SAFETY DATA SHEET
APO001 REACTION BUFFER

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product name  APO001 REACTION BUFFER

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses  For research use only.

1.3. Details of the supplier of the safety data sheet
Supplier  Web: www.bio-rad-antibodies.com
Bio-Rad
Endeavour House
Langford Business Park
Kidlington
Oxford
OX5 1GE
Tel. +44 (0)1865 852700
antibody_safetydatasheets@bio-rad.com

Contact person  Technical Services Manager

1.4. Emergency telephone number
Emergency telephone  Tel. +44 (0) 1865 852700 (9.00 a.m. - 5.00 p.m. Mon-Fri)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification (EC 1272/2008)
Physical hazards  Not Classified
Health hazards  Not Classified
Environmental hazards  Aquatic Chronic 3 - H412

2.2. Label elements
Hazard statements  H412 Harmful to aquatic life with long lasting effects.
Precautionary statements  P273 Avoid release to the environment.
P501 Dispose of contents/ container in accordance with national regulations.

2.3. Other hazards
No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures
AP001 REACTION BUFFER

SODIUM DIMETHYLARSINATE TRIHYDRATE

<table>
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<tr>
<th>CAS number: 6131-99-3</th>
<th>EC number: 204-708-2</th>
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<tr>
<td>M factor (Acute) = 1</td>
<td>M factor (Chronic) = 1</td>
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Classification
Acute Tox. 3 - H301
Acute Tox. 3 - H331
Carc. 2 - H351
Aquatic Acute 1 - H400
Aquatic Chronic 1 - H410

Classification (67/548/EEC or 1999/45/EC)
T;R23/25 N;R50/53

COBALT DICHLORIDE

<table>
<thead>
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<th>CAS number: 7646-79-9</th>
<th>EC number: 231-589-4</th>
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<tbody>
<tr>
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<td>M factor (Chronic) = 10</td>
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</table>

Classification
Acute Tox. 4 - H302
Acute Tox. 4 - H332
Resp. Sens. 1B - H334
Skin Sens. 1 - H317
Muta. 2 - H341
Carc. 1A - H350i
Repr. 1B - H360
STOT RE 2 - H373
Aquatic Acute 1 - H400
Aquatic Chronic 1 - H410

Classification (67/548/EEC or 1999/45/EC)
Carc. Cat. 2;R49 Muta. Cat. 3;R68 Repr. Cat. 2;R60 Xn;R22
R42/43 N;R50/53

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition comments
No other ingredients, including those with occupational exposure limits, present above the level of disclosure

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
Due to the small packaging, the risk of inhalation is minimal. If spray/mist has been inhaled, proceed as follows. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention if any discomfort continues.

Ingestion
Never give anything by mouth to an unconscious person. Do not induce vomiting. Rinse mouth thoroughly with water. Get medical attention if any discomfort continues. Due to the small packaging, the risk of ingestion is minimal.

Skin contact
Due to the small packaging, the risk of skin contact is minimal. Remove contaminated clothing and rinse skin thoroughly with water. Get medical attention if any discomfort continues.

Eye contact
Due to the small packaging, the risk of eye contact is minimal. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation
May cause cause coughing or mild irritation.
APO001 REACTION BUFFER

Ingestion
May cause discomfort if swallowed.

Skin contact
Prolonged skin contact may cause redness and irritation.

Eye contact
May cause temporary eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor
No specific recommendations.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
The product is not flammable. Use fire-extinguishing media suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards
There are no known reactivity hazards associated with this product. No unusual fire or explosion hazards noted.

Hazardous combustion products
Does not decompose when used and stored as recommended.

5.3. Advice for firefighters

Protective actions during firefighting
No specific firefighting precautions known.

Special protective equipment for firefighters
Use protective equipment appropriate for surrounding materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions
Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate.

6.2. Environmental precautions

Environmental precautions
Avoid the spillage or runoff entering drains, sewers or watercourses.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up
Absorb spillage with non-combustible, absorbent material. Flush contaminated area with plenty of water. Avoid the spillage or runoff entering drains, sewers or watercourses.

6.4. Reference to other sections

Reference to other sections
Wear protective clothing as described in Section 8 of this safety data sheet.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions
Avoid spilling. Avoid contact with skin and eyes. Good personal hygiene procedures should be implemented. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions
Keep only in the original container. Store at specified temperature. Refer to product label.

Storage class
Refer to product datasheet.

7.3. Specific end use(s)

Specific end use(s)
The identified uses for this product are detailed in Section 1.2.
SECTION 8: Exposure Controls/personal protection

8.1. Control parameters
Occupational exposure limits
COBALT DICHLORIDE
Long-term exposure limit (8-hour TWA): WEL 0.1 mg/m³
Carc as Co
Sen
WEL = Workplace Exposure Limit
Carc = Capable of causing cancer and/or heritable genetic damage.
Sen = Capable of causing occupational asthma.

8.2. Exposure controls

Protective equipment

Provide adequate ventilation. Avoid inhalation of vapours and spray/mists. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection
Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Chemical splash goggles or face shield.

