

Kyread® SDF-130A Magnetic Developer

This product was formulated to have near-zero ozone depletion potential. It is being test-marketed now to alert you that such a product is available, although "at a higher price."

Kyread is a stable suspension of spherical iron particles having a diameter of 1-3 microns. On contacting the written card, tape or disk, the particles are attracted to the magnetized areas until these are fully delineated and the magnetic image is visible.

The product is used to check recorder head alignment, track placement, dropouts, and interblock spacing; skew and noise; to cue for splicing; and to synchronize video or audio tape when recorded at high or saturation levels.

Kyread SDF-130A: 1) has near-zero effect on the ozone layer and the environment.
 2) evaporates quickly.
 3) Is non-flammable and non-toxic.
 4) Has negligible effect on polymethacrylates and most other plastics used in cassette bodies and reels and magnetic coatings on tapes, disks and cards.

Surface attack and clouding have been noted with some polystyrene blends.
Test Kyread SDF-130A for effect on materials and components before using.

Directions for use:

- 1) After shaking, apply Kyread to inclined magnetic card, tape or diskette with a cellulosic paper or tissue as backing to absorb excess material. This immediate removal of excess Kyread yields a distinct and clean visual trace. Alternatively, Kyread may be dripped from a tube or eyedropper so that the excess drains into a wide mouth can. Because of its broader coverage, Kyread DIPC (aerosol spray can) is best for testing larger areas or for spot-checking on an intermittent basis.
- 2) Remove Kyread trace with cleaning cloth or Scotch removable tape #811 or "Post It" adhesive backing (3M Co.) or equivalent.
- 3) As originally packaged, Kyread SDF-130A has a shelf life in excess of one year. However, once opened, the eyedropper bottles and 7.5 fl.oz. can, carefully remove the metal inner seal. After use, place a piece of polyethylene plastic film over the opening before screwing the metal cap back on.

KYREAD® SDF-130A

MATERIAL SAFETY DATA SHEET

SECTION 1 – GENERAL INFORMATION

1.1 Manufacturer: Cardserv.

1.2 PRODUCT INFORMATION

Name of product: Kyread SDF-130A
Product Use: Magnetic tester used to visually delineate information recorded on magnetic media (tapes, cards, etc.)

1.3 INGREDIENTS:

	<u>C.A.S. No.</u>	<u>% By Weight</u>
Methyl Nonafluoroisobutyl ether	163702-08-7	
<i>Plus</i>	=	90 – 94
Methyl Nonafluorobutyl ether	163702-07-6	
Solubility couplers		1 – 3
Aliphatic alcohols	67-63-0	4 – 6
Iron Powder (1-3 micron)	7439-876	1 gram/100 ml

CO₂ (10-15 psi) is present as the propellant in the aerosol package of Kyread SDF-130A.

1.4 PHYSICAL PROPERTIES

Physical Form: Liquid suspension of iron powder
Autoignition temperature > 443 °C
Flash Point No flash point, per ASTM D 3278
Flammable Limits – LEL 4% (ASTM-E681)
Boiling Range 54 °C
Density 1.48 gms/ml
Vapor Density 7.1 [AIR=1]
Solubility in Water < 10%
Evaporation Rate 58 [Ref Butyl acetate = 1]
Evaporation Rate – in weighing dish open to ambient air: 62-75% of the evaporation rates of CFC 113 & HCFC 141B under same conditions in the range 16 °C - 32 °C.

1.5 STABILITY AND REACTIVITY

Kyread SDF-130A is stable and non-polymerizable. However, it should not contact strong bases (NaOH, etc.), alkali metals (Li, K, Na) or strong oxidizing agents.

The small amounts of hydrochloric acid hydrofluoric acids resulting from exposure of Kyread SDF-130A to extreme heat, react with the iron powder in the product and are immobilized as the iron salts.

Hydrogen Fluoride has an ACGIH Threshold Ceiling of 3 ppm (as fluoride) and an OSHA PEL of 3 ppm of fluoride as an eight hour Time-Weighted Average and 6 ppm of fluoride as a Short Term Exposure Limit well above the odor threshold of 0.04 ppm for HF. This provides for detection before harmful buildup occurs.

SECTION 2 – HEALTH CONSIDERATIONS

2.1 SUMMARY

Kyread SDF-130A should be used with adequate ventilation and the proper respect afforded all laboratory chemicals. Since the components of Kyread can be decomposed at very high temperatures, it should not be used near ovens, hot plates, electric arcs or open flames. Cigarette smoking is to be avoided while using Kyread.

2.2 POTENTIAL HEALTH EFFECTS AND SYMPTOMS

Recommended Protective Devices and Treatment

A. Protection

Eyes: Safety glasses – side shields.

Skin: Gloves; polyethylene.

Inhalation: Use adequate ventilation.

Ingestion: Do not eat, drink or smoke when using Kyread.

B. Symptoms of Irritation

Contact with Kyread SDF-130A might cause the following:

1. Eyes, skin – mild irritation, itching.
2. Inhalation – may cause upper respiratory irritation, sneezing, hoarseness, headache.
3. Ingestion – may be absorbed and cause:
Central nervous system depression, headaches, abdominal pain, diarrhea, dizziness, slowed reaction time, giddiness or unconsciousness.

Treatment:

Remove person to fresh air; flush eyes with large quantities of water; wash skin contact with soapy water and rinse with water.

If swallowed, do not induce vomiting. Give 2 large glasses of water and get immediate medical attention.

Note: Never give anything by mouth to an unconscious person.

C. Spills and Leaks

If the Kyread SDF-130A container leaks, reclaim as much as possible. If this is difficult or if SDF-130A is spilled, then mop it up with paper towelling and allow towelling to dry outside. Remove leaking container to hood or outside location.

SECTION 3 – ECOLOGICAL CONSIDERATIONS

3.1 OZONE DEPLETION

Kyread SDF-130A has near-zero ozone depletion potential (ODP).

The U.S. Environmental Protection Agency (EPA) has listed the major ingredients of Kyread SDF-130A as acceptable substitutes for ozone depleting substances in specific solvent and aerosol industry applications under its Significant New Alternatives Program (SNAP), Section 612 of the Clean Air Act.

Atmospheric Lifetime: Approximately 4.7 years and 3.7 years for methyl nonafluoroisobutyl ether and methyl nonafluorobutyl ether respectively.

Isopropyl alcohol has an atmospheric half-life < 2 days.

3.2 POTENTIAL ENVIRONMENT EFFECTS

AQUATIC TOXICITY:

Test results indicate that methyl nonafluoroisobutyl ether and methyl nonafluorobutyl ether have insignificant toxicity to aquatic organisms. Isopropyl alcohol has minimal toxicity to aquatic organisms.

BIOCONCENTRATION:

Methyl nonafluoroisobutyl ether and methyl nonafluorobutyl ether are water insoluble and very volatile. These components move rapidly from aquatic or terrestrial environments to the atmosphere. Bioconcentration is unlikely to occur.

Isopropyl alcohol has an octanol/water partition coefficient value < 3 indicating it is unlikely to bioconcentrate.

3.3. OTHER INFORMATION

311/312 Hazard Categories and Classifications

Fire Hazard – No. Pressure Hazard – No. Reactivity Hazard – No.