1 Identification

- **Product identifier**
  - **Trade name**: Custom Standard
  - **Part number**: DK-100872
  - **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: (800) 424-9300
    Outside US: (703) 527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - **GHS label elements**
    - **GHS02 Flame**
      Flam. Liq. 2  H225 Highly flammable liquid and vapor.
    - **GHS08 Health hazard**
      Carc. 2  H351 Suspected of causing cancer.
    - **GHS07**
      Acute Tox. 4  H302 Harmful if swallowed.
      Eye Irrit. 2A  H319 Causes serious eye irritation.
      Skin Sens. 1  H317 May cause an allergic skin reaction.
  
- **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**:
  - acetonitrile
  - 2-(4-chloro-2-methylphenoxy)propionic acid

(Contd. on page 2)
2,4-D (ISO)

- **Hazard statements**
  - Highly flammable liquid and vapor.
  - Harmful if swallowed.
  - Causes serious eye irritation.
  - May cause an allergic skin reaction.
  - Suspected of causing 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.
  - Avoid breathing dust/fume/gas/mist/vapors/spray.
  - Wash thoroughly after handling.
  - Do not eat, drink or smoke when using this product.
  - Contaminated work clothing must not be allowed out of the workplace.
  - Wear protective gloves/protective clothing/eye protection/face protection.
  - If swallowed: Call a poison center/doctor if you feel unwell.
  - 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.
  - Specific treatment (see on this label).
  - Rinse mouth.
  - If skin irritation or rash occurs: Get medical advice/attention.
  - If eye irritation persists: Get medical advice/attention.
  - Wash contaminated clothing before reuse.
  - 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.

<table>
<thead>
<tr>
<th>Dangerous components:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>75-05-8 acetonitrile</td>
<td>98.9824%</td>
</tr>
<tr>
<td>94-75-7 2,4-D (ISO)</td>
<td>0.127%</td>
</tr>
<tr>
<td>93-76-5 2,4,5-T (ISO)</td>
<td>0.127%</td>
</tr>
</tbody>
</table>

4 First-aid measures

- **Description of first aid measures**
- **General information**: 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 and to be sure call for a 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. If symptoms persist, consult a doctor.
- **After swallowing**: Immediately call a doctor.

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.
- **For safety reasons unsuitable extinguishing agents**: Water with full jet
- **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 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.
46.0.5
See Section 13 for disposal information.

· Protective Action Criteria for Chemicals

- PAC-1:
  75-05-8 acetonitrile 13 ppm
  94-75-7 2,4-D (ISO) 30 mg/m³
  93-76-5 2,4,5-T (ISO) 30 mg/m³
  93-72-1 silvex (2,4,5-TP) 0.82 mg/m³

- PAC-2:
  75-05-8 acetonitrile 50 ppm
  94-75-7 2,4-D (ISO) 94 mg/m³
  93-76-5 2,4,5-T (ISO) 42 mg/m³
  93-72-1 silvex (2,4,5-TP) 9 mg/m³

- PAC-3:
  75-05-8 acetonitrile 150 ppm
  94-75-7 2,4-D (ISO) 500 mg/m³
  93-76-5 2,4,5-T (ISO) 250 mg/m³
  93-72-1 silvex (2,4,5-TP) 130 mg/m³

7 Handling and storage

· Handling:
  · Precautions for safe handling No special precautions are necessary if used correctly.
  · 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

· Components with limit values that require monitoring at the workplace:
  The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
  At this time, the remaining constituent has no known exposure limits.

