SAFETY DATA SHEET
Buffered Ammonium Persulfate Solution

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

1.1. Product identifier
Trade name or designation of the mixture: Buffered Ammonium Persulfate Solution

Product application

<table>
<thead>
<tr>
<th>GE Analytical Instruments part number</th>
<th>Product name</th>
</tr>
</thead>
<tbody>
<tr>
<td>APF 90150-XX, APF 90300-XX</td>
<td>Buffered Ammonium Persulfate</td>
</tr>
</tbody>
</table>

GE Analytical Instruments kit number

<table>
<thead>
<tr>
<th>Date of first issue</th>
<th>26/10/2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version number</td>
<td>3.0</td>
</tr>
<tr>
<td>Revision date</td>
<td>05/02/2014</td>
</tr>
<tr>
<td>Supersedes date</td>
<td>18/11/2013</td>
</tr>
</tbody>
</table>

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Analytical reagent.
Uses advised against: None known.

1.3. Details of the supplier of the safety data sheet

GE Analytical Instruments Inc
6060 Spine Road
Boulder, CO 80301
T 303-444-2009
e-mail: emea.productstewardship@ge.com

GE Analytical Instruments
Unit 3 Mercury Way
Urmston
Manchester M41 7 LY
Tel: +44 (0) 161 864 6800

1.4. Emergency telephone number

1-800-535-5053 INFOTRAC (North America)

Outside of N.A., call collect: 1-352-323-3500
GE (800) 877-1940

National Poisons Information Centre
NHS Direct on 0845 46 47

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC as amended
Classification: R42/43

Hazard summary

- Physical hazards: Not classified for physical hazards.
- Health hazards: May cause sensitisation by inhalation and skin contact.
- Environmental hazards: Not classified for hazards to the environment.

Classification according to Regulation (EC) No 1272/2008 as amended

<table>
<thead>
<tr>
<th>Physical hazards</th>
<th>Health hazards</th>
<th>Environmental hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrosive to metals</td>
<td>Skin corrosion/irritation</td>
<td></td>
</tr>
<tr>
<td>Category 1</td>
<td>Category 2</td>
<td>Category 2</td>
</tr>
<tr>
<td>H290 - May be corrosive to metals.</td>
<td>H315 - Causes skin irritation.</td>
<td>H319 - Causes serious eye irritation.</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET
Buffered Ammonium Persulfate Solution

Respiratory sensitisation  
Category 1  
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitisation  
Category 1  
H317 - May cause an allergic skin reaction.

2.2. Label elements
Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Ammonium persulphate, Disodium phosphat(e)sodium phosphate, dibasic), SODIUM PHOSPHATE, MONOBASIC, Water

Hazard pictograms

Signal word  
Danger

Hazard statements
H290  
May be corrosive to metals.

H315  
Causes skin irritation.

H317  
May cause an allergic skin reaction.

H319  
Causes serious eye irritation.

H334  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statements
Response
P302 + P352  
IF ON SKIN: Wash with plenty of soap and water.

P304 + P341  
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P342 + P311  
If experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician.

Storage
P406  
Store in corrosive resistant container with a resistant inner liner.

Disposal
P501  
Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information
Not applicable.

2.3. Other hazards
Not assigned.

SECTION 3: Composition/information on ingredients

Mixtures

Chemical description  
Aqueous solution of inorganic salts

Chemical name  
Water  
Ammonium persulphate

% 80,5

CAS-No. / EC No.  
7732-18-5
231-791-2

REACH Registration No.  -
INDEX No.  -

Notes  

Classification: DSD:

Ox. Liq. 3;H272, Acute Tox. 4;H302, Skin Irrit. 2;H315, Skin Sens. 1;H317, Eye Irrit. 2;H319, Resp. Sens. 1;H334, STOT SE 3;H335
SAFETY DATA SHEET
Buffered Ammonium Persulfate Solution

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>%</th>
<th>CAS-No. / EC No.</th>
<th>REACH Registration No.</th>
<th>INDEX No.</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium phosphate (sodium phosphate, dibasic)</td>
<td>2,8</td>
<td>7558-79-4</td>
<td>01-2119489797-11</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Classification:</td>
<td>DSD:</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CLP:</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SODIUM PHOSPHATE, MONOBASIC</td>
<td>1,7</td>
<td>10049-21-5</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Classification:</td>
<td>DSD:</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CLP:</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The classification of the above substance(s) is given, including the symbol letters, R-phrases, hazard class, category code and hazard statements which are assigned in accordance with their physicochemical, health and environmental hazards. Please refer to section 16 where the full text of each relevant R-phrase and H-statement is listed.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
Move to fresh air.
Seek medical attention.

