1 Identification

- Product identifier
- Trade name: Decanal
- Part number: WRK-1510
- CAS Number: 112-31-2
- EC number: 203-957-4
- 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 Australia Pty Ltd
  679 Springvale Road
  Mulgrave
  Victoria 3170, Australia

- Further information obtainable from:
  Telephone: 1800 802 402
  e-mail: pdl-msds_author@agilent.com
- Emergency telephone number: CHEMTREC®: +(61) - 290372994

2 Hazard(s) Identification

- Classification of the substance or mixture

Eye Irrit. 2A H319 Causes serious eye irritation.

Flam. Liq. 4 H227 Combustible liquid.

- Label elements
- GHS label elements
  The substance is classified and labelled according to the Globally Harmonised System (GHS).
- Hazard pictograms

- Signal word Warning
- Hazard statements
  Combustible liquid.
  Causes serious eye irritation.
- Precautionary statements
  If medical advice is needed, have product container or label at hand.
  Keep out of reach of children.
  Read label before use.
  Keep away from flames and hot surfaces. No smoking.
  Wash thoroughly after handling.

(Contd. on page 2)
Wear protective gloves/protective clothing/eye protection/face protection.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
In case of fire: Use for extinction: CO2, powder or water spray.
Store in a well-ventilated place. Keep cool.
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 and Information on Ingredients

- Chemical characterisation: Substances
  - CAS No. Description
    - 112-31-2 decanal
  - Identification number(s)
  - EC number: 203-957-4

4 First Aid Measures

- Description of first aid measures
  - After inhalation: Supply fresh air; consult doctor in case of complaints.
  - After skin contact: Generally the product does not irritate the skin.
  - After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
  - After swallowing: If symptoms persist consult doctor.
- 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 Fire Fighting Measures

- Extinguishing media
  - Suitable extinguishing agents:
    - CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- Special hazards arising from the substance or mixture: No further relevant information available.
- Advice for firefighters
  - Protective equipment: No special measures required.

6 Accidental Release Measures

- Personal precautions, protective equipment and emergency procedures
  - Wear protective equipment. Keep unprotected persons away.
- Environmental precautions:
  - Do not allow product to reach sewage system or any water course.
Trade name: Decanal

Inform respective authorities in case of seepage into water course or sewage system. 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** No special precautions are necessary if used correctly.
  - **Information about fire - and explosion protection:** Keep ignition sources away - Do not smoke.

- **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 and 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.

- **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. 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.
Trade name: Decanal

- 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: Characteristic
    - Odour threshold: Not determined.
  - pH-value: Not determined.
- Change in condition
  - Melting point/freezing point: 7 °C
  - Initial boiling point and boiling range: 229 °C
- Flash point: 83 °C
- Flammability (solid, gas): Not applicable.
- Ignition temperature: 200 °C
- Decomposition temperature: Not determined.
- Auto-ignition temperature: Not determined.
- Explosive properties: Not determined.
- Explosion limits:
  - Lower: Not determined.
  - Upper: Not determined.
- Vapour pressure at 20 °C: 0.1 hPa
- Density at 20 °C: 0.832 g/cm³
- Relative density
- Vapour density
- Evaporation rate
- Solubility in / Miscibility with water: Not miscible or difficult to mix.
Trade name: Decanal

<table>
<thead>
<tr>
<th>Partition coefficient: n-octanol/water:</th>
<th>Not determined.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity:</td>
<td></td>
</tr>
<tr>
<td>Dynamic:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Kinematic:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Solvent content:</td>
<td></td>
</tr>
<tr>
<td>VOC (EC)</td>
<td>0.00 %</td>
</tr>
<tr>
<td>Other information</td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

10 Stability and Reactivity

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

11 Toxicological Information

- **Information on toxicological effects**
- **Acute toxicity**
- **LD/LC50 values relevant for classification**:

  ATE (Acute Toxicity Estimates)
  
<table>
<thead>
<tr>
<th>Oral</th>
<th>LD50</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>3,730 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>LD50</td>
</tr>
<tr>
<td></td>
<td>4,193 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

  112-31-2 decanal
  
<table>
<thead>
<tr>
<th>Oral</th>
<th>LD50</th>
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<tr>
<td></td>
<td>&gt;41,750 mg/kg (mouse)</td>
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<tr>
<td></td>
<td>3,730 mg/kg (rat)</td>
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<tr>
<td>Dermal</td>
<td>LD50</td>
</tr>
<tr>
<td></td>
<td>4,193 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

- **Primary irritant effect**: No irritant effect.
- **Skin corrosion/irritation**: No irritant effect.
- **Serious eye damage/irritation**: Irritating effect.
- **Respiratory or skin sensitisation**: No sensitising effects known.

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.
Trade name: Decanal

- Additional ecological information:
  - General notes:
    Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water
    Do not allow product to reach ground water, water course or sewage system.
    Danger to drinking water if even small quantities leak into the ground.
  - 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.

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

14 Transport information

- UN-Number
  - ADG, IMDG, IATA
  - ADN
    UN3082
    not regulated

- UN proper shipping name
  - ADG
    3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (decanal)
    not regulated
  - ADN
    not regulated
  - IMDG
    ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (decanal), MARINE POLLUTANT
    not regulated
  - IATA
    not regulated

- Transport hazard class(es)
  - ADG, IMDG, IATA
  - Class
    not regulated
  - Label
    9
  - ADN/R Class:
    not regulated

- Packing group
  - ADG, IMDG, IATA
    III

- Environmental hazards:
  - Not applicable.

- Special precautions for user
  - Not applicable.

- Danger code (Kemler):
  - 90

- Stowage Category
  - A

- Transport in bulk according to Annex II of Marpol and the IBC Code
  - Not applicable.
### Transport/Additional information:

- **ADG**
- **Limited quantities (LQ)**: 5L
- **Excepted quantities (EQ)**: Code: E1
- **Maximum net quantity per inner packaging**: 30 ml
- **Maximum net quantity per outer packaging**: 1000 ml

- **Transport category**: 3
- **Tunnel restriction code**: E

<table>
<thead>
<tr>
<th>IMDG</th>
<th>Limited quantities (LQ)</th>
<th>5L</th>
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<td>Maximum net quantity per outer packaging: 1000 ml</td>
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</tbody>
</table>

- **UN "Model Regulation"**: not regulated

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - **Australian Inventory of Chemical Substances**
    - Substance is listed.
  - **Standard for the Uniform Scheduling of Medicines and Poisons**
    - Substance is not listed.
  - **Directive 2012/18/EU**
  - **Named dangerous substances - ANNEX I**
    - Substance is not listed.
  - **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
  - 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
  - vPvB: very Persistent and very Bioaccumulative
  - Flam. Liq. 4: Flammable liquids – Category 4
  - Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A