLLED IN THIS WAY, PERSONAL RESPIRATORY PROTECTION SHOULD BE EMPLOYED.

**STORAGE:** STORE IN A CLEAN, DRY AREA AT AMBIENT TEMPERATURE IN ORIGINAL UNOPENED CONTAINERS. CONDITIONS OF HIGH HUMIDITY MAY REQUIRE STORAGE IN A CONTROLLED ENVIRONMENT. STORE AT TEMPERATURES WELL BELOW 140 ºF.
SECTION VIII – EXPOSURE CONTROLS:

ENGINEERING CONTROLS: USE WITH ADEQUATE VENTILATION TO MEET EXPOSURE LIMITS LISTED IN SECTION II.

RESPIRATORY PROTECTION: NIOSH APPROVED DUST RESPIRATOR IF OVEREXPOSURE POTENTIAL EXISTS.

SKIN PROTECTION: LEATHER OR RUBBER GLOVES.

EYE PROTECTION: SAFETY GLASSES, GOGGLES, OR FACE SHIELD RECOMMENDED.

SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES:

APPEARANCE: BLACK POWDER

BOILING POINT: NOT APPLICABLE

VAPOR PRESSURE: NOT APPLICABLE

VAPOR DENSITY: NOT APPLICABLE

SOLUBILITY IN WATER: INSOLUBLE

SPECIFIC GRAVITY: 4.8 - 5.1

pH: NOT DETERMINED

ODOR: NONE

ODOR THRESHOLD: NOT APPLICABLE

SECTION X – STABILITY AND REACTIVITY:

CONDITIONS TO AVOID: MATERIAL IS NOT STABLE IF STORED AT TEMPERATURES ABOVE 140 °F.

INCOMPATIBILITY: STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS: NONE

HAZARDOUS POLYMERIZATION: NONE

SECTION XI – TOXICOLOGICAL INFORMATION:

THERE ARE NO KNOWN DANGEROUS ACUTE OR CHRONIC EFFECTS ASSOCIATED WITH THE USE OF THIS MATERIAL. THE ACUTE ORAL TOXICITY LD₅₀ ORAL (RAT) FOR Fe₂O₃ IS GREATER THAN 10 g/kg (RAT).

THIS PRODUCT IS NOT CONSIDERED TO BE A KNOWN OR SUSPECTED CARCINOGEN BY NTP, IARC OR OSHA.

SECTION XII – ECOLOGICAL INFORMATION:

NO HARMFUL EFFECTS KNOWN OTHER THAN THOSE ASSOCIATED WITH SUSPENDED INERT SOLIDS IN WATER.

SECTION XIII – DISPOSAL CONSIDERATIONS:

COLLECT IN CONTAINERS, BAGS, OR COVERED DUMPSTER BOXES. IF REUSE OR RECYCLING IS NOT POSSIBLE, MATERIAL MAY BE DISPOSED OF AT A CHEMICALLY SECURE LANDFILL.

RCRA HAZARDOUS WASTE NUMBER: NOT FEDERALLY REGULATED.

SECTION XIV – TRANSPORTATION INFORMATION:

U.S. DOT: NOT REGULATED - ENTER THE PROPER FREIGHT CLASSIFICATION ON THE SHIPPING PAPERWORK, "CAS NUMBER" AND "PRODUCT NAME" FOR SHIPPING PURPOSES.

CANADIAN TDG HAZARD CLASS & PIN: NOT REGULATED.
SECTION XV – REGULATORY INFORMATION:

TSCA STATUS: COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY.
CERCLA REPORTABLE QUANTITY: NONE

RCRA (40 CFR 261): DISCARDED IRON OXIDE IS NOT CLASSIFIED AS A HAZARDOUS WASTE.

SARA TITLE III
SECTION 311/312 HAZARDOUS CATEGORIES: NONE
SECTION 313 TOXIC CHEMICALS: NONE

INTERNATIONAL REGULATIONS:
CANADIAN DSL - COMPONENTS ARE LISTED.
CANADIAN WHMIS - THIS MATERIAL IS NOT A CONTROLLED SUBSTANCE UNDER WHMIS.
EUROPEAN COMMUNITY - LISTED ON ECOIN, THE EUROPEAN CORE INVENTORY.

CALIFORNIA PROPOSITION 65: THERE ARE EXTREMELY SMALL, BUT DETECTABLE AMOUNTS OF SUBSTANCES REGULATED UNDER CALIFORNIA'S SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT.

ARSENIC: LESS THAN 3 ppm
BERYLLIUM: LESS THAN 2 ppm
CADMIUM: 2.0 to 6.0 ppm
CHROMIUM (VI): LESS THAN 0.1 ppm
LEAD: LESS THAN 10 ppm

THESE LEVELS ARE "TYPICAL" QUANTITIES AND MAY CHANGE SLIGHTLY WITH DIFFERENT LOTS. THE TERM "LESS THAN" INDICATES THAT THE SUBSTANCE WAS DETECTED, BUT THE AMOUNT WAS LESS THAN THE QUANTIFIABLE LIMIT.

SECTION XVI – OTHER INFORMATION:

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