

SAFETY DATA SHEET

in accordance with Globally Harmonized System of Classification of Chemicals

No. X-0524GHS-05

Identity (As Used on Label and List)

Revised Date: March 26, 2015

Prepared Date: September 11, 2009

ASAHIKLIN AC-6000

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Identification of the substance or preparation

Product name: ASAHIKLIN AC-6000

Chemical name: 1,1,1,2,2,3,3,4,4,5,5,6,6-Tridecafluorooctane

1.2 Use of the substance/preparation

solvent

1.3 Company/undertaking identification

ASAHI GLASS CO., LTD. Chemicals Company

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2. HAZARDS IDENTIFICATION

Application of the classification rules in GHS

PHYSICAL HAZARDS

Flammable liquid	not classified
Pyrophoric liquid	not classified

HEALTH HAZARDS

Acute toxicity(oral)	not classified
Skin corrosion / irritation	Classification not possible
Serious eye damage / eye irritation	Classification not possible
Carcinogenicity	Classification not possible
Specific target organ systemic toxicity after repeated exposure	not classified
Aspiration hazard	Classification not possible

HAZARDOUS TO THE AQUEOUS ENVIRONMENT

Acute	Classification not possible
Chronic	Classification not possible

Symbol : N/A

Signal word: N/A

Hazard Statement: N/A

Precautionary Statements: N/A

3. COMPOSITION / INFORMATION ON INGREDIENTS

Components

CAS-No	Name	% Weight
80793-17-5	1,1,1,2,2,3,3,4,4,5,5,6,6-Tridecafluorooctane	99.9<

4. FIRST-AID MEASURES

- **Inhalation:** If high concentrations are inhaled, immediately remove to fresh air. Keep persons calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
- **Skin contact:** In case of skin contact, flush with water for 15 minutes. Get medical attention if irritation is present.
- **Eye contact:** In case of eye contact, immediately flush eyes with plenty of water for 15 minutes. Call a physician.
- **Ingestion:** No specific intervention is indicated, as the compound is not likely to be hazardous by ingestion. Consult a physician if necessary. Do not induce vomiting because the hazard of aspirating the material into the lungs is considered greater than swallowing it.
- **Further medical advice:** N/E

5. FIRE-FIGHTING MEASURES

- **Extinguishing media:** This substance is incombustible, so select and use a suitable fire fighting agent on the surrounding fire e.g. CO₂, dry powder foam or water extinguishers.
- **Unusual fire and explosion hazards:** Containers may rupture under fire conditions. Decomposition may occur.
- **Special fire fighting precaution/instructions:**
Use water spray to cool containers. Self-contained breathing apparatus (SCBA) is required if drums rupture and contents are spilled under fire conditions.
- **Additional information:**
Move container from fire areas if it can be done without risk. Cool containers with water spray. Fire residues and contaminated firefighting water must be disposed in accordance with the local regulations.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Ensure adequate ventilation. Use personal respiratory protection, impermeable gloves, chemical splash goggles and protective clothing

Environmental precautions:

Collect contaminated water/firefighting water separately. Do not wash away into shower or waterway.

Methods for cleaning up/taking up:

Take up with absorbent material(e.g. sand, general-purpose binder). Collect on absorbent material and transfer to steel drums or recovery/dispose.

Additional information:

Do not allow product to contact open flame or electrical heating elements. Information for safe handling looks up chapter 7. Information for disposal looks up chapter 13.

7. HANDLING AND STORAGE

Handling

Use with sufficient ventilation. Provide adequate ventilation for storage, handling, and use, especially for enclosed or low spaces. Avoid contact of liquid with eyes and prolonged skin exposure. Do not allow product to contact open flame or electrical heating elements because dangerous decomposition products may form.

Storage

Avoid placing sealed containers under direct sunlight, but store them in a well-ventilated area, at room temperature. Don't store near heat, sparks or open flames.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure guidelines

Ingredient name: 1,1,1,2,2,3,3,4,4,5,5,6,6-Tridecafluorooctane

MAK-Values(2010): N/E

ACGIH(2011) TLV-TWA: N/E , **TLV-STEL:** N/E

Engineering controls

Normal ventilation for standard manufacturing procedures is generally adequate.

Local exhaust should be used when large amounts are released.

Mechanical ventilation should be used in low places.

An eye wash and safety shower should be nearby and ready for use.

Impermeable apron and boots to prevent skin contact.

