

1. Identification

| | | |
|---|---|--|
| Product identifier | 10X RBC Lysis Buffer | |
| Other means of identification | | |
| Product code | DG-RBC | |
| Recommended use | DNA sample preparation for sequencing | |
| Recommended restrictions | Use in accordance with supplier's recommendations. | |
| Manufacturer/Importer/Supplier/Distributor information | | |
| Company Name | Dovetail Genomics, LLC | |
| Address | 2161 Delaware Ave Santa Cruz, CA 95060 United States of America | |
| Telephone | (831) 713-4465 | |
| Website | dovetailgenomics.com | |
| Emergency phone number | +1 866 519 4752 (access code: 334943) | |

2. Hazard(s) identification

| | | |
|-----------------------------|-----------------------------------|-------------|
| Physical hazards | Not classified. | |
| Health hazards | Serious eye damage/eye irritation | Category 2A |
| OSHA defined hazards | Not classified. | |
| Label elements | | |



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| Signal word | Warning | |
| Hazard statement | Causes serious eye irritation. | |
| Precautionary statement | | |
| Prevention | Wash thoroughly after handling. Wear eye protection/face protection. | |
| Response | 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. | |
| Storage | Not assigned. | |
| Disposal | Not assigned. | |
| Hazard(s) not otherwise classified (HNOC) | None known. | |
| Supplemental information | None. | |

3. Composition/information on ingredients

Mixtures

| Chemical name | CAS number | % |
|-------------------|------------|--------|
| Ammonium Chloride | 12125-02-9 | 7 - 13 |

Composition comments All concentrations are in percent by weight unless otherwise indicated.

4. First-aid measures

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| Inhalation | Move to fresh air. Call a physician if symptoms develop or persist. |
| Skin contact | Wash off with soap and water. Get medical attention if irritation develops and persists. |

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| Eye contact | Immediately flush eyes with plenty of 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. |
| Ingestion | Rinse mouth. Get medical attention if symptoms occur. |
| Most important symptoms/effects, acute and delayed | Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. |
| Indication of immediate medical attention and special treatment needed | Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed. |
| General information | Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. |

5. Fire-fighting measures

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| Suitable extinguishing media | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂). |
| Unsuitable extinguishing media | Do not use water jet as an extinguisher, as this will spread the fire. |
| Specific hazards arising from the chemical | During fire, gases hazardous to health may be formed. |
| Special protective equipment and precautions for firefighters | Self-contained breathing apparatus and full protective clothing must be worn in case of fire. |
| Fire fighting equipment/instructions | Move containers from fire area if you can do so without risk. |
| Specific methods | Use standard firefighting procedures and consider the hazards of other involved materials. |
| General fire hazards | No unusual fire or explosion hazards noted. |

6. Accidental release measures

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| Personal precautions, protective equipment and emergency procedures | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. |
| Methods and materials for containment and cleaning up | Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. |
| Environmental precautions | Avoid discharge into drains, water courses or onto the ground. |

7. Handling and storage

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| Precautions for safe handling | Avoid contact with eyes. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. |
| Conditions for safe storage, including any incompatibilities | Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Storage temperature: between 2 and 8°C. |

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-3 (29 CFR 1910.1000)

| Components | Type | Value | Form |
|------------------------------------|------|----------------------|----------------------|
| Ammonium Chloride (CAS 12125-02-9) | TWA | 5 mg/m ³ | Respirable fraction. |
| | | 15 mg/m ³ | Total dust. |
| | | 50 mppcf | Total dust. |
| | | 15 mppcf | Respirable fraction. |

US. ACGIH Threshold Limit Values

| Components | Type | Value | Form |
|------------------------------------|------|----------------------|-------|
| Ammonium Chloride (CAS 12125-02-9) | STEL | 20 mg/m ³ | Fume. |

US. ACGIH Threshold Limit Values

| Components | Type | Value | Form |
|------------|------|----------|-------|
| | TWA | 10 mg/m3 | Fume. |

US. NIOSH: Pocket Guide to Chemical Hazards

| Components | Type | Value | Form |
|------------------------------------|------|----------|-------|
| Ammonium Chloride (CAS 12125-02-9) | STEL | 20 mg/m3 | Fume. |
| | TWA | 10 mg/m3 | Fume. |

| | |
|--|--|
| Biological limit values | No biological exposure limits noted for the ingredient(s). |
| Appropriate engineering controls | Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. |
| Individual protection measures, such as personal protective equipment | |
| Eye/face protection | Wear safety glasses with side shields (or goggles). |
| Skin protection | |
| Hand protection | Wear appropriate chemical resistant gloves. |
| Skin protection | |
| Other | Wear appropriate chemical resistant clothing. |
| Respiratory protection | In case of insufficient ventilation, wear suitable respiratory equipment. |
| Thermal hazards | Wear appropriate thermal protective clothing, when necessary. |
| General hygiene considerations | Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. |