Skin contact
Remove contaminated clothing.
Wash off immediately with soap and plenty of water.
Seek medical attention.

Eye contact
Immediately flush eyes with plenty of water.
Seek medical attention.

Ingestion
First rinse mouth with water.
Immediately give 1-2 glasses of water, if victim is fully conscious.
Do not induce vomiting.
Seek medical attention.

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

4.3. Indication of any immediate medical attention and special treatment needed
Not available.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
Dry chemical, CO2, water spray or regular foam.

Unsuitable extinguishing media
None.

5.2. Special hazards arising from the substance or mixture
Oxides of carbon, nitrogen, phosphorus, and sulphur evolved in fire.

5.3. Advice for firefighters

Special protective equipment for firefighters
Self contained breathing apparatus. [CEN : EN 137]
Protective clothing [CEN : EN 469]
Protective gloves [CEN : EN 659]
Helmet [CEN : EN 443]

Special fire fighting procedures
Use standard firefighting procedures and consider the hazards of other involved materials.
Prevent spillage and fire-fighting water from entering in public sewers or the immediate environment.
SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Wear protective clothing, gloves and safety goggles.

For emergency responders
Use personal protection recommended in Section 8 of the MSDS.

6.2. Environmental precautions
Prevent from entering sewers or the immediate environment. Accidental release of large quantities into the aquatic environment may harm aquatic organisms.

6.3. Methods and material for containment and cleaning up
Spills of the product are very slippery.
Remove small spills with plenty of water.

6.4. Reference to other sections
Please refer also to section no. 8 ‘Exposure controls’ for further information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Ensure good ventilation.
Handle in accordance with good industrial hygiene and safety procedures.
Wash contaminated skin promptly.

7.2. Conditions for safe storage, including any incompatibilities
Store in cool, well ventilated area.
Store containers closed when not in use.
Store in a closed container away from incompatible materials.

7.3. Specific end use(s)
Only for professional and industrial users

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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

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

Recommended monitoring procedures
Not available.

Derived no-effect level (DNEL)
Not available.

Predicted no effect concentrations (PNECs)
Not available.

8.2. Exposure controls

Appropriate engineering controls
Adequate ventilation to maintain air contaminants below exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection
Safety goggles.
CEN : EN 166

Skin protection
- Hand protection
Neoprene gloves [Protection against unintentional short-term contact]
CEN : EN 374-1/2/3; EN 420
- Other
Protective clothing.
CEN : EN 340; EN 369; EN 465

Respiratory protection
In case of insufficient ventilation, use a breathing mask with filter type: B2-P2
CEN : EN 140; EN 141

Thermal hazards
Not available.

Environmental exposure controls
Prevent from entering in public sewers or the immediate environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance
Colour
Colourless

Physical state
Liquid

Odour
None

Odour threshold
Not available.
SAFETY DATA SHEET

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pH (concentrated product) 6.5
Melting point/freezing point 1 °C
Initial boiling point and boiling range 100 °C
Flash point > 100 °C P-M(CC)
Evaporation rate < 1 (Ether = 1)
Flammability (solid, gas) Not applicable.
Upper/lower flammability or explosive limits
  Flammability limit - lower (%) Not available.
  Flammability limit - upper (%) Not available.
Vapour pressure 11 mm Hg
Vapour density 1 (Air = 1)
Relative density 1.09
Relative density temperature 21 °C
Solubility
  Solubility (water) Not available.
  Partition coefficient (n-octanol/water) Not available.
Auto-ignition temperature Not applicable.
Decomposition temperature Not available.
Viscosity Not applicable.
Viscosity temperature 21 °C
Explosive properties Not available.
Oxidizing properties Not available.

