HORIBA

# SAFETY DATA SHEET

## Section 1. Product and Company Identification

Product Name: 525-4, 500-4, 560-4 (pH 4.01 buffer solution)

Product code: 3999960018, 399996029, 3999960146

Recommended use: For laboratory and Industrial use

Manufacturer / Supplier: Horiba Instruments (Singapore) Pte Ltd
163 Kallang Way #08-14, Mapletree Hi-Tech Park @ Kallang Way
Singapore 349256
Contact No: +65 6745 8300

## Section 2. Hazard identification

Classification of the Substance or Mixture: Mixture

The mixture is classified as not hazardous according to regulation (EC) 1272/2008, Globally Harmonized System (GHS)

GHS Label elements:

Signal word: No Signal word
Hazard statement: No Known significant effects or critical hazards

Precautionary statements:
General: Do not handle until all safety precautions have been read and understood

Other hazards which do not result in classification: None known

## Section 3. Composition/ information on ingredients

Substance or Mixture: Mixture

CAS Numbers other identifiers:

| Ingredients | CAS Number | Percentage |
|---|---|---|
| Potassium Hydrogen Phthalate | 877-24-7 | <2% |
| Water | 7732-18-5 | >98% |

*This product contains <0.01% other ingredient, not required to be listed as it is not hazardous to health and environment.*

*The exact percentage of composition has been withheld as a trade secret*

Chemical formula: Not applicable

## Section 4. First Aid Measures

Description of necessary first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Remove any contact lenses. Get medical attention if irritation occurs.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion: Clean mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, both acute and delayed

Potential acute health effects: No known significant effects or critical hazards

Over-exposure signs/symptoms: No specific data available

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

See toxicological information (Section 11)

## Section 5. Firefighting Measures

Extinguishing Media

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing Media: No Information available

Specific hazards arising from the substance or mixture: No specific information available

Hazardous thermal decomposition products: No Specific data

Special protective actions for Fire-fighters: Promptly isolate the scene by removing all persons from the incident if there is fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release Measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material

For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in section 8 on suitable and unsuitable materials. See also the information in “For non-emergency personnel”

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, water ways, soil and air

Methods and material for containment and cleaning up:

Method for Containment: Prevent further leakage or spillage if safe to do so.

Methods of cleaning up: Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

## Section 7. Handling and storage

Precautions for safe handling
Protective measures: Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits: None

Appropriate engineering controls: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures
Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection
Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection: Personal protective equipment for the body should be selected based on the task

being performed and the risks involved and should be approved by a specialist before handling this product.

| | |
|---|---|
| Other skin protection: | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. |
| Respiratory protection: | Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. |

## Section 9. Physical and chemical properties

Appearance

| | |
|---|---|
| Physical state: | Liquid |
| Colour: | Colourless |
| Odour: | Odourless |
| Odour Threshold: | Not available |
| pH: | 4.01 |
| Melting Point: | Not available |
| Boiling Point: | 100° C |
| Flash point: | [Product does not sustain combustion.] |
| Evaporation rate: | Not available |
| Flammability (solid, gas): | Not available |
| Lower and upper explosive (Flammable) limits: | Not available |
| Vapour pressure: | Not available |
| Vapour density: | Not available |
| Relative density: | Not available |
| Partition coefficient n- octanol/water: | Not available |
| Auto-ignition temperature: | Not available |
| Decomposition temperature: | Not available |
| Viscosity: | Not available |

## Section 10. Stability and reactivity

| | |
|---|---|
| Reactivity: | No specific test data related to reactivity available for this product or its ingredients. |
| Chemical stability: | The product is stable |
| Possibility of hazardous reactions: | Hazardous reactions or instability may occur under certain conditions of storage or use. |
| Conditions to avoid: | No specific data |
| Incompatible materials: | No specific data |
| Hazardous decomposition Products: | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

## Section 11. Toxicological Information

Information on toxicological effects

| | |
|---|---|
| Acute toxicity: | Not available |

| | |
|---|---|
| Irritation/Corrosion: | Not available |
| Sensitization: | Not available |
| Mutagenicity: | Not available |
| Carcinogenicity: | Not available |
| Reproductive toxicity: | Not available |
| Teratogenicity: | Not available |
| Specific target organ toxicity (single exposure): | Not available |
| Specific target organ toxicity (repeated exposure): | Not available |
| Aspiration hazard: | Not available |
| Information on the likely routes of exposure: | Not available |

