SAFETY DATA SHEET

1. Identification

Product identifier: PAXgene® Blood RNA Tube

Other means of identification:
- SDS number: VS60342, 762115, 762125, 762165, 769979, 769999
- Product code: Blood Collection Tube.

Recommended use: None known.

Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information

Supplier
- Company name: Becton, Dickinson and Company
- Address: Belliver Industrial Estate, Belliver Way, Roborough, Plymouth, PL6 7BP, United Kingdom
- Telephone: +44 (0) 1752 237280
- Contact person: Not available.
- e-mail: help.plymouth@europe.bd.com
- Emergency telephone number: +44 (0) 1752 701281

1.4. Emergency telephone number

2. Hazard(s) identification

Physical hazards: Not classified.

Health hazards:
- Skin corrosion/irritation: Category 2
- Serious eye damage/eye irritation: Category 1
- Sensitization, skin: Category 1

Environmental hazards:
- Hazardous to the aquatic environment, acute hazard: Category 2
- Hazardous to the aquatic environment, long-term hazard: Category 2

OSHA defined hazards: Not classified.

Label elements

Signal word: Danger

Hazard statement: Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention: Wear protective gloves/eye protection/face protection. Contaminated work clothing must not be allowed out of the workplace. Wash thoroughly after handling. Avoid release to the environment.

Response: If on skin: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Collect spillage.

Storage: Store away from incompatible materials.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC): None known.
3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetradecyltrimethylammonium oxalate</td>
<td>-</td>
<td>&lt; 10</td>
</tr>
<tr>
<td>(+)-Tartaric acid</td>
<td>87-69-4</td>
<td>2-4</td>
</tr>
</tbody>
</table>

Composition comments
All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation
Move to fresh air. For breathing difficulties, oxygen may be necessary. Call a physician if symptoms develop or persist.

Skin contact
Remove contaminated clothing. Immediately flush skin with plenty of water. In case of rashes, wounds or other skin disorders: Seek medical attention and bring along these instructions. Wash off with soap and plenty of water. Wash clothing separately before reuse.

Eye contact
Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids wide apart. Get medical attention immediately. Continue to rinse.

Ingestion
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin contact: May cause redness and pain. Sensitization. Most important symptoms/effects, acute and delayed
Provide general supportive measures and treat symptomatically.

Indication of immediate medical attention and special treatment needed
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media
Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media
Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical
By heating and fire, toxic vapors/gases may be formed.

Special protective equipment and precautions for firefighters
Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards
The product itself does not burn.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Avoid contact with skin and eyes. See Section 8 of the SDS for Personal Protective Equipment. See Section 8 of the SDS for Personal Protective Equipment.

Methods and materials for containment and cleaning up
Wipe up spilled material and place in a suitable container for disposal. Following product recovery, flush area with water. For waste disposal, see Section 13 of the SDS.

Environmental precautions
Do not discharge into drains, water courses or onto the ground. Environmental manager must be informed of all releases.

7. Handling and storage

Precautions for safe handling
Avoid contact with skin and eyes. Persons susceptible for allergic reactions should not handle this product. Wear appropriate personal protective equipment. Wash thoroughly after handling. Avoid release to the environment. Do not empty into drains. Observe good laboratory hygiene practices.

Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well-ventilated place. Store away from incompatible materials.
8. Exposure controls/personal protection

Occupational exposure limits  No exposure limits noted for ingredient(s).

Biological limit values  No biological exposure limits noted for the ingredient(s).

Exposure guidelines  No exposure limits noted for ingredient(s).

Appropriate engineering controls  No particular ventilation requirements. Provide easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment

Eye/face protection  Wear approved safety goggles.

Skin protection

Hand protection  Wear protective gloves. Nitrile gloves are recommended. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

Other  Wear appropriate clothing to prevent repeated or prolonged skin contact.

Respiratory protection  Under normal conditions, respirator is not normally required.

Thermal hazards  None.

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

Physical state  Liquid.

Form  Liquid.

Color  Clear.

Odor  Characteristic.

Odor threshold  Not available.

pH  3.7 (20°C)

Melting point/freezing point  Not available.

Initial boiling point and boiling range  Not available.

Flash point  Not applicable.

Evaporation rate  Not available.

Flammability (solid, gas)  Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)

Flammability limit - upper (%)

Vapor pressure  23 hPa (20°C)

Vapor density  Not available.

Relative density  Not available.

Solubility(ies)

Solubility (water)  Completely miscible with water.

Partition coefficient (n-octanol/water)  No data available.

Auto-ignition temperature  Not applicable.

Decomposition temperature  Not available.

Viscosity  Not available.

Other information

Explosive properties  Not explosive.

Oxidizing properties  Not oxidizing.
10. Stability and reactivity

Reactivity
The product is stable and non reactive under normal conditions of use, storage and transport.

Chemical stability
Stable at normal conditions.

Possibility of hazardous reactions
Will not occur.

Conditions to avoid
Contact with incompatible materials.

