



Safety Data Sheet: Ferrotrace (A-2090M)

Complying with 1907/2006/EEC Regulation of 18 December 2006 ("REACH Regulation")

Section 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Identification of the substance/preparation

Product name: Ferrotrace
Trade names: Ferrotrace
Catalog number: A-2090M
Product type: Liquid
REACH registration no(s): N/A

Common/important uses of the substance/preparation: To detect iron traces on the skin of a suspect

Company/undertaking identification:

MISTRAL SECURITY INC.
7910 Woodmont Ave, Ste 820
TEL: (301) 913-9366
FAX: (301) 913-9369

Company manufactured for:

ARROWHEAD FORENSICS
11030 Strang Line Road Lenexa, KS 66215
TEL: (913)-894-8388
FAX: (913) 894-8399
www.arrowheadforensics.com

E-mail address of person responsible for this SDS:

Emergency telephone number (including hours of operation):

Section 2. HAZARDS IDENTIFICATION

This substance/preparation is classified according to Directive 67/548/EEC or 1999/45/EC

Classification:

F+; R12
Xi; R36/37/38, R41
Xn; R20
R66, R67

Physical/chemical hazards:

R12: Extremely Flammable
R20: Harmful by inhalation
R36/37/38: Irritating to eyes, respiratory system and skin
R41: Risk of serious damage to eyes
R66: Repeated exposure may cause skin dryness or cracking
R67: Vapors may cause drowsiness and dizziness

See section 11 for more detailed information on health effects and symptoms.

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation:



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Ingredient name	CAS number	EC number	%	Classification
Propellant DMA	124-40-3	204-697-4	54.57%	F+; R12 Xn; R20 Xi; R37/38, R41
Acetone	67-64-1	200-662-2	35.56%	F; R11 Xi; R36 R66, R67
IPA (Isopropyl alcohol)	67-63-0	200-661-7	8.78%	F; R11 Xi; R36 R67
L-Ascorbic acid	50-81-7	200-066-2	0.89%	-
Active ingredient	--	--	0.20%	-
See section 16 for the full text of the R-phrases [Hazard statements] declared above				

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in section 8.

Section 4. FIRST AID MEASURES

Eyes contact: In case of contact with eyes, rinse immediately with plenty of water for at least 15 minutes. Get medical attention.

Skin contact: Avoid prolonged or repeated contact with skin. After handling, always wash hands thoroughly with soap and plenty of water. Get medical attention if irritation develops.

Inhalation: Remove from site of exposure to fresh air. If breathing is difficult give oxygen. If not breathing give artificial respiration. Get medical attention.

Ingestion: If large quantities of this material are swallowed, call a physician immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Notes to physician: No specific antidote, medical staff contacts Poisons Information Center. All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

See section 11 for more detailed information on health effects and symptoms.

Section 5: FIRE-FIGHTING MEASURES

Extinguishing media

Suitable Use dry chemical, carbon dioxide, water spray, or alcohol resistant foam.

Not suitable: N/A



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Special exposure hazards: N/A

Hazardous thermal decomposition products:

Under fire emits amines, fumes of carbone oxides, nitrogen oxides and other irritating and toxic fumes.

Special protective equipment for fire fighters: Fire fighters should wear full protective clothing and self-contained breathing apparatus in positive pressure mode.

Remark: Move containers from fire area if possible to do so without risk. Use water spray to cool unopened containers.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions: Wear protective clothing. Avoid contact with skin eyes and inhalation of vapors. Ventilate area of spill. Beware of vapour accumulation to from explosive concentrations. Vapour can accumulate in low areas.

Environmental precautions: Do not let this chemical enter the environment. Keep away from drains, surface and ground water.

Methods for cleaning up

Small spill: Absorb the chemical onto sand, vermiculite, or any other non-combustible absorbent, and collect into containers for later disposal.

Large spill: As for small spill

Personal Protection in Case of Large Spill: Safety glasses. Full suit. Suitable respirator. Boots. Gloves. A self- contained breathing apparatus should be used to avoid inhalation of the product.