Potential acute effects:

| | |
|---|---|
| Eye contact: | No known significant effects or critical hazards |
| Inhalation: | No known significant effects or critical hazards |
| Skin contact: | No known significant effects or critical hazards |
| Ingestion: | No known significant effects or critical hazards |

Symptoms related to the physical, chemical and toxicological characteristics

| | |
|---|---|
| Eye contact: | No specific data |
| Inhalation: | No specific data |
| Skin contact: | No specific data |
| Ingestion: | No specific data |

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

| | |
|---|---|
| Potential immediate effects: | Not available |
| Potential delayed effects: | Not available |

Long term exposure

| | |
|---|---|
| Potential immediate effects | Not available |
| Potential delayed effects: | Not available |

| | |
|---|---|
| Potential chronic health effects: | Not available |
| General: | No known significant effects or critical hazards |
| Carcinogenicity: | No known significant effects or critical hazards |
| Mutagenicity: | No known significant effects or critical hazards |
| Teratogenicity: | No known significant effects or critical hazards |
| Developmental effects: | No known significant effects or critical hazards |
| Fertility effects: | No known significant effects or critical hazards |

Numerical measures of toxicity

| | |
|---|---|
| Acute toxicity estimates: | Not available |

## Section 12. Ecological information

| | |
|---|---|
| Toxicity: | Not available |
| Persistence/degradability: | Not available |
| Bio accumulative potential: | Not available |

Mobility in soil

| | |
|---|---|
| Soil/water partition coefficient ($K_{OC}$): | Not available |
| Other adverse effects: | No known significant effects or critical hazards. |

## Section 13. Disposal consideration

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non- recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

| | UN | IMDG | IATA |
|---|---|---|---|
| UN number | Not regulated. | Not regulated. | Not regulated. |
| UN proper shipping name | - | - | - |
| Transport hazard class(es) | - | - | - |
| Packing group | - | - | - |
| Environmental hazards | No. | No. | No. |
| Additional information | - | - | - |

Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

## Section 15. Regulatory information

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

International Inventories:

| | |
|---|---|
| USINV | Complies |
| CANINV | Complies |
| EINECS/ELINCS | Complies |
| ENCS | Complies |
| IECSC | Complies |
| KECL | Complies |
| PICCS | Complies |
| AICS | Complies |

Key of abbreviation:

USINV / TSCA: United States Toxic Substanc3es Control Act Section 8(b) Inventory

CANINV / DSL/NDSL: Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS: European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS: Japanese Existing and New Chemical Substances
IECSC: Chinese Inventory of Existing Chemical Substances
KECL: Korean Existing and Evaluated Chemical Substances
PICCS: Philippines Inventory of Chemical and Chemical Substances
AICS: Australian Inventory of Chemical Substances

Chemical safety assessment:
A chemical safety assessment according to regulation (EC) No: 1907/2006 is not required.

## Section 16. Other information

History:

Date of issue: 6 March 2018

Key of abbreviation:

ATE: Acute Toxicity Estimate
BCF: Bioconcentration Factor
GHS: Globally harmonized System of classification and labelling of chemicals
IATA: International Air Transport Association
IBC= Intermediate Bulk Container
IMDG International maritime Dangerous goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

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.

HORIBA

# SAFETY DATA SHEET

## Section 1. Product and Company Identification

Product Name: 525-7, 500-7, 560-7 (pH 7 buffer solution)

Product code: 3999960020, 399996031, 3999960147

Recommended use: for laboratory and Industrial use

Manufacturer / Supplier: Horiba Instruments (Singapore) Pte Ltd
163 Kallang Way #08-14, Mapletree Hi-Tech Park @ Kallang Way
Singapore 349256
Contact No: +65 6745 8300

## Section 2. Hazard identification

Classification of the Substance or Mixture: Mixture

The mixture is classified as not hazardous according to regulation (EC) 1272/2008, Globally Harmonized System (GHS)

GHS Label elements:

Signal word: No Signal word
Hazard statement: No Known significant effects or critical hazards

Precautionary statements:
General: Do not handle until all safety precautions have been read and understood

Other hazards which do not result in classification: None known

## Section 3. Composition/ information on ingredients

Substance or Mixture: Mixture

CAS Numbers other identifiers:

| Ingredients | CAS Number | Percentage |
|---|---|---|
| Potassium Dihydrogen Phosphate | 7778-77-0 | <1% |
| Disodium Hydrogen Phosphate | 7558-79-4 | <1% |
| Water | 7732-18-5 | >98% |

*This product contains <0.01% other ingredient, not required to be listed as it is not hazardous to health and environment.*