Incompatible materials

Hazardous decomposition products
Carbon oxides. Ammonia.

11. Toxicological information

Information on likely routes of exposure

Inhalation
In high concentrations, vapors may be irritating to the respiratory system.

Skin contact
Causes skin irritation.

Eye contact
Causes serious eye damage.

Ingestion
May cause discomfort if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin contact: May cause redness and pain. Sensitization.

Information on toxicological effects

Acute toxicity

Components | Species | Test Results
--- | --- | ---
Tetradecyltrimethylammonium oxalate (CAS -) |  |  |
Acute
Inhalation
LD50
Rat
390 mg/kg

Skin corrosion/irritation
Causes skin irritation.

Serious eye damage/eye irritation
Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization
Based on available data, the classification criteria are not met.

Skin sensitization
May cause an allergic skin reaction.

Germ cell mutagenicity
Based on available data, the classification criteria are not met.

Carcinogenicity
Based on available data, the classification criteria are not met.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

Reproductive toxicity
Based on available data, the classification criteria are not met.

Specific target organ toxicity - single exposure
Based on available data, the classification criteria are not met.

Specific target organ toxicity - repeated exposure
Based on available data, the classification criteria are not met.

Aspiration hazard
Based on available data, the classification criteria are not met.

Chronic effects
No other specific chronic health impact noted.

Further information
No data available.

12. Ecological information

Ecotoxicity
Toxic to aquatic life with long lasting effects.

Components | Species | Test Results
--- | --- | ---
Tetradecyltrimethylammonium oxalate |  |  |
Aquatic
Crustacea
LC50
Amphipod (Echinogammarus tibaldi)
17 - 23 mg/l, 24 hours

Persistence and degradability
No data available.
Bioaccumulative potential
This product is water soluble and may disperse in soil.

Mobility in general
The product is water soluble and may spread in water systems.

Other adverse effects
No data available.

13. Disposal considerations

Disposal instructions
Dispose in accordance with all applicable regulations. Do not discharge into drains, water courses or onto the ground.

Hazardous waste code
Not regulated.

Waste from residues / unused products
Dispose of waste and residues in accordance with local authority requirements.

Contaminated packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT
UN number UN3082
UN proper shipping name Environmentally hazardous substances, liquid, n.o.s. (Tetradecyltrimethylammonium oxalate)
Transport hazard class(es)
Class 9
Subsidiary risk -
Label(s) 9
Packing group III
Environmental hazards
Marine pollutant Yes
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Special provisions 8, 146, 335, IB3, T4, TP1, TP29
Packaging exceptions 155
Packaging non bulk 203
Packaging bulk 241

IATA
UN number UN3082
UN proper shipping name Environmentally hazardous substance, liquid, n.o.s. (Tetradecyltrimethylammonium oxalate)
Transport hazard class(es)
Class 9
Subsidiary risk -
Label(s) 9
Packing group III
Environmental hazards Yes
ERG Code 9L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG
UN number UN3082
UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Tetradecyltrimethylammonium oxalate)
Transport hazard class(es)
Class 9
Subsidiary risk -
Label(s) 9
Packing group III
Environmental hazards
Marine pollutant Yes
EmS F-A, S-F
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
This substance/mixture is not intended to be transported in bulk.

15. Regulatory information

US federal regulations
This product is hazardous according to OSHA 29 CFR 1910.1200.
**TSCA Section 12(b) Export Notification** (40 CFR 707, Subpt. D)  
Not regulated.

**OSHA Specifically Regulated Substances** (29 CFR 1910.1001-1050)  
Not listed.

**CERCLA Hazardous Substance List** (40 CFR 302.4)  
Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

<table>
<thead>
<tr>
<th>Hazard categories</th>
<th>Immediate Hazard - Yes</th>
<th>Delayed Hazard - No</th>
<th>Fire Hazard - No</th>
<th>Pressure Hazard - No</th>
<th>Reactivity Hazard - No</th>
</tr>
</thead>
</table>

**SARA 302 Extremely hazardous substance**  
Not listed.

**SARA 311/312 Hazardous chemical**  
Yes

**SARA 313 (TRI reporting)**  
Not regulated.

**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**  
  Not regulated.
- **US. New Jersey Worker and Community Right-to-Know Act**  
  Not listed.
- **US. Pennsylvania Worker and Community Right-to-Know Law**  
  Not listed.
- **US. Rhode Island RTK**  
  Not regulated.
- **US. California Proposition 65**  
  Not Listed.

**International Inventories**

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>No</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>No</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>No</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>No</td>
</tr>
</tbody>
</table>

*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-April-2015
Revision date 16-April-2015
Version # 02
Further information HMIS® is a registered trade and service mark of the NPCA.
HMIS® ratings Health: 3  
Flammability: 0  
Physical hazard: 0

NFPA ratings

References ACGIH: American Conference of Governmental and Industrial Hygienists.
EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

Disclaimer To the best of our knowledge, the information contained herein is accurate. However, neither BD nor any of its subsidiaries assumes any liability whatsoever for 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.