1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
  - **Trade name:** Perfluoroundecanoic acid
  - **Part number:** N-1830, N-1830-100MG
  - **CAS Number:** 2058-94-8
  - **EC number:** 218-165-4

- **Relevant identified uses of the substance or mixture and uses advised against**
  - Reagents and Standards for Analytical Chemical Laboratory Use

- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:**
    Agilent Technologies Manufacturing GmbH & Co. KG
    Hewlett-Packard-Str.8
    76337 Waldbronn
    Germany

- **Further information obtainable from:**
  - Telephone: 0800 603 1000
  - pdl-msds_author@agilent.com
  - **Emergency telephone number:** CHEMTREC®: +(44)-870-8200418

2 Hazards identification

- **Classification of the substance or mixture**
  - **Classification according to Regulation (EC) No 1272/2008**

  ![GHS07](image)

  Acute Tox. 4 H302 Harmful if swallowed.
  Acute Tox. 4 H312 Harmful in contact with skin.
  Acute Tox. 4 H332 Harmful if inhaled.
  Skin Irrit. 2 H315 Causes skin irritation.
  Eye Irrit. 2 H319 Causes serious eye irritation.

- **Label elements**
  - **Labelling according to Regulation (EC) No 1272/2008**
    The substance is classified and labelled according to the CLP regulation.

- **Hazard pictograms**

  ![GHS07](image)

- **Signal word** Warning

- **Hazard-determining components of labelling:**
  - perfluoroundecanoic acid (PFUnDA)

- **Hazard statements**
  - H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.
  - H315 Causes skin irritation.
Trade name: Perfluoroundecanoic acid

H319 Causes serious eye irritation.

· Precautionary statements

P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read label before use.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash 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/protective clothing/eye protection/face protection.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P302+P352 IF ON SKIN: Wash with plenty of water.
P321 Specific treatment (see on this label).
P304+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P337+P313 If eye irritation persists: Get medical advice/attention.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· Other hazards

· Results of PBT and vPvB assessment

· PBT: Not applicable.
· vPvB: Not applicable.

3 Composition/information on ingredients

· Chemical characterisation: Substances

· CAS No. Description

2058-94-8 perfluoroundecanoic acid (PFUnDA)

· Identification number(s)

· EC number: 218-165-4

· SVHC

2058-94-8 perfluoroundecanoic acid (PFUnDA)

4 First aid measures

· Description of first aid measures

· General information:

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

· After skin contact:

Immediately wash with water and soap and rinse thoroughly.

· After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
Trade name: Perfluoroundecanoic acid

- After swallowing: Call for a doctor immediately.
- Information for doctor:
- Most important symptoms and effects, both acute and delayed: No further relevant information available.
- Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Firefighting measures

- Extinguishing media
  - Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
  - Special hazards arising from the substance or mixture: No further relevant information available.
- Advice for firefighters
  - Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures: Not required.
- Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
- 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.

7 Handling and storage

- Handling:
  - Precautions for safe handling
    Ensure good ventilation/exhaustion at the workplace.
    Prevent formation of aerosols.
  - Information about fire - and explosion protection: No special measures required.
- Conditions for safe storage, including any incompatibilities
- Storage:
  - Requirements to be met by storerooms and receptacles: No special requirements.
  - Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep container tightly sealed.
- Specific end use(s): No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical facilities: No further data; see item 7.
- Control parameters
- Ingredients with limit values that require monitoring at the workplace: Not required.
- Additional information: The lists valid during the making were used as basis.
Trade name: Perfluoroundecanoic acid