*The exact percentage of composition has been withheld as a trade secret*

Chemical formula: Not applicable

## Section 4. First Aid Measures

Description of necessary first aid measures

| | |
|---|---|
| Eye contact: | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Remove any contact lenses. Get medical attention if irritation occurs. |
| Inhalation: | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. |
| Skin contact: | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. |
| Ingestion | Clean mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. |

Most important symptoms/effects, both acute and delayed

Potential acute health effects: No known significant effects or critical hazards

Over-exposure signs/symptoms: No specific data available

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

See toxicological information (Section 11)

## Section 5. Firefighting Measures

Extinguishing Media

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing Media: No Information available

Specific hazards arising from the substance or mixture: No specific information available

Hazardous thermal decomposition products: No Specific data

Special protective actions for Fire-fighters: Promptly isolate the scene by removing all persons from the incident if there is fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release Measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material

For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in section 8 on suitable and unsuitable materials. See also the information in “For non-emergency personnel”

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, water ways, soil and air

Methods and material for containment and cleaning up:

Method for Containment: Prevent further leakage or spillage if safe to do so.

Methods of cleaning up: Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

## Section 7. Handling and storage

Precautions for safe handling
Protective measures: Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits: None

Appropriate engineering controls: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures
Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

| | |
|---|---|
| Hand protection: | Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. |
| Body protection: | Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. |
| Other skin protection: | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. |
| Respiratory protection: | Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. |

## Section 9. Physical and chemical properties

| | |
|---|---|
| Appearance | |
| Physical state: | Liquid |
| Colour: | Colourless |
| Odour: | Odourless |
| Odour Threshold: | Not available |
| pH: | 7.00 |
| Melting Point: | Not available |
| Boiling Point: | 100° C |
| Flash point: | [Product does not sustain combustion.] |
| Evaporation rate: | Not available |
| Flammability (solid, gas): | Not available |
| Lower and upper explosive (Flammable) limits: | Not available |
| Vapour pressure: | Not available |
| Vapour density: | Not available |
| Relative density: | Not available |
| Partition coefficient n- octanol/water: | Not available |
| Auto-ignition temperature: | Not available |
| Decomposition temperature: | Not available |
| Viscosity: | Not available |

## Section 10. Stability and reactivity

| | |
|---|---|
| Reactivity: | No specific test data related to reactivity available for this product or its ingredients. |
| Chemical stability: | The product is stable |
| Possibility of hazardous reactions: | Hazardous reactions or instability may occur under certain conditions of storage or use. |
| Conditions to avoid: | No specific data |
| Incompatible materials: | No specific data |
| Hazardous decomposition Products: | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

## Section 11. Toxicological Information

Information on toxicological effects

| | |
|---|---|
| Acute toxicity: | Not available |
| Irritation/Corrosion: | Not available |
| Sensitization: | Not available |
| Mutagenicity: | Not available |
| Carcinogenicity: | Not available |
| Reproductive toxicity: | Not available |
| Teratogenicity: | Not available |
| Specific target organ toxicity (single exposure): | Not available |
| Specific target organ toxicity (repeated exposure): | Not available |
| Aspiration hazard: | Not available |
| Information on the likely routes of exposure: | Not available |

Potential acute effects:

| | |
|---|---|
| Eye contact: | No known significant effects or critical hazards |
| Inhalation: | No known significant effects or critical hazards |
| Skin contact: | No known significant effects or critical hazards |
| Ingestion: | No known significant effects or critical hazards |

Symptoms related to the physical, chemical and toxicological characteristics

| | |
|---|---|
| Eye contact: | No specific data |
| Inhalation: | No specific data |
| Skin contact: | No specific data |
| Ingestion: | No specific data |

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

| | |
|---|---|
| Potential immediate effects: | Not available |
| Potential delayed effects: | Not available |

Long term exposure

| | |
|---|---|
| Potential immediate effects: | Not available |
| Potential delayed effects: | Not available |

Potential chronic health effects: Not available

| | |
|---|---|
| General: | No known significant effects or critical hazards |
| Carcinogenicity: | No known significant effects or critical hazards |
| Mutagenicity: | No known significant effects or critical hazards |
| Teratogenicity: | No known significant effects or critical hazards |
| Developmental effects: | No known significant effects or critical hazards |
| Fertility effects: | No known significant effects or critical hazards |

Numerical measures of toxicity

Acute toxicity estimates: Not available

## Section 12. Ecological information

Toxicity: Not available

Persistence/degradability: Not available

Bio accumulative potential: Not available

Mobility in soil

Soil/water partition coefficient ($K_{OC}$): Not available

Other adverse effects: No known significant effects or critical hazards.

