1 Identification

Product identifier

Product name: Perfluorohexanes

Stock number: 15812
CAS Number: 355-42-0
EC number: 206-585-0

Relevant identified uses of the substance or mixture and uses advised against.
Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Alfa Aesar
Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-9660
Fax: 800-322-4757
Email: tech@alfa.com
www.alfa.com

Information Department: Health, Safety and Environmental Department
Emergency telephone number:
During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)

Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.
STOT SE 3 H335 May cause respiratory irritation.

Hazards not otherwise classified
No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms

GHS07

Signal word Warning

Hazard statements
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary statements
P261 Avoid breathing dust/fume/gas/mist/vapors/spray
P280 Wear protective gloves / eye protection / face protection.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification
D2B - Toxic material causing other toxic effects

Classification system

HMIS ratings (scale 0-4) (Hazardous Materials Identification System)

Health (acute effects) = 1
Flammability = 1
Physical Hazard = 1

Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances
CAS# Description:
355-42-0 Perfluoro-n-hexane
Concentration: ≥100%

Identification number(s):
EC number: 206-585-0

4 First-aid measures

Description of first aid measures
After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice.

(Contd. on page 2)
44.0

After skin contact
Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.

After eye contact
Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing
Seek medical treatment.

Information for doctor
Most important symptoms and effects, both acute and delayed
Causes skin irritation.
Causes serious eye irritation.

Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5 Fire-fighting measures
Extinguishing media
Suitable extinguishing agents Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
Carbon monoxide and carbon dioxide
Hydrogen fluoride (HF)

Advice for firefighters
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures
Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation

Environmental precautions:
Do not allow product to reach sewage system or any water course.

Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Ensure adequate ventilation.

Prevention of secondary hazards:
No special measures required.

Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

Protective Action Criteria for Chemicals
PAC-1: 11 ppm
PAC-2: 120 ppm
PAC-3: 2,000 ppm

7 Handling and storage
Handling
Precautions for safe handling
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.

Information about protection against explosions and fires:
No information known.

Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles:
Store away from oxidizing agents.

Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

Specific end use(s)
No further relevant information available.

8 Exposure controls/personal protection
Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters
Components with limit values that require monitoring at the workplace:
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information:
No data

Exposure controls
Personal protective equipment
General protective and hygienic measures
The usual precautionary measures for handling chemicals should be followed.

Breathing equipment:
Use suitable respirator when high concentrations are present.

Recommended filter device for short term use:
Use a respirator with multi-purpose combination (US) or type AXBEK (EN 14387) as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards such as NIOSH (USA) or CEN (EU).

Protection of hands:
Impervious gloves

Check protective gloves prior to each use for their proper condition.
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Material of gloves Nitrile rubber, NBR

Eye protection:
Safety glasses with side shields / NIOSH (US) or EN 166(EU)

Body protection:
Protective work clothing.

USA

(Contd. on page 3)
### 9 Physical and chemical properties

**Information on basic physical and chemical properties**

**General Information**

- **Appearance:** Liquid
- **Form:** Liquid
- **Odor:** Not determined
- **Odor threshold:** Not determined
- **pH-value:** Not determined

**Change in condition**

- **Melting point/Melting range:** -4 °C (25 °F)
- **Boiling point/Boiling range:** 58-60 °C (136-140 °F)
- **Sublimation temperature / start:** Not determined

- **Flash point:** Not determined
- **Flammability (solid, gaseous):** Not determined
- **Ignition temperature:** Not determined
- **Decomposition temperature:** Not determined
- **Auto igniting:** Not determined

- **Danger of explosion:** Not determined

**Explosion limits:**

- **Lower:** Not determined
- **Upper:** Not determined
- **Vapor pressure:** Not determined
- **Density at 20 °C (68 °F):** 1.699 g/cm³ (14.178 lbs/gal)
- **Relative density:** Not determined
- **Vapor density:** Not determined
- **Evaporation rate:** Not determined
- **Solubility in / Miscibility with Water:** Not determined
- **Partition coefficient (n-octanol/water):** Not determined
- **Viscosity:** dynamic: Not determined. kinematic: Not determined.

**Other information**

No further relevant information available.

