

SAFETY DATA SHEET

1. IDENTIFICATION OF THE PRODUCT AND OF THE SUPPLIER

【PRODUCT NAME】 HANARL FLX-2EXA
【USE OF THE CHEMICAL】 Lubricant
【MANUFACTURER NAME】 Kanto Kasei Ltd.
【MANUFACTURER ADDRESS】 1-8-1, Marunouchi, Chiyoda-ku, Tokyo JAPAN, 100-0005
【DIVISION】 Chemical Safety Division
【PHONE NUMBER】 TEL: 03(3218)7111 FAX: 03(3218)7100
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2. HAZARDS IDENTIFICATION

Not classified as hazardous according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Label elements

Signal word : Not applicable.
 Symbols : Not applicable.
 Pictograms : Not applicable.

3. COMPOSITION/INFORMATION ON INGREDIENTS

DISTINCTION
 (SINGLE PRODUCT/MIXTURE) : Mixture
 CHEMICAL NAME : Dry film lubricant
 COMPOSITION : Fluorinated solvent 90~99wt%
 : Fluoric oil, Solid lubricants and others 1~10wt%
 CHEMICAL FORMULAE : Not disclose, because of trade secrets
 CAS NO : Not disclose, because of trade secrets
 UN CLASS/UN NUMBER : Not applicable

4. FIRST-AID MEASURES

IF INHALED : Remove person to fresh air.
 : If you feel unwell, get medical attention.
 IF ON SKIN : Wash with soap and water.
 IF IN EYES : Flush with large amounts of water.
 : Remove contact lenses if easy to do. Continue rinsing.
 IF SWALLOWED : Rinse mouth.
 : If you feel unwell, get medical attention.
 MOST IMPORTANT SYMPTOM : No data available
 PROTECTION OF PERSON
 GIVE FIRST-AID : No data available
 SPECIAL NOTE TO DOCTOR : No data available

5. FIRE-FIGHTING MESURES

EXTINGUISHING MEDIA : Non-combustible.
 : Use a fire fighting agent suitable for surrounding fire.
 PECULIAR HAZARD STATEMENT : Exposure to extreme heat can give rise to thermal decomposition.
 HAZARDOUS DECOMPOSITION : Carbon monoxide, Carbon dioxide, Hydrogen Fluoride
 PROTECTION OF THE PERSON

EXTINGUISHES FIRE : When firefighting conditions are severe and total thermal decomposition of the product is possible, wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS : Ventilate the area with fresh air.
: For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice.
: Observe precautions from other sections.

ENVIRONMENTAL PRECAUTIONS : Avoid release to the environment.
: For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

CONTAINMENT AND PURIFICATION METHODS : Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material.
: Mix in sufficient absorbent until it appears dry.
: Collect as much of the spilled material as possible.
: Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person.
: Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional / national/ international regulations.

7. HANDLING AND STORAGE

HANDLING : Do not breathe thermal decomposition products.
: Avoid skin contact with hot material.
: For industrial or professional use only.
: Do not eat, drink or smoke when using this product.
: Wash thoroughly after handling.
: Avoid release to the environment.
: Avoid contact with oxidizing agents (ex. chlorine, chromic acid etc.)

STORAGE : Keep container tightly closed.
: Store away from heat, acids, strong bases, oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EQUIPMENT MEASURES : Provide appropriate local exhaust when product is heated.
: Use general dilution ventilation and/or local exhaust.
: If ventilation is not adequate, use respiratory protection equipment.

MANAGEMENT CONCENTRATION : Not established

ALLOWABLE CONCENTRATION : TWA:750 ppm

PROTECTION

RESPIRATORY PROTECTION : If necessary, wear hazard mask.

EYE PROTECTION : Safety Glasses with side shields

SKIN PROTECTION : No chemical protective gloves are required.

THERMAL HAZARDS : Wear heat insulating gloves when handling hot material to prevent thermal burns.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	: Liquid
COLOR	: Milky White
ODOR	: Slightly ether odor
p H	: Not applicable
MELTING POINT/FREEZING POINT	: Approx. -135°C
INITIAL BOILING POINT	
AND BOILING	: 60~65°C
FLASH POINT	: No flash point
UPPER/LOWER FLAMMABILITY	
OR EXPLOSIVE LIMITS	: Not applicable
VAPOR PRESSURE	: Approx. 202 mmHg (25°C)
VAPOR DENSITY	: Approx. 8.6
RELATIVE DENSITY (WATER=1)	: Approx. 1.5
SOLUBILITY	: Water : < 12 ppm Other solvent : No Data Available
AUTO-IGNITION TEMPERATURE	: Approx. 405 °C
DECOMPOSITION TEMPERATURE	: Not applicable
VISCOSITY	: Approx. 0.6 centipoise (23°C)

* These data except for appearance are about a solvent.

10. STABILITY AND REACTIVITY

STABILITY	: Stable.
POSSIBILITY OF	
HAZARDOUS REACTIONS	: Hazardous polymerization will not occur.
CONDITIONS TO AVOID	: None known.
INCOMPATIBLE MATERIALS	: Strong acids, Strong bases, Strong oxidizing agents
HAZARDOUS DECOMPOSITION	
PRODUCTS	: PFIB, Toxic Vapor, Gas, Particulate
OTHER	: If the product is exposed to extreme condition of heat from misuse or equipment failure, toxic decomposition products that include hydrogen fluoride and perfluoroisobutylene can occur.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY	: Dermal : LD50 estimated to be > 5,000 mg/kg Inhalation(vapor) : Rat: LC50 4hr > 1,000 mg/l Ingestion : Rat: LD50 > 5,000 mg/kg
SKIN CORROSION/IRRITATION	: Rabbit: No significant irritation
SERIOUS EYE DAMAGE/ IRRITATION	: Rabbit: No significant irritation
RESPIRATORY OR SKIN SENSITIZATION	: Guinea Pig :Not classified
GERM CELL MUTAGENICITY	: In Vitro : Not mutagenic In vivo : Not mutagenic
CARCINOGENICITY	: No data available
REPRODUCTIVE TOXICITY	: Not classified for development
STOT-single exposure	: cardiac sensitization : Not classified
STOT-repeated exposure	: Not classified
ASPIRATION HAZARD	: No data available