9.2. Other information
Percent volatile 1 (Estimated)

SECTION 10: Stability and reactivity
10.1. Reactivity Not available.
10.2. Chemical stability Material is stable under normal conditions.
10.3. Possibility of hazardous reactions Hazardous polymerisation does not occur. Not applicable.
10.4. Conditions to avoid No special requirement.
10.5. Incompatible materials Avoid contact with strong reducing agents.
10.6. Hazardous decomposition products Oxides of carbon, nitrogen, phosphorus, and sulphur evolved in fire.

SECTION 11: Toxicological information
11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Product</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffered Ammonium Persulfate Solution (Mixture)</td>
<td>Acute Oral LD50 Rat: &gt; 5000 mg/kg (Calculated according to GHS additivity formula)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium phosphate(sodium phosphate, dibasic) (7558-79-4)</td>
<td>Acute Oral LD50 Rat: &gt; 5000 mg/kg</td>
</tr>
<tr>
<td>Ammonium persulphate (7727-54-0)</td>
<td>Acute Dermal LD50 Rabbit: 2000 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Acute Inhalation LC50 Rat: 2.95 mg/l 4 hour</td>
</tr>
<tr>
<td></td>
<td>Acute Oral LD50 Rat: 495 mg/kg</td>
</tr>
</tbody>
</table>

Material name: Buffered Ammonium Persulfate Solution
SAFETY DATA SHEET

Buffered Ammonium Persulfate Solution

Acute toxicity
Not classified.

Skin corrosion/irritation
Causes skin irritation.

Respiratory sensitisation
May cause sensitisation by inhalation.

Specific target organ toxicity
- repeated exposure
Not classified.

Specific target organ toxicity
- single exposure
Not classified.

Carcinogenicity
Not classified.

Germ cell mutagenicity
Not classified.

Reproductive toxicity
Not classified.

Information on likely routes of exposure

Ingestion
May cause slight gastrointestinal irritation.

Inhalation
May cause sensitisation.

Skin contact
May cause sensitisation.
Causes irritation.

Eye contact
Causes irritation.

Symptoms
Not available.

Mixture versus substance information
None known.

Other information
Not available.

SECTION 12: Ecological information

12.1. Toxicity
No toxicity data noted for the ingredient(s).

12.2. Persistence and degradability
No data available

12.3. Bioaccumulative potential
Not available.

Partition coefficient
n-octanol/water (log Kow)
Not available.

Bioconcentration factor (BCF)
Not available.

12.4. Mobility in soil
Not available.

12.5. Results of PBT and vPvB assessment
Not a PBT or vPvB substance or mixture.

12.6. Other adverse effects
Not available.

Summary
The product is not classified as dangerous for the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Contaminated packaging
According to Hazardous Waste Regulations.

EWC | European Waste Code | recommendation : 15 01 10
15 Waste packaging; absorbents, wiping cloths, filter materials and protective clothing not otherwise specified.
15 01 10 Packaging (including separately collected municipal packaging waste).
Depending on the origin and state of the waste, other EWC numbers may be applicable too.

Disposal methods/information
According to Hazardous Waste Regulations.

EWC | European Waste Code | recommendation : 16 03 03
16 Wastes not otherwise specified in the list.
16 03 Off-specification batches and unused products.
16 03 03 Inorganic wastes containing dangerous substances.
Depending on the origin and state of the waste, other EWC numbers may be applicable too.
SAFETY DATA SHEET

Buffered Ammonium Persulfate Solution

SECTION 14: Transport information

ADR
14.1. UN number UN1760
14.2. UN proper shipping name Corrosive liquid, n.o.s. (15% Ammonium persulphate and Water)
14.3. Transport hazard class(es) B
Subsidiary class(es) -
14.4. Packing group III
14.5. Environmental hazards No
14.6. Special precautions for user Not available.

