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

- **Product identifier**
- **Trade name:** Formaldehyde Neat
- **Part number:** WRK-151A
- **CAS Number:** 50-00-0
- **EC number:** 200-001-8
- **Index number:** 605-001-00-5
- **Relevant identified uses of the substance or mixture and uses advised against** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:** ULTRA Scientific, Inc.
  250 Smith Street
  North Kingstown, RI 02852
  USA
- **Further information obtainable from:**
  Telephone: (401) 294-9400
  Fax: (401) 295-2300
  E-mail: regulatory@ultrasci.com
- **Emergency telephone number:**
  US: +1-800-424-9300
  Outside US: +1-703-527-3887

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
  - GHS02 flame
  - Flam. Liq. 3 H226 Flammable liquid and vapour.
  - GHS06 skull and crossbones
  - Acute Tox. 3 H301 Toxic if swallowed.
  - Acute Tox. 3 H311 Toxic in contact with skin.
  - Acute Tox. 3 H331 Toxic if inhaled.
  - GHS08 health hazard
  - Muta. 2 H341 Suspected of causing genetic defects.
  - Carc. 1B H350 May cause cancer.
  - GHS05 corrosion
  - Skin Corr. 1B H314 Causes severe skin burns and eye damage.

(Contd. on page 2)
Trade name: Formaldehyde Neat

GHS07

Skin Sens. 1  H317  May cause an allergic skin reaction.

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

GHS02  GHS05  GHS06  GHS08

· Signal word Danger
· Hazard-determining components of labelling:
formaldehyde
· Hazard statements
H226   Flammable liquid and vapour.
H301+H311+H331   Toxic if swallowed, in contact with skin or if inhaled.
H314   Causes severe skin burns and eye damage.
H317   May cause an allergic skin reaction.
H341   Suspected of causing genetic defects.
H350   May cause cancer.
· 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.
P201   Obtain special instructions before use.
P202   Do not handle until all safety precautions have been read and understood.
P210   Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240   Ground/bond container and receiving equipment.
P241   Use explosion-proof electrical/ventilating/lighting equipment.
P242   Use only non-sparking tools.
P243   Take precautionary measures against static discharge.
P260   Do not breathe dusts or mists.
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.
P272   Contaminated work clothing should not be allowed out of the workplace.
P280   Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310   IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P301+P330+P331   IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353   IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340   IF INHALED: Remove person to fresh air and keep 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.
P308+P313   IF exposed or concerned: Get medical advice/attention.
P312   Call a POISON CENTER/doctor if you feel unwell.
Trade name: Formaldehyde Neat

- P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P370+P378 In case of fire: Use for extinction: CO2, powder or water spray.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P403+P235 Store in a well-ventilated place. Keep cool.
- P405 Store locked up.
- 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
  50-00-0 formaldehyde
- Identification number(s)
  - EC number: 200-001-8
  - Index number: 605-001-00-5

4 First aid measures

- Description of first aid measures
  - General information:
    Immediately remove any clothing soiled by the product. Remove breathing equipment only after contaminated clothing have been completely removed. In case of irregular breathing or respiratory arrest provide artificial respiration.
  - After inhalation:
    Supply fresh air or oxygen; call for doctor. 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. Then consult a doctor.
  - After swallowing:
    Do not induce vomiting; call for medical help immediately. Drink plenty of water and provide fresh air. 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:
    CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
  - Special hazards arising from the substance or mixture
    During heating or in case of fire poisonous gases are produced.
Trade name: Formaldehyde Neat

- Advice for firefighters
- Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  Mount respiratory protective device.
  Wear protective equipment. Keep unprotected persons away.
- Environmental precautions:
  Dilute with plenty of water.
  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).
  Use neutralising agent.
  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.
  Open and handle receptacle with care.
  Prevent formation of aerosols.
- Information about fire - and explosion protection:
  Keep ignition sources away - Do not smoke.
  Protect against electrostatic charges.
  Keep respiratory protective device available.
- 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:
  50-00-0 formaldehyde
  | WEL | Short-term value: 2.5 mg/m³, 2 ppm |
  | Long-term value: 2.5 mg/m³, 2 ppm |
- 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.
    Store protective clothing separately.
    Avoid contact with the eyes and skin.
· Respiratory protection:
  In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
· Protection of hands:
  Protective gloves
· Material of gloves
  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
  The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· Eye protection:
  Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties
  · General Information
  · Appearance:
    Form:   Fluid
    Colour: Colourless
    Odour:  Pungent
    Odour threshold: Not determined.
  · pH-value: Not determined.
· Change in condition
  Melting point/freezing point: -92 °C
  Initial boiling point and boiling range: -21 °C
· Flash point: 55 °C
· Flammability (solid, gas): Not applicable.
· Ignition temperature: ~300 °C
· Decomposition temperature: Not determined.
· Auto-ignition temperature: Not determined.
Trade name: Formaldehyde Neat

