1 Identification

· Product identifier
  · Trade name: DNA Wash Solution A
  · Part number: L-R-5
  · Application of the substance / the mixture: Laboratory chemicals

· Details of the supplier of the safety data sheet
  · Manufacturer/Supplier:
    ULTRA Scientific, Inc.
    250 Smith Street
    North Kingstown, RI  02852
    USA

· Information department:
  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 Hazard(s) identification

· Classification of the substance or mixture
  GHS02 Flame
  Flam. Liq. 2  H225  Highly flammable liquid and vapor.

  GHS08 Health hazard
  Carc. 1A  H350  May cause cancer.

  GHS07
  Eye Irrit. 2A  H319  Causes serious eye irritation.

· Label elements
  · GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
  · Hazard pictograms
    GHS02  GHS07  GHS08

· Signal word Danger

· Hazard-determining components of labeling:
  ethanol

· Hazard statements
  Highly flammable liquid and vapor.
  Causes serious eye irritation.

(Contd. on page 2)
May cause cancer.

· **Precautionary statements**
  Obtain special instructions before use.
  Do not handle until all safety precautions have been read and understood.
  Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
  Keep container tightly closed.
  Ground/bond container and receiving equipment.
  Use explosion-proof electrical/ventilating/lighting/equipment.
  Use only non-sparking tools.
  Take precautionary measures against static discharge.
  Wash thoroughly after handling.
  Wear protective gloves/protective clothing/eye protection/face protection.
  If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
  Continue rinsing.
  IF exposed or concerned: Get medical advice/attention.
  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.
  Store locked up.
  Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**
  · **NFPA ratings (scale 0 - 4)**
    Health = 2
    Fire = 3
    Reactivity = 0
  · **HMIS-ratings (scale 0 - 4)**
    Health = *2
    Fire = 3
    Reactivity = 0
  · **Other hazards**
  · **Results of PBT and vPvB assessment**
    · **PBT:** Not applicable.
    · **vPvB:** Not applicable.

### 3 Composition/information on ingredients

· **Chemical characterization:** Mixtures
· **Description:** Mixture of the substances listed below with nonhazardous additions.

#### Dangerous components:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-5 ethanol</td>
<td>64.801%</td>
</tr>
</tbody>
</table>

### 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.
Trade name: DNA Wash Solution A

- 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, extinguishing 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:
  - 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).
  - Dispose contaminated material as waste according to item 13.

- 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.

- Protective Action Criteria for Chemicals
  - PAC-1:
    - 64-17-5 ethanol 1,800 ppm
  - PAC-2:
    - 64-17-5 ethanol 3300* ppm
  - PAC-3:
    - 64-17-5 ethanol 15000* ppm

7 Handling and storage

- Handling:
  - Precautions for safe handling: Ensure good ventilation/exhaustion at the workplace.
  - Information about protection against explosions and fires:
    - Keep ignition sources away - Do not smoke.
    - Protect against electrostatic charges.
· Conditions for safe storage, including any incompatibilities
  · Storage:
    · Requirements to be met by storerooms and receptacles: Store in a cool location.
    · Information about storage in one common storage facility: Not required.
  · Further information about storage conditions:
    Keep receptacle tightly sealed.
    Store in cool, dry conditions in well sealed receptacles.
  · Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

· Control parameters

<table>
<thead>
<tr>
<th>Components with limit values that require monitoring at the workplace:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-5 ethanol</td>
<td></td>
</tr>
<tr>
<td>PEL Long-term value: 1900 mg/m³, 1000 ppm</td>
<td></td>
</tr>
<tr>
<td>REL Long-term value: 1900 mg/m³, 1000 ppm</td>
<td></td>
</tr>
<tr>
<td>TLV Short-term value: 1880 mg/m³, 1000 ppm</td>
<td></td>
</tr>
</tbody>
</table>

· Additional information: The lists that were valid during the creation 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.
  Avoid contact with the eyes and skin.

· Breathing equipment:
  In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· 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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· 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.
### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
  - **Appearance:**
    - **Form:** Fluid
    - **Color:** According to product specification
  - **Odor:** Characteristic
  - **Odor threshold:** Not determined.
- **pH-value:** Not determined.

- **Change in condition**
  - **Melting point/Melting range:** Undetermined.
  - **Boiling point/Boiling range:** 78 °C (172.4 °F)
- **Flash point:** 13 °C (55.4 °F)
- **Flammability (solid, gaseous):** Not applicable.
- **Ignition temperature:** 425 °C (797 °F)
- **Decomposition temperature:** Not determined.
- **Auto igniting:** Product is not selfigniting.

