1. Identification of Substance:

- **Other means of identification:** Catalog Number: WL2000
  Components: H-Lyse Buffer (10X) contains Ammonium chloride, Fixative (10X) contains Formaldehyde and Methanol, Wash Buffer (10X)
- **GHS product identifier:** Mouse Erythrocyte Lysing Kit
- **Application of the substance / the preparation:** For Research Use Only
- **Manufacturer/Supplier:**
  Bio-Techne - R&D Systems Inc.
  614 McKinley Place N.E.
  Minneapolis, MN 55413 USA
  1-800-343-7475
- **For product related questions call:** 1-800-343-7475. In Europe call: +44(0)1235-529449.
- **Emergency information:** In case of a chemical emergency, spill, fire, or exposure, call R&D Systems at (612) 379-2956 or (800)-343-7475. In Europe call +44(0)1235-529449

2. Hazard Identification:

  Acute Toxicity 4, Oral
  Eye Irritation 2A
- **Signal Word:** WARNING
- **Hazard Statements:** H302: Harmful if swallowed. H319: Causes serious eye irritation.
- **Precautionary Statements:** P264: Wash hands thoroughly after handling. P270: do not eat, drink or smoke when using this product. P280: Wear eye protection/face protection.
- **Responses:**
  IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
  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.
- **Classification according to EU Directives 67/548/EEC or 1999/45/EC:** Xn: Harmful. Xi: Irritant.
- **R-phrases:** R22: Harmful if swallowed. R36: Irritating to eyes.
- **S-phrases:** S22: Do not breathe dust.
- **Special Hazards:** none.

3. Information on Ingredients:

- **Description:** Ammonium chloride
- **Synonyms:** Sal ammoniac
- **Formula:** NH₄Cl
- **Contains** | CAS No.  | EC-No.  | Index-No.  | Content
---|---|---|---|---
Ammonium chloride | 12125-02-9 | 235-186-4 | 017-014-00-8 | 5 – 10%

4. First Aid Measures:

- **After Swallowing:** Rinse mouth with water. Consult a physician.
- **After Skin contact:** Wash with plenty of soap and water or shower. Remove contaminated clothing. Consult a physician.
- **After Inhalation:** Move person into fresh air. Consult a physician.
- **After Eye Contact:** Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Product Name: Mouse Erythrocyte Lysing Kit

- **Most important symptoms and effects, both acute and delayed:** Sore throat. Skin redness, eye redness and pain. Nausea and vomiting.
- **Indication of any immediate medical attention and special treatment needed:** no data available

### 5. Fire Fighting Measures:

- **Suitable extinguishing agents:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- **Special hazards arising from the substance or mixture:** Gives off irritating or toxic fumes (or gases) in a fire.
- **Protective equipment:** Wear self contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
- **Further information:** Not combustible. Decomposes upon heating producing toxic and irritating fumes (nitrogen oxides, ammonia and hydrogen chloride).

### 6. Accidental Release Measures:

- **Person-related safety precautions:** Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate all personnel to safe areas. Avoid breathing dust.
- **Environmental protection:** Prevent further leakage or spillage is safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
- **Methods and materials for containment and cleaning up:** Pick up and arrange disposal without creating dust. Keep in suitable closed containers for disposal. For disposal see section 13.
- **Additional information:** None

### 7. Handling and Storage:

- **Precautions for safe handling:** Avoid contact with skin and eyes. Avoid formation and inhalation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.
- **Conditions for safe storage, including incompatibilities:** Keep container tightly closed in a dry and well-ventilated place.

### 8. Exposure Controls and Personal Protection:

- **Control parameters:**
  - **Component:** Ammonium chloride (CAS No. 12125-02-9);
  - **OSHA Exposure Limits:** TWA – 10 mg/m³ (fumes).
  - **UK EH40 WEL – Workplace Exposure Limits:** TWA - 10mg/m³ (fumes), STEL - 20 mg/m³ (fumes).

