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SAFETY DATA SHEET FOR KYREAD[®] MAGNETIC TAPE/DISK DEVELOPER

PRODUCT IDENTIFICATION AND INGREDIENTS

PRODUCT NAME/TRADENAME: Kyread magnetic tape, disk and card developer

CHEMICAL DESCRIPTION:

1-3 micron iron powder : 1.0%

1,1 dichloro – 1 fluoroethane: 99.0%

Chemical Formula: CCl_2F-CH_3 ;Fe

CAS Numbers: 1,1 dichloro-1- fluoroethane: 1717-00-6

Metallic Iron:00007439-89-6

Chemical Family: chlorofluoroalkane

Pressurized Containers: This form of Kyread uses carbon dioxide

As propellant and is pressurized to 10 psi.

PHYSICAL PROPERTIES

Boiling point: 89.6°F; 32°C

Vapor Pressure: 10 PSIA at 70°F(21.1°C)

Vapor Density (AIR=1): 4.1

Solubility in Water: .17wt.%

Specific Gravity: 1.28

Percent Volatile by volume:99

Evaporation Rate (Butyl Acetate =1):

Greater than 1

FIRE AND EXPLOSIVE DATA

Classified as non-flammable liquid. Auto Ignition: 550°C.

Flash Point: None detected by ASTM D 1310-67 and STM D 56-82.

Flame Limits:[In air (%by volume) ASTM E681]*

Lower: 7.6

Upper:17.7

* ASTM E681 using a match as the ignition source.

Vapor concentrated in a confined or poorly ventilated space can be ignited with a flame or heat source.

TOXICITY

Kyread components are believed to be of generally low toxicity on the basis of tests complete to date. A two-year chronic toxicity study on 1,1 dichloro-1-fluoroethane (HCFC141B) complete in 1992 showed the material to be innocuous; however ; adequate ventilation and minimum skin contact are recommended.

REACTIVITY DATA

STABILITY: Material is stable under normal conditions.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS MIXTURES: No hazard on mixture with other materials except as noted below.

CONDITIONS TO AVOID: (1) CONTACT WITH SURFACE .Contact of fluid or vapor with heating elements sparks Or open flame can create irritating, toxic and corrosive decomposition products noticeable at low levels (hypochloric And hydrofluoric acid, chlorine and possible carbonyl halides).

(2) Contact with strong acids, alkalis drying agents and zeolites.

(3)CONTACT WITH ALKALI AND ALKALINE EARTH METALS(SODIUM, POTASSIUM CALCIUM, etc). 1,1 dichloro-1-fluoroethane can be reactive with these materials. Contact with powdered or freshly abraded aluminum, magnesium and zinc should also be avoided.

HEALTH HAZARD DATA

HAZARDOUS INGREDIENT: 1,1 dichloro-1-fluoroethane:

TLV: Has not been established. Toxicity data are being developed. Interim recommended maximum time weighted average exposure is 500ppm.

Hazard Rating (NFPA 704): Health: slight

Fire: Moderate (see Fire Hazard data above)

PRIMARY ROUTES OF EXPOSURE: Inhalation, eye, skin, ingestion.

EFFECTS OF OVEREXPOSURE AND FIRST AID PROCEDURES:

1. Inhalation of concentrated vapor. At low level of concentration initial symptoms may include headache, dizziness, nausea, loss of concentration and irritation. With high exposure levels: Intoxication, cardiac arrhythmia. Product vapors displace air and can cause asphyxiation. FIRST AID: Remove individual to fresh air. If breathing is difficult give oxygen and summon medical help. In the case of irregular heartbeat (cardiac arrhythmia), drugs such as epinephrine (adrenalin) should NOT be given because of the risk of aggravating the condition. Keep person warm and at rest. Summon medical help immediately.

2. inhalation of high temperature decomposition products: Irritation of respiratory tract. FIRST AID: Remove individual to fresh air and seek medical examination.

3. ingestion: Similar symptoms as for inhalation. Discomfort due to the volatility of material would be and touching finger to back of throat , or remove material by gastric lavage. DO NOT give simulates. Never give anything orally an unconscious person. Take person immediately to hospital or physician.

4. Eye contact: Fluid or vapor causes irritation. FIRST AID: flush eye with large amounts of water for at least 15 minutes, lifting eyelids occasionally until no evidence of foreign material remains. Seek medical attention.

5. Skin contact: defatting of skin can cause irritation. No absorption toxicity data is available . FIRST AID : wash affected area with mild soap and water for at least 15 minutes. Seek medical advice.

SAFETY PRECAUTIONS.

1. Secure adequate ventilation (local Exhaust).
2. Avoid contact of liquid or vapor with sparks, open flame or hot surface.
3. do not take internally
4. Wear safety glasses if fluid is likely to splash in use if uses eyes must be in proximity to aerosol spray.
5. Wear neoprene gloves if skin contact is to be prolonged or repeated.

OTHER PRECAUTIONS: Keep out of reach of children. Keep all contains tightly capped when not in use. Do not store aerosol container. Do not eat, drink or SMOKE in work areas.

SPILL/ LEAK PROCEDURES: wipe up spill with paper towelling and discard towelling in outside location. Ventilata area of spill. Remove leaking container to outside location. Terminate any spaks or open flames.

WARNING: 1,1 dichloro-1-fluoroethane (HCFC 141B) harms public health by depleting ozone upper atmosphere.