75-05-8 acetonitrile

PEL Long-term value: 70 mg/m³, 40 ppm
REL Long-term value: 34 mg/m³, 20 ppm
Safety Data Sheet
acc. to OSHA HCS

Printing date 11/29/2017
Version Number 1
Reviewed on 11/29/2017

Trade name: Custom Standard

### TLV Long-term value: 34 mg/m³, 20 ppm
Skin

94-75-7 2,4-D (ISO)

<table>
<thead>
<tr>
<th>PEL</th>
<th>Long-term value: 10 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>REL</td>
<td>Long-term value: 10 mg/m³</td>
</tr>
<tr>
<td>TLV</td>
<td>Long-term value: 10* mg/m³</td>
</tr>
</tbody>
</table>

*as inhalable fraction

- **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.
    - Avoid contact with the eyes.
    - Avoid contact with the eyes and skin.
  - **Breathing equipment:** Not required.
  - **Protection of hands:**
    - **Protective gloves**
      - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
      - Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
      - Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
  - **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.
  - **Eye protection:**
    - **Tightly sealed goggles**

**9 Physical and chemical properties**

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
  - **Form:** Fluid
  - **Color:** Colorless
  - **Odor:** Aromatic
- **Odor threshold:** Not determined.
46.0.5

· pH-value: Not determined.

· Change in condition
  Melting point/Melting range: -46 °C (-50.8 °F)
  Boiling point/Boiling range: 81 °C (177.8 °F)

· Flash point: 2 °C (35.6 °F)

· Flammability (solid, gaseous): Not applicable.

· Ignition temperature: 525 °C (977 °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: 4.4 Vol %
  Upper: 16 Vol %

· Vapor pressure at 20 °C (68 °F): 0 hPa (0 mm Hg)

· Density at 20 °C (68 °F): 0.786 g/cm³ (6.55917 lbs/gal)
  Relative density: Not determined.
  Vapor density: Not determined.
  Evaporation rate: Not determined.

· Solubility in / Miscibility with Water: Not miscible or difficult to mix.

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

· Viscosity:
  Dynamic at 20 °C (68 °F): 0.39 mPas
  Kinematic: Not determined.

· Solvent content:
  VOC content: 0.00 %
  0.0 g/l / 0.00 lb/gl

· Solids content: 1.0 %

· 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:**

#### ATE (Acute Toxicity Estimate)

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>1,330 mg/kg (rat)</td>
<td>&gt;2,021 mg/kg (rabbit)</td>
<td>3,624 mg/L (mouse)</td>
</tr>
</tbody>
</table>

#### 75-05-8 acetonitrile

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>1,320 mg/kg (rat)</td>
<td>&gt;2,000 mg/kg (rabbit)</td>
<td>3,587 mg/L (mouse)</td>
</tr>
</tbody>
</table>

#### 94-74-6 MCPA (ISO)

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>700 mg/kg (rat)</td>
<td>&gt;2,000 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

#### 94-75-7 2,4-D (ISO)

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>375 mg/kg (rat)</td>
<td>1,500 mg/kg (rat)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,400 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

#### 93-65-2 2-(4-Chloro-2-methylphenoxy)propionic acid

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>650 mg/kg (rat)</td>
<td>900 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

#### 93-76-5 2,4,5-T (ISO)

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>300 mg/kg (rat)</td>
<td>1,535 mg/kg (rat)</td>
</tr>
</tbody>
</table>

#### 93-72-1 silvex (2,4,5-TP)

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>650 mg/kg (rat)</td>
</tr>
</tbody>
</table>

#### 94-81-5 MCPB (ISO)

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>680 mg/kg (rat)</td>
</tr>
</tbody>
</table>

- **Primary irritant effect:**
  - **on the skin:** No irritant effect.
  - **on the eye:** Irritating effect.
  - **Sensitization:** Sensitization possible through skin contact.

- **Additional toxicological information:**
  The product shows the following dangers according to internally approved calculation methods for preparations:
  - Harmful
  - Irritant

- **Carcinogenic categories**
  - **IARC (International Agency for Research on Cancer)**
    - 94-75-7 2,4-D (ISO) 2B
    - 93-76-5 2,4,5-T (ISO) 2B
  - **NTP (National Toxicology Program)**
    None of the ingredients is listed.
12 Ecological information

- **Toxicity**
  - No further relevant information available.