- Exposure controls
- Personal protective equipment:
- General protective and hygienic measures:
  Keep away from foodstuffs, beverages and feed.
  Immediately remove all soiled and contaminated clothing
  Wash hands before breaks and at the end of work.
  Avoid contact with the eyes and skin.
- Respiratory protection:
  When used as intended with Agilent instruments the use of the product under normal laboratory conditions and
  with standard practices does not result in significant airborne exposures and therefore respiratory protection is not
  needed.
  Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved
  device equipment with appropriate organic or acid gas cartridge.
- Protection of hands:
  Although not recommended for constant contact with the chemicals or for clean up, nitrile gloves 11-13mil
  thickness are recommended for normal use. The breakthrough time is 1hr. For cleaning a spill where there is direct
  contact of the chemical, butyl rubber gloves are recommended 12-15mil thickness with breakthrough times
  exceeding 4 hrs. Supplier recommendations should be followed.
- Material of gloves
  For normal use: nitrile rubber, 11-13 mil thickness
  For direct contact with the chemical: butyl rubber, 12-15 mil thickness
  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and
  varies from manufacturer to manufacturer.
- Penetration time of glove material
  For normal use: nitrile rubber: 1 hour
  For direct contact with the chemical: butyl rubber: > 4 hours
- Eye protection:

Tightly sealed goggles

9 Physical and chemical properties

- Information on basic physical and chemical properties
- General Information
  - Appearance:
    - Form: Fluid
    - Colour: Not determined.
  - Odour:
    - Odour: Characteristic
    - Odour threshold: Not determined.
  - pH-value: Not determined.
- Change in condition
  - Melting point/freezing point: Undetermined.
  - Initial boiling point and boiling range: Undetermined.
- Flash point: 113 °C
- Flammability (solid, gas): Not applicable.
Trade name: Perfluoroundecanoic acid

### 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
  - **Thermal decomposition / conditions to be avoided**: No decomposition if used according to specifications.
  - **Possibility of hazardous reactions**: No dangerous reactions known.
  - **Conditions to avoid**: No further relevant information available.
  - **Incompatible materials**: No further relevant information available.
  - **Hazardous decomposition products**: No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
  - **Acute toxicity**
    Harmful if swallowed, in contact with skin or if inhaled.
- **LD/LC50 values relevant for classification:**
  - **ATE (Acute Toxicity Estimates)**
    | Route    | LD50/LC50 | Value |
    |-----------|-----------|-------|
    | Oral      | LD50      | 500 mg/kg |
    | Dermal    | LD50      | 1,100 mg/kg |
    | Inhalative| LC50/4 h  | 11 mg/L  |

(Contd. on page 6)
Trade name: Perfluoroundecanoic acid

12 Ecological information

- Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability: No further relevant information available.
- Behaviour in environmental systems:
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.
- Additional ecological information:
  - General notes:
    Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water
    Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
  - 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
- Recommendation
  Must not be disposed together with household garbage. Do not allow product to reach sewage system.

  European waste catalogue

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP 4</td>
<td>Irritant - skin irritation and eye damage</td>
</tr>
<tr>
<td>HP 6</td>
<td>Acute Toxicity</td>
</tr>
</tbody>
</table>

- Uncleaned packaging:
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- UN-Number
- ADR, ADN, IMDG, IATA: not regulated

(Contd. on page 7)
15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture
  · Directive 2012/18/EU
  · Named dangerous substances - ANNEX I Substance is not listed.
  · REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3
· National regulations:
  · Other regulations, limitations and prohibitive regulations
    · Substances of very high concern (SVHC) according to REACH, Article 57
      2058-94-8 perfluoroundecanoic acid (PFUnDA)
    · Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information
The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

· Abbreviations and acronyms:
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  IATA: International Air Transport Association
  GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  EINECS: European Inventory of Existing Commercial Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  VOC: Volatile Organic Compounds (USA, EU)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  PBT: Persistent, Bioaccumulative and Toxic
  SVHC: Substances of Very High Concern
  vPvB: very Persistent and very Bioaccumulative
  Acute Tox. 4: Acute toxicity – Category 4
  Skin Irrit. 2: Skin corrosion/irritation – Category 2
  Eye Irrit. 2: Serious eye damage/eye irritation – Category 2