Personal protective equipment

- **Respiratory protection:**
Ventilation Under normal manufacturing conditions, respiratory protection is required when using this product.
Self-contained breathing apparatus (SCBA) is required if a large spill occurs.
- **Skin:** Impervious gloves should be used avoid prolonged or repeated exposure.
- **Eye protection:** Chemical splash goggles should be available for use as needed to prevent eye contact.
- **Additional recommendations:** An eye wash and safety shower should be nearby and ready for use. Impermeable apron and boots to prevent skin contact

9. PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance and Odor:** Clear colorless liquid. Slightly smell of ether.
- **Chemical formula:** 1,1,1,2,2,3,3,3,4,4,5,5,6,6-Tridecafluorooctane
- **Boiling point:** 114deg.C
- **Melting point:** -76deg.C
- **Vapor pressure (25deg.C):** 2.6kPa
- **Flash point (method):** Non-flammable (T.C.C.& C.O.C.)
- **Lower explosive limit:** N/D
- **Upper explosive limit:** N/D
- **Auto-ignition temperature:** 400 deg.C
- **Relative Density (25deg.C):** 1.556
- **Solubility (25 deg.C) of water:** 0.005g-H₂O/100g
- **pH value (25deg.C):** N/A
- **Viscosity (25deg.C):** 1.109mPa·s
- **Partition coefficient:** n-octanol / water: log Pow=5.3
- **Other data (vapor density, miscibility, evaporation rate, conductivity, etc.):** N/D

10. STABILITY AND REACTIVITY

Stability:

Stable

Material is stable under normal conditions.

Condition to Avoid:

This substance is stable under normal conditions. However, avoid open flames and high temperature and active metals. Alkaline or acid may cause slight decomposition.

Materials to Avoid (Incompatibilities):

Alkaline, acid, active reagent.

Hazardous Decomposition or Byproducts:

Decomposition products are hazardous. This substance can be decomposed at high temperatures (open flames, glowing metal surfaces, etc.) forming hydrogen fluoride (HF), possibly carbonyl fluoride(COF₂) and carbon monoxide(CO).

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

Oral LD50 (rat): > 2,500mg/kg (OECD 423)

Inhalation LC50 (rat): > 10.000ppm (OECD 403)

Dermal LD50(rat): >2,000mg/kg(OECD 402)

Skin corrosion/irritation

Skin irritation(rabbit): not irritant (OECD 404)

Serious eye damage/irritation

Eye irritation(rabbit): not irritant (OECD 405)

Respiratory or skin sensitization

Skin(rat): none (LLNA)

Germ cell mutagenicity

Ames Test : Negative (OECD 471)

Chromosomal Aberration Test : Negative (CHL/IU Cell) (OECD 473)

Carcinogenicity classification (ACGIH) : N/E

Reproductive toxicity: N/D

STOT-Single exposure: N/D

STOT- Repeated exposure

Rats administered 200 mg/kg/day by oral gavage for 28 days showed increase in liver weights and hypertrophy of hepatocytes. NOAEL: 40mg/kg/day

Rats administered 2000ppm (males) and 4000ppm (males & females) by nose –only inhalation exposure for 90 days showed increase in liver weights and/or hypertrophy of hepatocytes.

NOAEL: 1000ppm (males), 2000ppm (females)

Aspiration hazard: N/D

12. ECOLOGICAL INFORMATION

Biodegradability: not biodegraded

Bioaccumulation: BCF 2600(1µg/L) , 2400 (0.1µg/L) in carp

Acute Toxicity to Fish (Medaka): 96hLL50 >100mg/l

Acute Toxicity to Daphnia Magna: 48hEL50 >100mg/l (OECD202)

Algae Growth Inhibition: EL50 >100mg/l (OECD201)

Other information: N/D

13. DISPOSAL CONSIDERATIONS

Recover by distillation or remove to permit to waste disposal facility.

Reuse when possible the residual product. Send waste product for thermal destruction, using high temperature incinerators designed to burn fluorine compounds.

Reuse containers when possible, after thorough washing. Dispose of waste containers to authorized landfill, in accordance with local laws and regulations.

Do not dump this product into sewers, on the ground or into any body of water

14. TRANSPORT INFORMATION

This product is not the dangerous goods within the meaning of Recommendations on the Transport of Dangerous Goods Model Regulations by UNITED NATIONS.

- **UN No.:** N/A
- **Proper Shipping Name :** N/A
- **ADR / RID Status:** Not restricted
- **IMDG Status:** Not restricted
- **ICAO / IATA Status:** Not restricted

15. REGULATORY INFORMATION

Ensure this materials in compliance with federal requirements and ensure conformity to local regulation.

Other information

Regulations

TSCA Status: This substance is not listed in the TSCA Inventory Regulations.

Council Directive 92/32/EEC Status: This substance is not listed in the EINECS.

16. OTHER INFORMATION

- **N/A:** not applicable
- **N/E:** not established
- **MAK:** maximum workplace concentration
- **ACGIH:** American Conference of Governmental Industrial Hygienists
- **N/D:** no data

Changes were made in sections: 1(2011.10) , 2(2013.4) , 11(2014.1), 2 and 15(2015.3)

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