- **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.

- **Additional ecological information**:
  - General notes:
    - Water hazard class 2 (Self-assessment): 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 of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings**:

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

14 Transport information

- **UN-Number**
  - UN1648

- **DOT, IMDG, IATA**
  - Acetonitrile solution

- **UN proper shipping name**
  - DOT
  - IMDG, IATA
  - ACETONITRILE solution

- **Transport hazard class(es)**

- **DOT**

- **Class**
  - 3 Flammable liquids
### 15 Regulatory information

#### Safety, health and environmental regulations/legislation specific for the substance or mixture

<table>
<thead>
<tr>
<th>Section 355 (extremely hazardous substances):</th>
</tr>
</thead>
<tbody>
<tr>
<td>None of the ingredients is listed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section 313 (Specific toxic chemical listings):</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-05-8 acetonitrile</td>
</tr>
<tr>
<td>94-74-6 MCPA (ISO)</td>
</tr>
<tr>
<td>94-75-7 2,4-D (ISO)</td>
</tr>
<tr>
<td>93-65-2 2-(4-chloro-2-methylphenoxy)propionic acid</td>
</tr>
<tr>
<td>120-36-5 dichlorprop (ISO)</td>
</tr>
<tr>
<td>94-82-6 2,4-DB (ISO)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TSCA (Toxic Substances Control Act):</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-05-8 acetonitrile</td>
</tr>
</tbody>
</table>
Trade name: Custom Standard

94-74-6 MCPA (ISO)
94-75-7 2,4-D (ISO)
93-65-2 2-(4-chloro-2-methylphenoxy)propionic acid
120-36-5 dichlorprop (ISO)
93-76-5 2,4,5-T (ISO)

- TSCA new (21st Century Act) (Substances not listed)
  93-76-5 2,4,5-T (ISO)

- 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:
    94-82-6 2,4-DB (ISO)
  - Chemicals known to cause developmental toxicity:
    None of the ingredients is listed.

- Carcinogenic categories
  - EPA (Environmental Protection Agency)
    75-05-8 acetonitrile CBD, D
    93-72-1 silvex (2,4,5-TP) D
  - TLV (Threshold Limit Value established by ACGIH)
    75-05-8 acetonitrile A4
    94-75-7 2,4-D (ISO) A4
    93-76-5 2,4,5-T (ISO) A4
  - 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:
  acetonitrile
  2-(4-chloro-2-methylphenoxy)propionic acid
  2,4-D (ISO)

- Hazard statements
  Highly flammable liquid and vapor.
  Harmful if swallowed.
  Causes serious eye irritation.
  May cause an allergic skin reaction.
  Suspected of causing cancer.
Trade name: Custom Standard

· 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.
  Avoid breathing dust/fume/gas/mist/vapors/spray
  Wash thoroughly after handling.
  Do not eat, drink or smoke when using this product.
  Contaminated work clothing must not be allowed out of the workplace.
  Wear protective gloves/protective clothing/eye protection/face protection.
  If swallowed: Call a poison center/doctor if you feel unwell.
  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.
  Specific treatment (see on this label).
  Rinse mouth.
  If skin irritation or rash occurs: Get medical advice/attention.
  If eye irritation persists: Get medical advice/attention.
  Wash contaminated clothing before reuse.
  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.

· 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 11/29/2017 / -

· 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
  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
<table>
<thead>
<tr>
<th>Classification</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 4</td>
<td>Acute toxicity – Category 4</td>
</tr>
<tr>
<td>Eye Irrit. 2A</td>
<td>Serious eye damage/eye irritation – Category 2A</td>
</tr>
<tr>
<td>Skin Sens. 1</td>
<td>Skin sensitisation – Category 1</td>
</tr>
<tr>
<td>Carc. 2</td>
<td>Carcinogenicity – Category 2</td>
</tr>
</tbody>
</table>