- **Appropriate engineering controls:** Handle in accordance with good industrial hygiene and safety practice.
- **Individual Protection Measures:**
  - **Eye/face protection:** Face Shield and Safety Glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).
  - **Skin/hand protection:** Handle with protective gloves, plastic or rubber. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
  - **Body protection:** Complete Suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
  - **Other skin protection:** Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved.
  - **Respiratory protection:** In case of inadequate ventilation, use a suitable respirator. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate
9. Physical and Chemical Properties:

- **Appearance:** Provided in a liquid solution
- **Odor:** Odorless
- **Odor threshold:** Not available
- **pH:** Not available
- **Melting point/freezing point:** Not available
- **Boiling point/Boiling range:** Not available
- **Flash point:** Not available
- **Evaporation rate:** Not available
- **Flammability (solid, gas):** Not available
- **Upper/lower flammability or explosive limits:** Not available
- **Vapor density:** Not available
- **Vapor pressure:** Not available
- **Relative density:** Not available
- **Solubility in/Miscibility with Water:** Soluble
- **Partition coefficient: n-octanol/water:** Not available
- **Auto igniting:** Not available
- **Decomposition temperature:** Not available
- **Viscosity:** Not available

10. Stability and Reactivity:

- **Reactivity:** No data available
- **Chemical Stability:** Non combustible solid
- **Possibility of hazardous reactions:** No data available
- **Conditions to avoid:** Exposure to high temperatures (i.e. fires). It will corrode most metals under these conditions.
- **Incompatible materials:** Alkalis and their carbonates, lead and silver salts, strong oxidizers, ammonium nitrate, potassium chlorate, bromine trifluoride.
- **Hazardous decomposition products:** Gives off irritating or toxic fumes (or gases) in a fire.

11. Toxicological Information:

- **Acute toxicity:** LD50 Oral – rat – 1,650 mg/kg
- **Skin corrosion/irritation:** Skin – rabbit – No skin irritation
- **Serious eye damage/irritation:** Eyes – rabbit – Eye irritation
- **Respiratory or skin sensitization:** No data available
- **Germ cell mutagenicity:** no data available
- **Carcinogenicity:** IARC: Ammonium chloride at a concentration ≥ 0.1% is not identified as probable, possible or confirmed human carcinogen by IARC.
- **Reproductive toxicity:** no data available
- **Specific target organ toxicity (STOT) -single exposure:** no data available
- **Specific target organ toxicity (STOT) -repeated exposure:** no data available
- **Aspiration hazard:** no data available
- **Information on likely routes of exposure:** oral, dermal, inhalation, ingestion
- **Symptoms related to the physical, chemical and toxicological characteristics:**
  - **Inhalation:** May cause respiratory tract irritation, cough or difficulty breathing.
  - **Ingestion:** Harmful is swallowed.
  - **Skin contact:** May cause skin irritation.
  - **Eye contact:** Causes serious eye irritation.
- **Delayed and immediate effects and also chronic effects from short and long term exposure:** no data available

12. Ecological Information:
Product Name: Mouse Erythrocyte Lysing Kit

13. Disposal Considerations:

- **Disposal methods**: Dispose of waste in accordance to applicable national, regional, or local regulations. Contact a licensed professional waste disposal service to dispose of this material. Offer surplus and non-recyclable solutions to a licensed disposal company.
- **Contaminated packaging**: Dispose in the same manner as unused product.

14. Transportation Information:

**ADR/RID ADN/ADNR IMDG IATA/DOT**

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15. Regulations:

- **US Federal and State Regulations**
  - CERCLA/SARA 302: not listed.
  - CERCLA/SARA 304: not listed.
  - SARA 313: not listed.
  - CERCLA RQ: 5,000 lbs.
  - TSCA (Toxic Substances Control Act): Ammonium chloride (CAS # 12125-02-9) is listed.
  - California Proposition 65: not listed.

16. Other Information:

- **Notice to reader**: To the best of our knowledge, the information contained herein is accurate. However, neither the above-named
2. Hazard Identification:

  - Carcinogen, 1B
  - Mutagen, 2
  - Acute Toxicity, Oral 3
  - Acute Toxicity, Inhalation 3
  - Acute Toxicity, Dermal 3
  - Skin Sensitization, 1
  - Signal Word: DANGER


- Responses:
  - IF SWALLOWED: Immediately call a Poison Control Center or physician. See specific treatment in this MSDS. Rinse mouth. Do NOT induce vomiting. IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/physician if you feel unwell. See specific treatment in this MSDS. Remove/take off immediately all contaminated clothing. Wash contaminated clothing before reuse. IF SKIN IRRITATION or rash occurs: Get medical advice/attention.
  - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately Call a POISON CENTER or doctor/physician. See specific treatment in this MSDS.
  - 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.