Hand protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible.

Other skin and body protection
Wear appropriate clothing to prevent any possibility of skin contact. Wear apron or protective clothing in case of contact.

Hygiene measures
Provide eyewash station. Do not smoke in work area. Wash hands at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink or smoke.

Respiratory protection
No specific recommendations. Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance
Liquid.

Colour
Varying.

Odour
No characteristic odour.

pH
Not available.

Melting point
Not determined.

Initial boiling point and range
Not available.

Flash point
Not applicable.

Evaporation rate
Not determined.

Upper/lower flammability or explosive limits
Not applicable.
APO001 REACTION BUFFER

Vapour pressure Not determined.
Vapour density Not determined.
Relative density Not determined.
Solubility(ies) Soluble in water.
Partition coefficient Not determined.
Auto-ignition temperature Not determined.
Decomposition Temperature Not determined.
Viscosity Not determined.
Explosive properties Not determined.
Oxidising properties Not determined.

9.2. Other information
Other information None.

SECTION 10: Stability and reactivity

10.1. Reactivity
Reactivity There are no known reactivity hazards associated with this product.

10.2. Chemical stability
Stability Stable at normal ambient temperatures.

10.3. Possibility of hazardous reactions
Possibility of hazardous reactions Will not polymerise.

10.4. Conditions to avoid
Conditions to avoid Avoid exposure to high temperatures or direct sunlight.

10.5. Incompatible materials
Materials to avoid Strong acids.

10.6. Hazardous decomposition products
Hazardous decomposition products Does not decompose when used and stored as recommended.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Toxicological effects No information available.

Acute toxicity - oral
Notes (oral LD₅₀) Not determined.
ATE oral (mg/kg) 50,000.0

Acute toxicity - inhalation
ATE inhalation (gases ppm) 350,000.0
ATE inhalation (vapours mg/l) 1,500.0
APO001 REACTION BUFFER

ATE inhalation (dusts/mists mg/l) 250.0

Skin corrosion/irritation
Human skin model test Not determined.

Serious eye damage/irritation
Serious eye damage/irritation Not determined.

Germ cell mutagenicity
Genotoxicity - in vitro Not determined.

Carcinogenicity
Carcinogenicity Not determined.

Reproductive toxicity
Reproductive toxicity - fertility Not determined.

Specific target organ toxicity - single exposure
STOT - single exposure Not determined.

Specific target organ toxicity - repeated exposure
STOT - repeated exposure Not determined.

Aspiration hazard
Aspiration hazard Not determined.

Inhalation Gas or vapour in high concentrations may irritate the respiratory system. Symptoms following overexposure may include the following: Coughing.

Ingestion May cause discomfort if swallowed.

Skin contact Liquid may irritate skin.

Eye contact Vapour or spray in the eyes may cause irritation and smarting.

Acute and chronic health hazards
Because of the product’s quantity and composition, the health hazard is regarded as low.

Route of entry Ingestion. Skin and/or eye contact

SECTION 12: Ecological Information

Ecotoxicity There are no data on the ecotoxicity of this product.

12.1. Toxicity
Acute toxicity - fish Not determined.

12.2. Persistence and degradability
Persistence and degradability There are no data on the degradability of this product.

12.3. Bioaccumulative potential
Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Not determined.

12.4. Mobility in soil
Mobility The product is soluble in water.
APO001 REACTION BUFFER

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment  No information available

12.6. Other adverse effects

Other adverse effects  Not determined.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information  When handling waste, the safety precautions applying to handling of the product should be considered.

Disposal methods  Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

General  The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

Road transport notes  Not classified.

Rail transport notes  Not classified.

Sea transport notes  Not classified.

Air transport notes  Not classified.

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

Not applicable.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant  No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

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

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
**APO001 REACTION BUFFER**

### EU legislation

### Guidance
Workplace Exposure Limits EH40.  
Approved Classification and Labelling Guide (Sixth edition) L131.  
Safety Data Sheets for Substances and Preparations.

### 15.2. Chemical safety assessment
No chemical safety assessment has been carried out.

<table>
<thead>
<tr>
<th><strong>SECTION 16: Other information</strong></th>
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<tbody>
<tr>
<td><strong>General information</strong></td>
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<td><strong>Revision date</strong></td>
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<td><strong>Revision</strong></td>
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<tr>
<td><strong>Supersedes date</strong></td>
</tr>
<tr>
<td><strong>SDS number</strong></td>
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</tbody>
</table>
| **Hazard statements in full** | H301 Toxic if swallowed.  
H302 Harmful if swallowed.  
H317 May cause an allergic skin reaction.  
H318 Causes serious eye damage.  
H331 Toxic if inhaled.  
H332 Harmful if inhaled.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H341 Suspected of causing genetic defects.  
H350i May cause cancer by inhalation.  
H351 Suspected of causing cancer.  
H360 May damage fertility or the unborn child.  
H373 May cause damage to organs (Lungs) through prolonged or repeated exposure.  
H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.  
H412 Harmful to aquatic life with long lasting effects. |

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.