- **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

- **Explosion limits:**
  - **Lower:** 3.5 Vol %
  - **Upper:** 15 Vol %

- **Vapor pressure at 20 °C (68 °F):** 45 hPa (33.8 mm Hg)

- **Density at 20 °C (68 °F):** 0.8704 g/cm³ (7.26349 lbs/gal)
- **Relative density** Not determined.
- **Vapor density** Not determined.
- **Evaporation rate** Not determined.

- **Solubility in / Miscibility with Water:** Fully miscible.

- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**
  - **Dynamic:** Not determined.
  - **Kinematic:** Not determined.

- **Solvent content:**
  - **Organic solvents:** 64.8 %
  - **Water:** 35.2 %
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VOC content: 64.80%  
      564.0 g/l / 4.71 lb/gl  
Solids content: 0.0%  
Other information: No further relevant information available.

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:
    - LD/LC50 values that are relevant for classification:
      64-17-5 ethanol
      Oral LD50 >5,000 mg/kg (rat)
      Inhalative LC50/4 h 20,000 mg/L (rat)
    - Primary irritant effect:
      - on the skin: No irritant effect.
      - on the eye: Irritating effect.
    - Sensitization: No sensitizing effects known.
    - Additional toxicological information:
      The product shows the following dangers according to internally approved calculation methods for preparations:
      Irritant
- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
    64-17-5 ethanol I
  - NTP (National Toxicology Program)
    None of the ingredients is listed.
  - OSHA-Ca (Occupational Safety & Health Administration)
    None of the ingredients is listed.

12 Ecological information
- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
- Behavior in environmental systems:
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.
Trade name: DNA Wash Solution A

- Additional ecological information:
- General notes:
  Water hazard class 1 (Self-assessment): 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 of together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packagings:
  - Recommendation: Disposal must be made according to official regulations.
  - Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

- UN-Number
  - DOT, IMDG, IATA
  UN1987
- UN proper shipping name
  - DOT
  - IMDG ALCOHOLS, N.O.S. (ETHANOL (ETHYL ALCOHOL))
  - IATA ALCOHOLS, N.O.S. (ETHANOL)
- Transport hazard class(es)
  - DOT
    - Class 3 Flammable liquids
    - Label 3
  - IMDG, IATA
    - Class 3 Flammable liquids
    - Label 3
  - Packing group
    - DOT, IMDG, IATA II
  - Environmental hazards:
    Not applicable.
- Special precautions for user
  Warning: Flammable liquids
- Danger code (Kemler):
  33
Trade name: DNA Wash Solution A

EMS Number: F-E,S-D
Stowage Category A
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.
Transport/Additional information:
DOT
Quantity limitations On passenger aircraft/rail: 5 L
On cargo aircraft only: 60 L
IMDG
Limited quantities (LQ) 1L
Excepted quantities (EQ) Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml
UN "Model Regulation": UN 1987 ALCOHOLS, N.O.S. (ETHANOL), 3, II

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
Sara
Section 355 (extremely hazardous substances):
None of the ingredients is listed.
Section 313 (Specific toxic chemical listings):
None of the ingredients is listed.
TSCA (Toxic Substances Control Act):
All ingredients are listed.
Proposition 65
Chemicals known to cause cancer:
None of the ingredients is listed.
Chemicals known to cause reproductive toxicity for females:
None of the ingredients is listed.
Chemicals known to cause reproductive toxicity for males:
None of the ingredients is listed.
Chemicals known to cause developmental toxicity:
64-17-5 ethanol

Carcinogenic categories
EPA (Environmental Protection Agency)
None of the ingredients is listed.
TLV (Threshold Limit Value established by ACGIH)
64-17-5 ethanol A3
NIOSH-Ca (National Institute for Occupational Safety and Health)
None of the ingredients is listed.
GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
Hazard pictograms

GHS02  GHS07  GHS08

Signal word Danger

Hazard-determining components of labeling:
ethanol

Hazard statements
Highly flammable liquid and vapor.
Causes serious eye irritation.
May cause cancer.

Precautionary statements
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
If exposed or concerned: Get medical advice/attention.
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.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations:

Additional classification according to Decree on Hazardous Materials:
Carcinogenic hazardous material group III (dangerous).

Information about limitation of use:
Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation.
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.

Date of preparation / last revision 03/23/2018 / -

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
DOT: US Department of Transportation
IATA: International Air Transport Association
Trade name: DNA Wash Solution A

ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
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
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Flam. Liq. 2: Flammable liquids – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Carc. 1A: Carcinogenicity – Category 1A