Section 7: HANDLING AND STORAGE

Handling: Do not breathe vapors. Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Wash thoroughly after handling. Do not permit eating/drinking/smoking near the material.

Storage: Store in cool, dry and well ventilated place. Keep away from Oxidizing agents, acids anhydrides, aluminum, halogenated compounds, acids. Keep away from heat, sparks, open flame or any other ignition source. Protect against electrostatic charges. Avoid moisture. Avoid direct sunlight or light and extremes temperature.

Packaging materials Recommended: Use original container.

Specific end use(s): N/A

Section 8: EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure limit values:

Ingredient name	Occupational exposure limits
Isopropyl alcohol	ACGIH-TLV 200 ppm (TWA), 400 ppm (STEL) OSHA-PEL 400 ppm (TWA) GER.-MAK 500 mg/m ³ (TWA) NIOSH-REL 400 ppm (TWA), 500 ppm (STEL)



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Dimethylamine	ACGIH-TLV 5 ppm (TWA), 15 ppm (STEL) OSHA-PEL 10 ppm (TWA) GER-MAK 3.7 mg/m ³ (TWA) NIOSH-REL 10 ppm (TWA)
Acetone	ACGIH-TLV 500 ppm (TWA), 750 ppm (STEL) OSHA-PEL 1000 ppm (TWA) GER-MAK 1200 mg/m ³ (TWA) NIOSH-REL 250 ppm (TWA)

Exposure controls

Occupational exposure controls: Use process enclosures, local exhaust ventilation, or others engineering controls to keep airborne levels below recommend exposure limits. If user operations generate, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Respiratory protection: Suitable respirator. Be sure to use an approved/certified or equivalent. Wear appropriate respirator when ventilation is inadequate.

Hand protection: Wear protective disposable gloves to prevent skin exposure.

Eye protection: Wear protective safety glasses.

Skin protection: Wear appropriate long-sleeved clothing to minimize skin contact.

Hygiene measures: Keep away from foodstuffs and beverages. Do not eat, drink or smoke during work time. Remove soiled or soaked clothing immediately. Clean skin thoroughly after work; apply skin cream. During use, provide suitable ventilation.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

General information:

Appearance: Liquid, colorless to yellowish

Odour: N/A

Odour threshold: N/A

pH: N/A

Melting point/Freezing point: -93°C (Dimethylamine)

Initial boiling point/boiling range: 7°C (Dimethylamine)

Flash point: -6.7°C, CC (Dimethylamine)

Evaporation rate: N/A

Flammability: N/A

Upper/lower flammability or explosive limits: Upper – 14.4%, Lower – 2.8% (Dimethylamine)

Vapor pressure: N/A

Relative vapor density: N/A

Relative Density: N/A

Solubility(ies): soluble in water

Partition coefficient Octanol/Water: N/A

Auto-ignition temperature: N/A

Decomposition temperature: N/A

Viscosity: N/A

Explosive properties: N/A

Oxidizing properties: N/A



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Other information: N/A

Section 10: STABILITY AND REACTIVITY

Stability: Stable under ordinary conditions of use and storage.

Conditions to avoid: Keep away from heat, open flame and sparks. Exposure to moisture. Extreme temperatures and direct sunlight.

Materials to avoid: Oxidizing agents, acids anhydrides, aluminum, halogenated compounds, acids.

Hazardous Decomposition products: Under fire emits amines, fumes of nitrogen oxides and other irritating and toxic fumes.

Hazard polymerization: N/A

Section 11: TOXICOLOGICAL INFORMATION

Potential acute health effects

Acute toxicity:

Product/ingredient name	Test	Species	Dose
Isopropyl alcohol	LD50, Oral	Rat	5000 mg/kg
	LC50, Inhalation	Rat	1600 ppm, 480 min.
	LD50, Oral	Mouse	3600 mg/kg
Dimethylamine	LD50, Oral	Rat	698 mg/kg
	LD50, Oral	Mouse	316 mg/kg
	LC50, Inhalation	Rat	3000 mg/kg
	LC50, Inhalation	Mouse	4725 ppm, 120 min.

Irritation and corrosivity

Skin contact: Repeated exposure may cause skin dryness or cracking. Irritating to skin.

