

SAFETY DATA SHEET

1. IDENTIFICATION OF THE PRODUCT AND OF THE SUPPLIER

【PRODUCT NAME】 HANARL UD-4420FA
【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
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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 MEASURES

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

12. ECOLOGICAL INFORMATION

ACUATIC TOXICITY ACUTE : No toxicity
CHARONIC : No toxicity
PERSISTENCE/DEGRADABILITY : No data available
BIOACCUMULATIVE POTENTIAL : No data available
MOBILITY IN SOIL : No data available
OTHER ADVERSE EFFECTS : No data available

13. DISPOSAL CONSIDERATIONS

Disposal methods

- : Dispose of contents/ container in accordance with the local/regional/national /international regulations.
- : Dispose of waste product in a permitted industrial waste facility. Combustion products will include HF. Facility must be capable of handling halogenated materials.
- : Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations.
- : Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

14. TRANSPORT INFORMATION

Not regulated per U. S. DOT, IATA or IMO.

INTERNATIONAL REGULATIONS

FOR TRANSPORT : Not regulated (Not dangerous)
UN CLASS : Not applicable
UN NUMBER : Not applicable
PRODUCT NAME : Not applicable
CONTAINER GRADE : Not applicable
SEAWATER POLLUTION MATERIAL : None
SPECIFIC SECURITY PRECAUTION

AND CONDITION OF TRANSPORTATION : The container is avoided direct sunlight, and it loads so as not to be damaged, corroded and leak.
The collapse of cargo piles is prevented surely.
: Don' t pile the heavy load.

15. REGULATORY INFORMATION

EPCRA 311/312 Hazard Classifications : Physical Hazards : Not applicable
Health Hazards : Not applicable

16. OTHER INFORMATION

Please read the SDS well before use.

SAFETY DATE SHEETS ARE ISSUED BASED ON THE LATEST INFORMATION WE HAVE KNOWN. HOWEVER, THESE ARE NOT THE ONE TO INSURE SAFETY. THESE ARE PROVIDED TO COMPANIES HANDLING THE MATERIALS AS REFERENCE INFORMATION REGARDING HAZARDOUS AND HARMFUL CHEMICALS TO ENSURE SAFE HANDLING. WE ASK THAT THESE SHEETS BE USED BY COMPANIES AS REFERENCE AND WITH THE UNDERSTANDING THAT IT IS NECESSARY FOR MESURES APPROPRIATE TO THE SPECIFIC CIRCUMSTANCES RELATED TO HANDLING THE MATERIALS TO BE TAKEN UNDER THEIR OWN RESPONSIBILITY. ACCORDINGLY, THIS DATA SHEET IN NO WAY CONSTITUTES A GUARANTEE OF SAFETY.