- R-phrases: R20/21/22: Harmful by inhalation, in contact with skin and if swallowed. R36/37/38: Irritating to eyes, respiratory system and skin. R68/20/21/22: Harmful: possible risk of irreversible effect through inhalation, in contact with skin and if swallowed.

- S-phrases: S36/37/39: Wear suitable protective clothing, gloves, and eye/face protection. S45: In case of accident or if you feel unwell, seek medical advice immediately (show label if possible). S51: Use only in well-ventilated areas.

- Special Hazards: none.

3. Information on Ingredients:

- Description: Formaldehyde
- Synonyms: Formalin
- Formula: CH2O
Product Name: Mouse Erythrocyte Lysing Kit

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<td>67-56-1</td>
<td>200-659-6</td>
<td>NA</td>
<td>3 - 10%</td>
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5. Fire Fighting Measures:

- Suitable extinguishing agents: Dry chemical, carbon dioxide, water spray or alcohol-resistant foam.
- Special hazards arising from the substance or mixture: Emits toxic fumes under fire conditions. Carbon oxides.
- Protective equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
- Further information: Use water spray to cool unopened containers.

6. Accidental Release Measures:

- Personal precautions, protective equipment and emergency procedures: Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate all personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
- Environmental precautions: Prevent further leakage or spillage is safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
- Methods and materials for containment and cleaning up: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.

7. Handling and Storage:

- Precautions for safe handling: Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition – No Smoking. Take measures to prevent the build up of electrostatic charge.
- Conditions for safe storage, including incompatibilities: Store locked up. Store in a cool place. Keep container tightly closed in a dry and well ventilated place.

8. Exposure Controls and Personal Protection:

- Control parameters:
  - Component: Formaldehyde: UK EH40 WEL Workplace Exposure Limits: STEL 2 ppm, 2.5 mg/m³. TWA 2 ppm, 2.5 mg/m³.
9. Physical and Chemical Properties:

- **Appearance**: Colorless Liquid.
- **Odor**: Pungent
- **Odor threshold**: Not available
- **pH**: Not available
- **Melting point/freezing point**: Not available
- **Boiling point/Boiling range**: 189°C
- **Flash point**: Not available
- **Evaporation rate**: Not available
- **Flammability (solid, gas)**: Not available
- **Upper/lower flammability or explosive limits**: Not available
- **Vapor density**: Not available
- **Vapor pressure**: Not available
- **Relative density**: Not available
- **Solubility in/Miscibility with Water**: Soluble
- **Partition coefficient**: Not available
- **Auto igniting**: Not available
- **Decomposition temperature**: Not available
- **Viscosity**: Not available

10. Stability and Reactivity:

- **Reactivity**: Strong oxidizers, alkalis and acids, phenols, urea, strong oxidizers.
- **Chemical Stability**: Contains the following stabilizer: Methanol (>3 - <10%).
- **Possibility of hazardous reactions**: No data available.
- **Conditions to avoid**: Heat, flames.
- **Incompatible materials**: Strong oxidizers, alkalis and acids, phenols, urea, strong oxidizers.
- **Hazardous decomposition products**: No data available.

11. Toxicological Information:

- **Acute toxicity**: Formaldehyde: rat oral – LD50 = 800 mg/kg; mouse oral – LD50 = 42 mg/kg; rat inhalation – LCLo = 250 mg/kg; mouse inhalation – LCLo = 900 mg/kg. Methanol: rat oral – LD50 = 6200 mg/kg; mouse oral – LD50 = 400 mg/kg
- **Skin corrosion/irritation**: No data available.
Product Name: Mouse Erythrocyte Lysing Kit

Formaldehyde: no data available Methanol: rabbit dermal – 16 g/kg.

