1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name: PERFLUOROOCTANOIC ACID
Synonyms: Pentadecafluorooctanoic acid
            Perfluorocaprylic acid
Product number: C8AC
CAS-No.: 335-67-1

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Laboratory chemicals, manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company: Exfluor Research Corporation
          2350 Double Creek Drive
          ROUND ROCK, TEXAS 78664
          USA

Telephone: +1 512-310-9044

1.4 24-hour Emergency telephone number

Contact INFOTRAC at:
          1-800-535-5053 (US, Canada)
          1-352-323-3500 (International)

ER # 84263

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, oral (Category 4) H302
Acute aquatic toxicity (Category 3) H402
Chronic aquatic toxicity (Category 3) H412
Skin corrosion (Category 1B) H314
Serious eye damage (Category 1) H318

2.2 GHS Label Elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H402 Harmful to aquatic life.
H412 Harmful to aquatic life with long lasting effects
Precautionary statement(s)

P260 Do not breathe fume/ gas /mist/ vapor.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do—continue rinsing.
P310 Immediately call a POISON CENTER or doctor/ physician.
P362 Take off contaminated clothing and wash before reuse.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

none

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances
Formula: \( \text{C}_8\text{HF}_{15}\text{O}_2 \)
Molecular Weight: 414.07 g/mol
Component: Perfluorooctanoic acid
CAS-No.: 335-67-1
EC-No.: 206-397-9
Concentration: 98%

4. FIRST AID MEASURES

4.1 Description of first-aid measures

General advice
Move out of dangerous area. Consult a physician. Show this safety sheet to the doctor in attendance.

If inhaled
Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

In case of skin contact
Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.

In case of eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Ensure adequate flushing of the eyes by separating the eyelids with fingers.

If swallowed
Do not induce vomiting. Never give anything by mouth to an unconscious person. Allow victim to rinse his mouth with water. Allow victim to drink 2 – 4 cupfuls of water. Call Poison Control center.
4.2 **Most important symptoms and effects, both acute and delayed**
See § 2.2 and § 11.

4.3 **Indication of any immediate medical attention and special treatment needed**
Note to physician: Treat symptomatically and supportively.

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5. **FIRE FIGHTING MEASURES**

5.1 **Extinguishing media**
Water spray, carbon dioxide, dry chemical powder, or polymer foam.

5.2 **Special hazards arising from the substance or mixture**
Releases toxic fumes of carbon oxides and hydrogen fluoride.

5.3 **Advice for firefighters**
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 **Further information**

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6. **ACCIDENTAL RELEASE MEASURES**

6.1 **Personal precautions, protective equipment, and emergency measures**
Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Restrict access to area until completion of clean-up.

6.2 **Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not allow material to enter drains. If necessary, dike ahead of spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.

*If applicable*: If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the US at 1-800-424-8802.

6.3 **Methods and materials for containment and cleaning up**
Soak up the spill with an inert absorbent material. Contaminated absorbent material may pose the same hazards as the spilled product. Place in container for disposal according to local regulations.

6.4 **Reference to other sections**
Refer to protective measures listed in § 7 and § 8.

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7. **HANDLING AND STORAGE**

7.1 **Precautions for safe handling**
For precautions, see § 2.2.
Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye/face protection. Use only in well-ventilated areas. Avoid inhalation of vapor or mist. Avoid contact with skin, eyes, and clothing. Keep away from heat and open flames. Do not eat, drink, or smoke when using this product. Wash hands thoroughly after handling.

7.2 **Conditions for safe storage, including any incompatibilities**
Keep container tightly closed. Store in cool, dry, and well-ventilated place. Empty containers retain residue (powder and/or vapor) and can be dangerous. Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances (see § 10.5).

7.3 **Specific use(s)**
Apart from the uses mentioned in § 1.2 no other specific uses are stipulated.
8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls
Use only in well-ventilated areas. Provide local exhaust or a process enclosure ventilation system. Avoid contact with skin, eyes and clothing.

Personal protective equipment

Eye/face protection
Wear safety glasses or chemical safety goggles and face shield. Provide an emergency eye wash station and quick drench shower in the immediate work area.

Skin protection
Handle with appropriate chemical-resistant gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body protection
The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

General hygiene considerations
Do not breathe vapors. Avoid contact with skin, eyes, and clothing. Do not eat, drink, or smoke when using this product. Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance colorless flakes
b) Odor no data available
c) Odor threshold no data available
d) pH 2.6 at 1 g/L
e) Melting/freezing point 55 - 56 °C (131 - 133 °F) - lit.
f) Initial boiling point/range 189 °C (372 °F) at 981 hPa (736 mmHg) - lit.
g) Flash point N/A
h) Evaporation rate no data available
i) Flammability (solid, gas) no data available
j) Upper/lower flammability or explosive limits no data available
k) Vapor pressure 0.69 hPa (0.52 mmHg) at 25 °C (77 °F)
l) Vapor density no data available
m) Relative density 0.900 g/cm3
n) Solubility no data available
o) Partition coefficient: n-octanol/water no data available
9.2 Other safety information
none

10. STABILITY AND REACTIVITY

10.1 Reactivity
No unusual reactivity. See § 10.5.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reaction
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing and reducing agents, Strong bases.

10.6 Hazardous decomposition products
Other decomposition products – no data available
In event of fire: see § 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute toxicity
Inhalation: no data available
Dermal: no data available
LD50 Intraperitoneal – rat – 189 mg/kg

Skin corrosion/ irritation
No data available

Serious eye damage/ irritation
No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
Rat – DNA damage

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**
No data available

**Specific target organ toxicity – single exposure**
No data available

**Specific target organ toxicity -- repeated exposure**
No data available

**Aspiration hazard**
No data available

11.2 **Additional information**
RTECS: RH0781000
Cough, Shortness of breath, Headache, Nausea, Vomiting
Stomach irregularities based on human evidence

12. **ECOLOGICAL INFORMATION**

12.1 **Toxicity**
No data available

12.2 **Persistence and degradability**
No data available

12.3 **Bioaccumulative potential**
No data available

12.4 **Mobility in soil**
No data available

12.5 **Results of PBT and vPvB assessment**
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 **Other adverse effects**
Harmful to aquatic life.

13. **DISPOSAL CONSIDERATIONS**

13.1 **Waste treatment methods**

**Product**
Refer to protective measures listed in § 7 and § 8.
Dispose of in accordance with all applicable federal, state, and local regulations.
Place in a chemical secured landfill or incinerate at 1200°C with a 2 second dwell time or at 1600°C with a 1.5 second dwell time. Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**
Empty containers retain residue and can be dangerous. Disposal must be made according to official regulations.
14. TRANSPORTATION INFORMATION

**DOT (US) / IMDG / IATA**

Proper Shipping Name: Corrosive solid, acidic, organic, n.o.s. (Perfluorooctanoic acid)

UN / ID #: 3261

Hazard Class: 8

Packing Group: II

Labels: 8

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15. REGULATORY INFORMATION

**US federal information**

Listed on TSCA Inventory.

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16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Exfluor Research Corporation shall not be held liable for any damage resulting from handling or from contact with the above product.