### 10 Stability and reactivity

**Reactivity**

No information known.

**Chemical stability**

Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided:** Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions**

Reacts with strong oxidizing agents

**Conditions to avoid**

No further relevant information available.

**Incompatible materials:**

Oxidizing agents

**Hazardous decomposition products:**

Carbon monoxide and carbon dioxide

Hydrogen fluoride

### 11 Toxicological information

**Information on toxicological effects**

**Acute toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

**LD/LC50 values that are relevant for classification:** No data

**Skin irritation or corrosion:** May cause irritation

**Eye irritation or corrosion:** May cause irritation

**Sensitization:** No sensitizing effects known.

**Germ cell mutagenicity:** No effects known.

**Carcinogenicity:** No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

**Reproductive toxicity:** No effects known.

**Specific target organ system toxicity - repeated exposure:** No effects known.

**Specific target organ system toxicity - single exposure:** May cause respiratory irritation.

**Aspiration hazard:** No effects known.

**Subacute to chronic toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

### 12 Ecological information

**Toxicity**

Aquatic toxicity: No further relevant information available.

**Persistence and degradability**

No further relevant information available.

**Bioaccumulative potential**

No further relevant information available.

**Mobility in soil**

No further relevant information available.

**Additional ecological information:**

**General notes:**

Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.

Avoid transfer into the environment.

**Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

**Other adverse effects**

No further relevant information available.

### 13 Disposal considerations

**Waste treatment methods**

Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.
14 Transport information

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<td>UN &quot;Model Regulation&quot;:</td>
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15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

GHS07

Signal word Warning

Hazard statements
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P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory. All components of this product are listed on the Canadian Non-Domestic Substances List (NDSL).

SARA Section 313 (specific toxic chemical listings) Substance is not listed.

California Proposition 65
Prop 65 - Chemicals known to cause cancer Substance is not listed.
Prop 65 - Developmental toxicity Substance is not listed.
Prop 65 - Developmental toxicity, female Substance is not listed.
Prop 65 - Developmental toxicity, male Substance is not listed.

Information about limitation of use: For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.
Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department

Date of preparation/Revision: Print date, revision date and version number are in the header of each page.

Abbreviations and acronyms:
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
ADN: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
AMTM: Hazardous Materials Identification System (USA)
CAS: Chemical Abstracts Service (division of the American Chemical Society)
CAS: Chemical Abstracts Service (division of the American Chemical Society)
CPCB: Central Pollution Control Board
DOT: US Department of Transportation
DOT: US Department of Transportation
EINECS: European Inventory of Existing Commercial Chemical Substances
EINECS: European Inventory of Existing Commercial Chemical Substances
EPA: Environmental Protection Agency (USA)
EPA: Environmental Protection Agency (USA)
HAZWOPER: Hazardous Materials Awareness and Operations (USA)
IATA: International Air Transport Association
IATA: International Air Transport Association
IARC: International Agency for Research on Cancer
IARC: International Agency for Research on Cancer
LC50: Lethal concentration, 50 percent
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
LD50: Lethal dose, 50 percent
LMIS: HMIS: Hazardous Materials Identification System (Canada)
LMIS: HMIS: Hazardous Materials Identification System (Canada)
MSDS: Material Safety Data Sheet
MSDS: Material Safety Data Sheet
NTP: National Toxicology Program (USA)
NTP: National Toxicology Program (USA)
OSHA: Occupational Safety and Health Administration (USA)
OSHA: Occupational Safety and Health Administration (USA)
PBT: Persistent, Bioaccumulative and Toxic
PBT: Persistent, Bioaccumulative and Toxic
PHS: Phamaceuticals Reporting System
PHS: Phamaceuticals Reporting System
P(n): Persistent and very Bioaccumulative
P(n): Persistent and very Bioaccumulative
SVHC: Substances of Very High Concern
SVHC: Substances of Very High Concern
U.S. EPA: Environmental Protection Agency (USA)
WHO: World Health Organization
WHO: World Health Organization
Yates Int. 2A: Serious eye damage/eye irritation – Category 2
Yates Int. 2A: Serious eye damage/eye irritation – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
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USA -