- **Serious eye damage/irritation:** no data available.
- **Respiratory or skin sensitization:** Formaldehyde is a skin irritant and a sensitizer. Contact will cause white discoloration, smarting, drying, cracking, and scaling.
- **Germ cell mutagenicity:** no data available.
- **Carcinogenicity:** Formaldehyde has the potential to cause cancer in humans (IARC). Repeated and prolonged exposure increases the risk. Methanol – no data available.
- **Reproductive toxicity:** no data available.
- **Specific target organ toxicity (STOT) - single exposure:** Formaldehyde - no data available. Methanol – acute intoxication causes CNS depression as observed by narcosis, in coordination, lethargy, drowsiness and prostration. A latent period follows the initial intoxication in which formic acid accumulates in the body causing metabolic acidosis.
- **Specific target organ toxicity (STOT) - repeated exposure:** Formaldehyde – prolonged exposure may cause respiratory impairment. Methanol – no data available.
- **Aspiration hazard:** No data available
- **Information on likely routes of exposure:** Routes of entry anticipated; oral, dermal, inhalation.
- **Symptoms related to the physical, chemical and toxicological characteristics:**
  - **Inhalation:** Formaldehyde – irritating to respiratory tract and eyes. Methanol – causes conjunctivitis, headache, giddiness, insomnia, gastric disturbances, and bilateral blindness.
  - **Ingestion:** Formaldehyde – causes severe irritation and inflammation of the mouth, throat, and stomach. Methanol – Causes acute intoxication followed by a latent period of metabolic acidosis and severe abdominal, leg and back pain, followed by blindness.
  - **Skin contact:** Formaldehyde – severe skin irritant and skin sensitizer. Methanol – no data available.
  - **Eye contact:** Formaldehyde – causes injuries ranging from transient discomfort to severe, permanent corneal clouding and loss of vision. Methanol - Causes serious eye irritation which can lead to blindness.
- **Delayed and immediate effects and also chronic effects from short and long term exposure:** Formaldehyde – the perception of formaldehyde by odor and eye irritation becomes less sensitive with time as one adapts. This desensitization can lead to overexposure. Methanol – Acute intoxication is manifested by signs of narcosis. This is followed by formic acid accumulation in the body causing metabolic acidosis. Severe abdominal pain and severe abdominal, leg and back pain, followed by blindness.

12. Ecological Information:

- **Ecotoxicity:** Formaldehyde - No data available. Methanol – low acute toxicity to aquatic organisms. LD50 > 100 mg/L
- **Biodegradability:** Formaldehyde - No data available. Methanol – reacts with nitrogen dioxide in polluted atmospheres to product methyl nitrite. It is a volatile organic substance.
- **Bioaccumulative potential:** Formaldehyde - No data available. Methanol -
- **Mobility in soil:** Formaldehyde - No data available. Methanol – no data available.
  - **Other adverse effects:** Formaldehyde - No data available. Methanol – As a volatile organic compound, it can contribute to the formation of photochemical smog in the presences of other volatile organic compounds.

13. Disposal Considerations:

- **Disposal methods:** Dispose of waste in accordance to applicable national, regional, or local regulations. Contact a licensed professional waste disposal service to dispose of this material.
  - **Contaminated packaging:** Dispose in the same manner as unused product.

14. Transportation Information:
Safety Datasheet

Product Name: Mouse Erythrocyte Lysing Kit

Reviewed on: 28 August 2018

ADR/RID ADN/ADNR IMDG IATA/DOT

ADR/DOT: UN Number: UN 3334
RID Proper Shipping Name: Aviation regulated liquid, n.o.s. (Formaldehyde solution <25%)
Hazard class: 9
Packing group: III

IATA: UN Number: UN 3334
Proper Shipping Name: Aviation regulated liquid, n.o.s. (Formaldehyde solution <25%)
Hazard class: 9
Packing group: III

IMDG: UN Number: UN 3334
Proper Shipping Name: Aviation regulated liquid, n.o.s. (Formaldehyde solution <25%)
Hazard class: 3
Packing group: III
Marine Pollutant: No

15. Regulations:

- US Federal and State Regulations
  - CERCLA/SARA 302: Formaldehyde is listed. Methanol is not listed.
  - CERCLA/SARA 304: Formaldehyde is listed. Methanol is not listed.
  - SARA 313: Formaldehyde is listed. Methanol is listed.
  - TSCA (Toxic Substances Control Act): Formaldehyde is listed. Methanol is listed.

- California Proposition 65: \(\Delta\) WARNING: This product can expose you to chemicals including formaldehyde, which is known to the State of California to cause cancer, and methanol, which is known to the State of California to cause reproductive toxicity with developmental effects. For more information, go to www.P65Warnings.ca.gov.

16. Other Information:

- Notice to reader: To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.