



1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name: PERFLUOROAZELAIC ACID
Synonyms: Perfluorononanedioic acid
Product number: C9DIAC
CAS-No. 23453-64-7

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

Identified uses: For R&D use only.

1.3 Details of the supplier of the safety data sheet

Company: Exflur 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)

Skin corrosion/ irritation (Category 1A) H314
Serious eye damage (Category 1) H318
Specific target organ toxicity – single exposure, Respiratory system
(Category 3) H335

2.2 GHS Label Elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.

Precautionary statement(s)

P202 Do not handle until all safety precautions have been read and understood.
P233 Keep container tightly closed.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink, or smoke when using this product.

P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ eye protection/ face protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
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.
P312	Call a POISON CENTER or doctor/ physician if you feel unwell.
P321	Specific treatment (see supplemental first aid instructions on this label).
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
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	C ₉ H ₂ F ₁₄ O ₄
Molecular Weight	440 g/mol
CAS-No.	23453-64-7

No ingredients are hazardous according to OSHA criteria.
No components need to be disclosed according to the applicable regulations.

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.

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

Slight fire hazard. Dust/ air mixtures may ignite or explode.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment, and emergency measures

Use personal protective equipment. Avoid breathing vapors, mist, or gas. Avoid raising dust. 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

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.

6.3 Methods and materials for containment and cleaning up

Prevent further leakage or spillage if safe to do so. 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.

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.

6.4 Reference to other sections

Refer to protective measures listed in § 7 and § 8.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye/face protection. Provide appropriate ventilation at places where dust is formed. Avoid inhalation of dust. 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

No occupational exposure limits established.

8.2 Exposure controls

Appropriate engineering controls

Use only in well-ventilated areas. Provide local exhaust or a process enclosure ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Avoid contact with skin, eyes and clothing.

Personal protective equipment

Eye/face protection

Wear 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

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. 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	white solid
b)	Odor	no data available
c)	Odor threshold	no data available
d)	pH	no data available
e)	Melting/freezing point	no data available
f)	Initial boiling point/range	215°C (419 °F) at 60 mmHg
g)	Flash point	no data available
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	no data available
l)	Vapor density	no data available
m)	Relative density	no data available
n)	Solubility	no data available
o)	Partition coefficient: n-octanol/water	no data available
p)	Auto-ignition temperature	no data available
q)	Decomposition temperature	no data available
r)	Viscosity	no data available
s)	Explosive properties	no data available
t)	Oxidizing properties	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

Extreme heat. Avoid generating dust.

10.5 Incompatible materials

Strong oxidizing agents, reducing agents, Strong bases.

10.6 Hazardous decomposition products

Hazardous polymerization does not occur.

Releases toxic fumes of carbon oxides and hydrogen fluoride.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

No data available

Skin corrosion/ irritation

Irritant effect.

Serious eye damage/ irritation

Irritant effect.

Respiratory or skin sensitization

Irritant effect.

Germ cell mutagenicity

No data available

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: Not available

To the best of our knowledge, the acute and chronic toxicity of this substance is not fully known.

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

No data available

13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods****Product**

Refer to protective measure 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.
(Perfluoroazelaic acid)

UN / ID #: UN 3261

Hazard Class: 8

Packing Group: II

Labels: 8

15. REGULATORY INFORMATION**US federal information**

This product is not listed on the TSCA Inventory. For R&D use only.

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. Exflur Research Corporation shall not be held liable for any damage resulting from handling or from contact with the above product.