Inhalation: Harmful by inhalation. Irritating to respiratory system. Vapours may cause drowsiness and dizziness.

Eyes contact: Causes serious eye irritation. Irritating to eyes.

Symptoms: N/A

Sensitization: N/A

CMR Effects:

Carcinogenicity: N/A

Isopropyl alcohol:



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ACGIH A4- Not classified as a human carcinogen.
IARC-GROUP 3- Not classifiable as to its carcinogenicity to humans.

Dimethylamine:
ACGIH A4- Not classified as a human carcinogen.

Acetone:
ACGIH A4- Not classified as a human carcinogen.

Mutagenicity: N/A

Reproductive toxicity: N/A

Other effects:
Over-exposure signs/symptoms: N/A
Target organs: N/A

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: N/A

Mobility: Soluble in water

Persistence and Degradability: N/A

Bioaccumulative potential: N/A

Result of PBT assessment (if CSR is required): N/A

Other adverse effects:
Substances which have an unfavorable influence on the oxygen balance and can be measured using parameters such as BOD, COD, etc.: N/A
Substances, which contribute to eutrophication: N/A

Remarks: N/A


Section 13: DISPOSAL CONSIDERATIONS

Methods of disposal: Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Hazardous waste: N/A

Section 14: TRANSPORT INFORMATION

International transport regulations

Regulatory Information	UN number	Proper shipping name	Classes	Packing group	Label	Additional information	Marine pollutant
ADR/RID Class	1993	FLAMMABLE LIQUID, N.O.S. (contains DMA, IPA, Acetone)	3	I		EAC: 3YE	-



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IMDG class	1993	FLAMMABLE LIQUID, N.O.S. (contains DMA, IPA, Acetone)	3	I		EmS: F-E, S-E	-
IATA class	1993	FLAMMABLE LIQUID, N.O.S. (contains DMA, IPA, Acetone)	3	I		-	-

(1) Not applicable to the carriage of dangerous goods under RID or ADR.

National Fire Protection Association Hazard Ratings- NFPA (R):

- 2 Health Hazard Rating
- 4 Flammability Rating
- 0 Instability Rating

Section 15: REGULATORY INFORMATION

Classification and labeling according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use.

Labelling in accordance with EC directives:

Harmful Extremely flammable



Risk phrase(s):

- R12: Extremely Flammable
- R20: Harmful by inhalation
- R36/37/38: Irritating to eyes, respiratory system and skin
- R41: Risk of serious damage to eyes
- R66: Repeated exposure may cause skin dryness or cracking
- R67: Vapors may cause drowsiness and dizziness

Safety phrase(s):

- S7: Keep container tightly closed
- S16: Keep away from sources of ignition - No smoking
- S23: Do not breathe gas/fumes/vapor/spray (appropriate wording to be specified by the manufacturer)
- S24/25: Avoid contact with skin and eyes
- S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

National Paint & Coating Hazardous Materials Identification System – HMIS (R):

- 2 Health Hazard Rating - Moderate
- 4 Flammability Rating - Severe
- 0 Instability Rating - Minimal

Section 16: OTHER INFORMATION

Full text of R-phrases referred to in sections 2 and 3:

- R11: Highly flammable
- R12: Extremely flammable
- R20: Harmful by inhalation



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R36/37/38: Irritating to eyes, respiratory system and skin
R41: Risk of serious damage to eyes
R66: Repeated exposure may cause skin dryness or cracking
R67: Vapors may cause drowsiness and dizziness

Training advice: Before using/handling the product one must read carefully present MSDS.

Recommended restriction: N/A

Key Legend Information:

ACGIH- American Conference of Governmental Industrial Hygienists

OSHA- Occupational Safety and Health Administration

NTP- National Toxicology program

IARC- International Agency for Research on Cancer

ND- Not Determined

N/A- Not available

R-phrases- Risk phrases

S-phrases- Safety phrases

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Version no. 1

According to Regulation (EC) No. 1907/2006 (REACH), Annex II and Commission Directive 2001/59/EC.

To the best of our knowledge the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.