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosive properties</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Explosion limits:</td>
<td></td>
</tr>
<tr>
<td>Lower:</td>
<td>7 Vol %</td>
</tr>
<tr>
<td>Upper:</td>
<td>73 Vol %</td>
</tr>
<tr>
<td>Vapour pressure at 20 °C:</td>
<td>1.7 hPa</td>
</tr>
<tr>
<td>Density at 20 °C:</td>
<td>1.12 g/cm³</td>
</tr>
<tr>
<td>Relative density:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Vapour density:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Evaporation rate:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Solubility in / Miscibility with water:</td>
<td>Fully miscible.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Viscosity:</td>
<td></td>
</tr>
<tr>
<td>Dynamic at 20 °C:</td>
<td>2 mPas</td>
</tr>
<tr>
<td>Kinematic:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Solvent content:</td>
<td></td>
</tr>
<tr>
<td>Organic solvents:</td>
<td>100.0 %</td>
</tr>
<tr>
<td>VOC (EC)</td>
<td>100.00 %</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**
  - **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**
  Toxic if swallowed, in contact with skin or if inhaled.
- **LD/LC50 values relevant for classification:**
  **ATE (Acute Toxicity Estimates)**
<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
<th>LC50/4 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>100 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>270 mg/kg (rabbit)</td>
<td></td>
</tr>
<tr>
<td>Inhalative</td>
<td>0.59 mg/L (rat)</td>
<td></td>
</tr>
</tbody>
</table>
  **50-00-0 formaldehyde**
<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
<th>LC50/4 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>100 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>270 mg/kg (rabbit)</td>
<td></td>
</tr>
<tr>
<td>Inhalative</td>
<td>0.588 mg/L (rat)</td>
<td></td>
</tr>
</tbody>
</table>
**Trade name:** Formaldehyde Neat

- **Primary irritant effect:**
  - Skin corrosion/irritation
    Causes severe skin burns and eye damage.
  - **Serious eye damage/irritation**
    Causes severe skin burns and eye damage.
  - **Respiratory or skin sensitisation**
    May cause an allergic skin reaction.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
  - **Germ cell mutagenicity**
    Suspected of causing genetic defects.
  - **Carcinogenicity**
    May cause cancer.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

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**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 2 (German Regulation) (Assessment by list): hazardous for water
  Do not allow product to reach ground water, water course or sewage system.
  Must not reach sewage water or drainage ditch undiluted or unneutralised.
  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.

<table>
<thead>
<tr>
<th>European waste catalogue</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP 3 Flammable</td>
</tr>
<tr>
<td>HP 6 Acute Toxicity</td>
</tr>
<tr>
<td>HP 7 Carcinogenic</td>
</tr>
<tr>
<td>HP 8 Corrosive</td>
</tr>
<tr>
<td>HP 11 Mutagenic</td>
</tr>
<tr>
<td>HP 13 Sensitising</td>
</tr>
</tbody>
</table>

(Contd. on page 8)
Trade name: Formaldehyde Neat

- Uncleaned packaging:
  - Recommendation: Disposal must be made according to official regulations.
  - Recommended cleansing agents: Water, if necessary together with cleansing agents.

### 14 Transport information

| · UN-Number | UN2209 |
| · ADR, IMDG, IATA | | 2209 FORMALDEHYDE SOLUTION |
| · UN proper shipping name | 2209 FORMALDEHYDE SOLUTION |
| · ADR | | 2209 FORMALDEHYDE SOLUTION |
| · IMDG, IATA | | 2209 FORMALDEHYDE SOLUTION |

- Transport hazard class(es)
  - ADR, IMDG, IATA

- Class
  - 8 Corrosive substances.

- Label
  - 8

- Packing group
  - ADR, IMDG, IATA
  - III

- Environmental hazards:
  - Not applicable.

- Special precautions for user
  - Warning: Corrosive substances.
  - Danger code (Kemler):
    - 80
  - EMS Number:
    - 8-07
  - Stowage Category
    - A

- Transport in bulk according to Annex II of Marpol and the IBC Code
  - Not applicable.

- Transport/Additional information:

  | · ADR | | 5L |
  | · Limited quantities (LQ) | | Code: E1 |
  | · Excepted quantities (EQ) | | Maximum net quantity per inner packaging: 30 ml |
  | | | Maximum net quantity per outer packaging: 1000 ml |

  | · Transport category | | 3 |
  | · Tunnel restriction code | | E |

  | · IMDG | | 5L |
  | · Limited quantities (LQ) | | Code: E1 |
  | · Excepted quantities (EQ) | | Maximum net quantity per inner packaging: 30 ml |
  | | | Maximum net quantity per outer packaging: 1000 ml |

- UN "Model Regulation":
  - UN 2209 FORMALDEHYDE SOLUTION, 8, III
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 listed.
  - Seveso category
    H2 ACUTE TOXIC
    P5c FLAMMABLE LIQUIDS
  - Qualifying quantity (tonnes) for the application of lower-tier requirements 5 t
  - Qualifying quantity (tonnes) for the application of upper-tier requirements 50 t
  - REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 40

- National regulations:
  - Additional classification according to Decree on Hazardous Materials, Annex II:
    Carcinogenic hazardous material group I (extremely dangerous).
    Carcinogenic hazardous material group II (very dangerous).
    Carcinogenic hazardous material group III (dangerous).

- Information about limitation of use:
  Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

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

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- 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
  vPvB: very Persistent and very Bioaccumulative
  Flam. Liq. 3: Flammable liquids – Category 3
  Acute Tox. 3: Acute toxicity – Category 3
  Skin Corr. 1B: Skin corrosion/irritation – Category 1B
  Skin Sens. 1: Skin sensitisation – Category 1
  Muta. 2: Germ cell mutagenicity – Category 2
  Carc. 1B: Carcinogenicity – Category 1B