RID
14.1. UN number UN1760
14.2. UN proper shipping name Corrosive liquid, n.o.s. (15% Ammonium persulphate and Water)
14.3. Transport hazard class(es) B
Subsidiary class(es) -
14.4. Packing group III
14.5. Environmental hazards No
14.6. Special precautions for user Not available.

ADN
14.1. UN number UN1760
14.2. UN proper shipping name Corrosive liquid, n.o.s. (15% Ammonium persulphate and Water)
14.3. Transport hazard class(es) B
Subsidiary class(es) -
14.4. Packing group III
14.5. Environmental hazards No
14.6. Special precautions for user Not available.

IATA
14.1. UN number UN1760
14.2. UN proper shipping name Corrosive liquid, n.o.s. (15% Ammonium persulphate and Water)
14.3. Transport hazard class(es) B
Subsidiary class(es) -
14.4. Packing group III
14.5. Environmental hazards No
14.6. Special precautions for user Not available.

IMDG
14.1. UN number UN1760
14.2. UN proper shipping name Corrosive liquid, n.o.s. (15% Ammonium persulphate and Water)
14.3. Transport hazard class(es) B
Subsidiary class(es) -
14.4. Packing group III
14.5. Environmental hazards No
14.6. Special precautions for user Not available.
14.7. Marine pollutant F-A, S-B

Material name: Buffered Ammonium Persulfate Solution
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

ADN; ADR; IATA; IMDG; RID

SECTION 15: Regulatory information

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

EU regulations

- Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I
  - Not listed.
- Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II
  - Not listed.
  - Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended
  - Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended
  - Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended
  - Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V as amended
  - Not listed.
- Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry
  - Not listed.
- Regulation (EC) No. 1907/2006, REACH Article 59(1) Candidate List as currently published by ECHA
  - Not listed.

Authorisations

- Regulation (EC) No. 143/2011 Annex XIV Substances Subject to Authorisation
  - Not listed.

Restrictions on use

- Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended
  - Not listed.
- Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work
  - Not regulated.
- Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding
  - Not regulated.

Other EU regulations

- Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances
  - Not regulated.
- Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work
  - Ammonium persulphate (CAS 7727-54-0)
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Directive 94/33/EC on the protection of young people at work
Ammonium persulphate (CAS 77275-54-0)

National regulations Not available.

15.2. Chemical safety assessment Not available.

Inventory status

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>(EINECS)</td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
</tbody>
</table>

*A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

SECTION 16: Other information

List of abbreviations
CAS: Chemical Abstract Service Registration Number
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
EC50: Effect Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
CEN: European Committee for Standardisation
EC-No: European Commission Number
CLP: Regulation on classification, labeling and packaging of substances and mixtures
DSD: Dangerous Substances Directive
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
RID: International Rule for Transport of Dangerous Substances by Railway

References
Safety data sheets of raw materials.

Information on evaluation method leading to the classification of mixture
The physical, health and environmental hazards of this mixture are assessed by applying the classification criteria for each hazard class or differentiation in Parts 2 to 5 of Annex I to Regulation (EC) No 1272/2008 (CLP).

Full text of any statements or R-phrases and H-statements under Sections 2 to 15
R8 Contact with combustible material may cause fire.
R22 Harmful if swallowed.
R36/37/38 Irritating to eyes, respiratory system and skin.
R42/43 May cause sensitisation by inhalation and skin contact.
H272 May intensify fire; oxidiser.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H334A May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.

Revision information
SECTION 2: Hazards identification: Main symptoms(dynamic setting)
SECTION 4: First aid measures: Eye contact
SECTION 4: First aid measures: Ingestion
SECTION 4: First aid measures: Inhalation
SECTION 4: First aid measures: Skin contact
SECTION 5: Firefighting measures: Suitable extinguishing media
Physical & Chemical Properties: Multiple Properties
SECTION 16: Other information: Further information

Training information
Provide training on safe handling while considering the type of application and exposure scenarios.
SAFETY DATA SHEET

Buffered Ammonium Persulfate Solution

Based on EC Directive / Regulations

- 1999/45/EC
- 2001/118/EC
- (EC) No 1907/2006 (REACH)
- (EC) No 453/2010

Further information

Correction in Section: 2