

SAFETY DATA SHEET

OUR REF No. III-12

1. IDENTIFICATION OF THE PRODUCT AND OF THE SUPPLIER

【PRODUCT NAME】 HANARL FL-4348E
【USE OF THE CHEMICAL】 Lubricant
【MANUFACTURER NAME】 Kanto Kasei Ltd.
【MANUFACTURER ADDRESS】 1-8-1, Marunouchi, Chiyoda-ku, Tokyo JAPAN, 100-0005
【DIVISION】 Environmental quality assurance
【PHONE NUMBER】 TEL: 03(3218)7111 FAX: 03(3218)7100
【E-MAIL】 info@kanto-kasei.com

2. HAZARDS IDENTIFICATION

CLP REGULATION (EC) No 1272/2008

CLASSIFICATION:

Hazardous to the Aquatic Environment (Chronic), Category 4 - Aquatic Chronic 4; H413

HAZARD STATEMENTS

: H413 : May cause long lasting harmful effects to aquatic life.

PRECAUTIONARY STATEMENTS

Disposal : P501 : Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

SUPPLEMENTAL INFORMATION

Supplemental Hazard Statements

: EUH018 In use, may form flammable/explosive vapour-air mixture.

Notes on labelling

: Updated per Regulation (EC) No. 648/2004 on detergents.

Other hazards

: None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

DISTINCTION

(SINGLE PRODUCT/MIXTURE) : Mixture

CHEMICAL NAME : Dry film lubricant

COMPOSITION : Fluorinated solvent 90~99wt%

: Fluoric oil 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 victim to fresh air.

Get medical advice/attention.

IF ON SKIN

: Wash the affected area with soap and water.

IF IN EYES

: Flush eyes with plenty of water, and get medical advice /attention.

IF SWALLOWED

: Do not induce vomiting. Get medical advice/attention.

If a mouth is polluted, wash it with plenty of water.

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 : Material will not burn. Use a fire fighting agent suitable for the surrounding fire.

PECULIAR HAZARD STATEMENT : Exposure to extreme heat can give rise to thermal decomposition.

HAZARDOUS DECOMPOSITION : Carbon monoxide, Carbon dioxide

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 : Evacuate area. 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.

METHODS FOR CONTAINMENT AND CLEANING UP : 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.
: Ventilate the area with fresh air.
: 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 : Store in a well-ventilated place.
: 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:200 ppm |
| PROTECTION | |
| RESPIRATORY PROTECTION | : If necessary, wear hazard mask. |
| EYE PROTECTION | : Safety Glasses with side shields |
| HAND PROTECTION | : Select and use gloves and/or protective clothing : Gloves made from the following material(s) are recommended: Nitrile Rubber |
| SKIN PROTECTION | : Select and use body protection to prevent contact based on the results of an exposure assessment. : The following protective clothing material(s) are recommended: Apron – Nitrile |
| 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 odor |
| p H | : Not applicable |
| MELTING POINT/FREEZING POINT | : Approx. -138°C |
| INITIAL BOILING POINT | |
| AND BOILING | : 75~80°C |
| FLASH POINT | : No flash point |
| UPPER/LOWER FLAMMABILITY | |
| OR EXPLOSIVE LIMITS | : Not applicable |
| VAPOR PRESSURE | : Approx. 109 mmHg (25°C) |
| VAPOR DENSITY | : Approx. 9.1 (0°C) |
| RELATIVE DENSITY (WATER=1) | : Approx. 1.43 |
| SOLUBILITY | : Water : Nil Other solvent : No Data Available |
| AUTO-IGNITION TEMPERATURE | : Approx. 375 °C |
| DECOMPOSITION TEMPERATURE | : Not applicable |
| VISCOSITY | : Approx. 0.4 centistoke |

* These data except for appearance are about a solvent.

10. STABILITY AND REACTIVITY

| | |
|------------------------------------|--|
| REACTIVITY | : This material is considered to be non-reactive under normal use conditions. |
| 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, HF |
| 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

A ACUTE TOXICITY : Oral : Rat: LD50 > 2,000 mg/kg
 Inhalation(vapor) : Rat: LC50 4hr > 989 mg/l

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 : respiratory irritation :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 DATA 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 MEASURES 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.