9. Physical and chemical properties**Appearance**

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|---|-----------------|
| Physical state | Liquid. |
| Form | Clear liquid. |
| Color | Not available. |
| Odor | Not available. |
| Odor threshold | Not available. |
| pH | Not available. |
| Melting point/freezing point | Not available. |
| Initial boiling point and boiling range | Not available. |
| Flash point | Does not flash. |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Not applicable. |
| Upper/lower flammability or explosive limits | |
| Flammability limit - lower (%) | Not available. |
| Flammability limit - upper (%) | Not available. |
| Vapor pressure | Not available. |
| Vapor density | Not available. |
| Relative density | Not available. |
| Solubility(ies) | |
| Solubility (water) | Not available. |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not available. |

| | |
|----------------------------------|----------------|
| Decomposition temperature | Not available. |
| Viscosity | Not available. |
| Other information | |
| Explosive properties | Not explosive. |
| Oxidizing properties | Not oxidizing. |

10. Stability and reactivity

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|---|---|
| Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| Chemical stability | Material is stable under normal conditions. |
| Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. |
| Conditions to avoid | Contact with incompatible materials. |
| Incompatible materials | Strong oxidizing agents. |
| Hazardous decomposition products | Nitrogen compounds. Chlorine compounds. |

11. Toxicological information

Information on likely routes of exposure

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|---------------------|---|
| Inhalation | Prolonged inhalation may be harmful. |
| Skin contact | Prolonged skin contact may cause temporary irritation. |
| Eye contact | Causes serious eye irritation. |
| Ingestion | May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure. |

Symptoms related to the physical, chemical and toxicological characteristics Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects

Acute toxicity Not expected to be acutely toxic.

| Components | Species | Test Results |
|------------------------------------|---------|--------------------------|
| Ammonium Chloride (CAS 12125-02-9) | | |
| Acute | | |
| Dermal | | |
| LD50 | Rat | > 2000 mg/kg, 24 Hours |
| Oral | | |
| LD50 | Rat | 1650 mg/kg 1410 mg/kg |

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

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|----------------------------------|---|
| Respiratory sensitization | Not a respiratory sensitizer. |
| Skin sensitization | This product is not expected to cause skin sensitization. |

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

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|---|--------------------------------------|
| Specific target organ toxicity - repeated exposure | Not classified. |
| Aspiration hazard | Not an aspiration hazard. |
| Chronic effects | Prolonged inhalation may be harmful. |
| Further information | None known. |

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

| Components | Species | Test Results | |
|------------------------------------|---------|---------------------|--------------------|
| Ammonium Chloride (CAS 12125-02-9) | | | |
| Aquatic | | | |
| Fish | LC50 | Cyprinus carpio | 209 mg/l, 96 hours |
| | NOEC | Pimephales promelas | 11.8 mg/l, 28 days |

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|--------------------------------------|---|
| Persistence and degradability | There are no data on the degradability of this product. |
| Bioaccumulative potential | No data available for this product. |
| Mobility in soil | No data available. |
| Other adverse effects | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |

13. Disposal considerations

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|--|--|
| Disposal instructions | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Local disposal regulations | Dispose in accordance with all applicable regulations. |
| Hazardous waste code | The waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| Waste from residues / unused products | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner. |
| Contaminated packaging | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. |

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Ammonium Chloride (CAS 12125-02-9) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories Serious eye damage or eye irritation

SARA 313 (TRI reporting)

| Chemical name | CAS number | % by wt. |
|----------------------|-------------------|-----------------|
| Ammonium Chloride | 12125-02-9 | 7 - 13 |

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Ammonium Chloride (CAS 12125-02-9)

US. New Jersey Worker and Community Right-to-Know Act

Ammonium Chloride (CAS 12125-02-9)

US. Pennsylvania Worker and Community Right-to-Know Law

Ammonium Chloride (CAS 12125-02-9)

US. Rhode Island RTK

Ammonium Chloride (CAS 12125-02-9)

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 2016 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|--|-------------------------------|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 16-February-2018

Revision date 27-March-2018

Version # 02

HMIS® ratings Health: 2
Flammability: 0
Physical hazard: 0

List of abbreviations

ACGIH: American Conference of Industrial Hygienists.
IATA: International Air Transport Association.
IBC: Intermediate Bulk Container.
IMDG: International Maritime Dangerous Goods.
LC50: Lethal Concentration, 50%.
LD50: Lethal Dose, 50%.
MARPOL: International Convention for the Prevention of Pollution from Ships.
NOEC: No observed effect concentration.
OEL: Occupational Exposure Limit.
STEL: Short-Term Exposure Limit.
TWA: Time Weighted Average.
CAS: Chemical Abstracts Service.

Disclaimer

Dovetail Genomics, LLC cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.