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## TECHNICAL BULLETIN #271A

### **CircleSafe 800A**

**CircleSafe 800A** is a pre-proportioned combination of MI-GLOW 800 fluorescent particles and odorless inspection oil vehicle packaged in carbon dioxide charged aerosol cans. **CircleSafe 800A** is designed for revealing very fine defects, such as those found in finished products for the aerospace industry and other critical applications.

### PROPERTIES

Particle Color: Fluorescent yellow-green

Particle Size: Not less than 98% passage through US Standard No. 325 (45 µm) sieve as defined in AMS 3044. The typical range of particle sizes is from 2 to 20 µm, with an average particle size of 7 µm.

Sensitivity: MI-GLOW 800 shows a minimum of 8 lines on an AISI 01 Ketos tool steel ring (as defined in SAE AS5282) set on a 1-inch diameter copper bar, magnetized with 2500 A of direct current.

Concentration: 1.25 grams of MI-GLOW 800 per liter of fluid

Characteristics: Non-flammable gas propellant.

Flash Point (for Oil): 215° F by Pensky-Martens Closed Cup (ASTM D-93).

Certification: Particles, carrier and mixture conform to or exceed all relevant specifications including but not limited to MIL-STD-1949, MIL-STD-271(SH), ASTM E 709, ASTM B & PV Code-Section V, and NAVSEA 250-1500-1. AMS 3044, AMS 3045, AMS 3161, AMS 2641 and DOD-F-87935 are covered under MIL-STD-1949.

### DIRECTIONS

1. For best results use when can is between 70° and 90° F (21° and 32° C).
2. Thoroughly clean surface to be examined.
3. Shake can vigorously for fifteen seconds and occasionally during use.
4. Point spray button toward inspection surface holding can 7 to 9 inches (18 to 24 cm) from surface.
5. Spray solution onto suitable magnetized surface until the surface is thoroughly covered with solution.
6. Examine the surface under ultra-violet light for fluorescent indications.
7. If clogging develops, turn spray button 1/4 turn. If clogging persists, remove and clean spray button. DO NOT put pin or other object into can opening. Gently replace spray button with a twisting motion, holding top of can and spray button opening pointed away from you.
8. Discard empty can in trash pick-up. DO NOT place in garbage compactor.

February 1999

# MATERIAL SAFETY DATA SHEET

## SECTION I - PRODUCT IDENTIFICATION

TRADE NAME: **CIRCLESAFE 800A**

FORMULA: A fluorescent magnetic powder in a petroleum hydrocarbon distillate; aerosol packaged.

## SECTION II - PRODUCT INGREDIENTS

| <u>MATERIAL</u>                  | <u>C.A.S. #</u> | <u>%</u> | <u>TLV</u>                         |
|----------------------------------|-----------------|----------|------------------------------------|
| Carbon Dioxide                   | 124-38-9        | 1-2      | 5000 ppm, ACGIH                    |
| Iron Oxide                       | 12227-89-3      | <1       | N. A.                              |
| Petroleum Hydrocarbon Distillate | 64742-47-8      | >95      | (5 mg/m <sup>3</sup> for oil mist) |

HMIS Rating: Health 1; Flammability 1; Reactivity 0

## SECTION III - PHYSICAL DATA

BOILING RANGE: 455 - 525°F  
PRESSURE IN CAN: @ 70°F approximately 85 psi  
VAPOR DENSITY(AIR=1): >1  
SOLUBILITY IN WATER: Negligible

%VOLATILE BY VOLUME: 98  
SPECIFIC GRAVITY (H<sub>2</sub>O=1): 0.82  
EVAPORATION RATE(ETHER=1): Greater than ether  
APPEARANCE & ODOR: Forest green liquid, slight odor contained in an aerosol package.

## SECTION IV - FIRE & EXPLOSION DATA

FLASH POINT(METHOD USED): 215°F (Pensky Martins Closed Cup)  
FLAMMABLE LIMITS: LEL 1.0% UEL 6.0%  
EXTINGUISHING MEDIA: Foam, dry chemical, carbon dioxide  
SPECIAL FIRE FIGHTING PROCEDURES: Water may be ineffective but can be used to cool fire-exposed containers. If water is used, fog nozzles are preferable. Wear goggles and self-contained breathing apparatus.  
UNUSUAL FIRE AND EXPLOSION HAZARDS: Exposure to heat may cause bursting of aerosol cans.

## SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: See Section II  
EFFECTS OF OVEREXPOSURE: Avoid eye and skin contact. Product may be irritating to eyes upon direct contact. Product is non-irritating to skin upon direct contact but prolonged or repeated exposure may result in dermatitis which makes the skin more susceptible to other irritants. Exposure to solvent vapors exceeding the TLVs can cause respiratory system irritation. Do not ingest.  
EMERGENCY AND FIRST AID PROCEDURES:  
EYES: Flush with copious amounts of water; continue flushing until irritation subsides.  
INHALATION: Remove subject to fresh air. If breathing has stopped or is irregular, administer artificial respiration and supply oxygen if it is available.  
SKIN: Wash contaminated area thoroughly with soap and water  
INGESTION: Do Not induce vomiting; call a physician immediately  
SEEK MEDICAL ATTENTION IN ALL CASES  
CARCINOGENICITY: None of the components in this material is listed by IARC, NTP, OSHA, or ACGIH as a carcinogen.

## SECTION VI - REACTIVITY DATA

STABILITY: Stable  
INCOMPATIBILITY: Strong oxidizers  
HAZARDOUS DECOMPOSITION PRODUCTS: May produce hazardous fumes when heated to decomposition. Fumes may contain carbon dioxide and/or carbon monoxide.  
HAZARDOUS POLYMERIZATION: Will not occur

**SECTION VII - SPILL OR LEAK PROCEDURES**

**STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:** Contain spill immediately do not allow spill to enter sewers or water courses. Remove all sources of ignition. Absorb with appropriate inert material such as sand, clay, etc.

**WASTE DISPOSAL METHOD:** Do not incinerate, puncture or place aerosol can into compactor. Dispose of all the waste material according to applicable federal, state, and local regulations.

**SECTION VIII - SPECIAL PROTECTION INFORMATION**

**VENTILATION REQUIREMENTS:** Local exhaust if OSHA limits are exceeded; adequate ventilation when vapor or mist is generated. Avoid continuous breathing of vapors and spray mist.

**SPECIFIC PERSONAL PROTECTIVE EQUIPMENT:**

**RESPIRATORY:** As needed in confined or enclosed spaces; when vapor or mist as generated. NIOSH approved self-contained breathing apparatus required for concentrations above TLV limits.

**EYE:** Splash-proof safety goggles or plastic face shield

**GLOVES:** Recommended for prolonged or repeated exposure - impervious synthetic rubber

**OTHER CLOTHING & EQUIPMENT:** Impervious synthetic rubber boots, apron, etc. recommended for body parts subject to prolonged exposure

**SECTION IX - SPECIAL PRECAUTIONS**

**PRECAUTIONS TO BE TAKEN IN HANDLING & STORAGE:** Store in a clean area away from heat, sparks, open flame, and oxidizing materials. Do not store where temperature may exceed 120 °F. Exposure to heat or prolonged exposure to sun may cause bursting. Do not transfer to unmarked containers.

**OTHER PRECAUTIONS:** Use only as directed. Intentional misuse by deliberately concentrating vapors and inhaling contents can be harmful or fatal. Use explosion-proof equipment. No smoking or open lights. Consumption of food and beverage should be avoided in work areas where hydrocarbons are present. Always wash hands and face with soap and water before eating, drinking, or smoking.

**DISCLAIMER:** OUR TECHNICAL ADVICE, INFORMATION & STATEMENTS - GIVEN VERBALLY, IN WRITING OR IN THE FORM OF TEST RESULTS - IS OFFERED FOR YOUR GUIDANCE WITHOUT WARRANTY. **NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS MADE.** IT IS THE USER'S RESPONSIBILITY TO TEST THE SUITABILITY OF EACH PRODUCT FOR HIS INTENDED PROCESS AND APPLICATIONS. OUR GUARANTEE IS LIMITED TO THE CONSISTENT QUALITY OF OUR PRODUCTS.

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