## Section 13. Disposal consideration

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non- recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

| | UN | IMDG | IATA |
|---|---|---|---|
| UN number | Not regulated. | Not regulated. | Not regulated. |
| UN proper shipping name | - | - | - |
| Transport hazard class(es) | - | - | - |
| Packing group | - | - | - |
| Environmental hazards | No. | No. | No. |
| Additional information | - | - | - |

Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

## Section 15. Regulatory information

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

International Inventories:

| | |
|---|---|
| USINV | Complies |
| CANINV | Complies |
| EINECS/ELINCS | Complies |
| ENCS | Complies |
| IECSC | Complies |
| KECL | Complies |

| | |
|---|---|
| PICCS | Complies |
| AICS | Complies |

Key of abbreviation:
USINV / TSCA: United States Toxic Substanc3es Control Act Section 8(b) Inventory
CANINV / DSL/NDSL: Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS: European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS: Japanese Existing and New Chemical Substances
IECSC: Chinese Inventory of Existing Chemical Substances
KECL: Korean Existing and Evaluated Chemical Substances
PICCS: Philippines Inventory of Chemical and Chemical Substances
AICS: Australian Inventory of Chemical Substances

Chemical safety assessment:
A chemical safety assessment according to regulation (EC) No: 1907/2006 is not required.

## Section 16. Other information

History:

Date of issue: 28 Feb 2018

Key of abbreviation:
ATE: Acute Toxicity Estimate
BCF: Bioconcentration Factor
GHS: Globally harmonized System of classification and labelling of chemicals
IATA: International Air Transport Association
IBC= Intermediate Bulk Container
IMDG International maritime Dangerous goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

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.

HORIBA

# SAFETY DATA SHEET

## Section 1. Product and Company Identification

Product Name: 525-10, 500-10, 560-10 (pH 10.01 buffer solution)

Product code: 3999960022, 399996033, 3999960138

Recommended use: For laboratory and Industrial use

Manufacturer / Supplier: Horiba Instruments (Singapore) Pte Ltd
163 Kallang Way #08-14, Mapletree Hi-Tech Park @ Kallang Way
Singapore 349256
Contact No: +65 6745 8300

## Section 2. Hazard identification

Classification of the Substance or Mixture: Mixture

The mixture is classified as not hazardous according to regulation (EC) 1272/2008, Globally Harmonized System (GHS)

GHS Label elements:

Signal word: No Signal word
Hazard statement: No Known significant effects or critical hazards

Precautionary statements:
General: Do not handle until all safety precautions have been read and understood

Other hazards which do not result in classification: None known

## Section 3. Composition/ information on ingredients

Substance or Mixture: Mixture

CAS Numbers other identifiers:

| Ingredients | CAS Number | Percentage |
|---|---|---|
| Sodium Carbonate | 497-19-8 | <1% |
| Sodium Bicarbonate | 144-55-8 | <1% |
| Water | 7732-18-5 | >98% |

*This product contains <0.01% other ingredient, not required to be listed as it is not hazardous to health and environment.*

*The exact percentage of composition has been withheld as a trade secret*

Chemical formula: Not applicable

## Section 4. First Aid Measures

Description of necessary first aid measures

| | |
|---|---|
| Eye contact: | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Remove any contact lenses. Get medical attention if irritation occurs. |
| Inhalation: | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. |
| Skin contact: | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. |
| Ingestion | Clean mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. |

Most important symptoms/effects, both acute and delayed

Potential acute health effects: No known significant effects or critical hazards

Over-exposure signs/symptoms: No specific data available

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

See toxicological information (Section 11)

## Section 5. Firefighting Measures

Extinguishing Media

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing Media: No Information available

Specific hazards arising from the substance or mixture: No specific information available

Hazardous thermal decomposition products: No Specific data

Special protective actions for Fire-fighters: Promptly isolate the scene by removing all persons from the incident if there is fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release Measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate

surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material

For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in section 8 on suitable and unsuitable materials. See also the information in “For non-emergency personnel”

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, water ways, soil and air

Methods and material for containment and cleaning up:

Method for Containment: Prevent further leakage or spillage if safe to do so.

Methods of cleaning up: Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

## Section 7. Handling and storage

Precautions for safe handling
Protective measures: Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits: None

Appropriate engineering controls: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures
Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with

side-shields.

Skin protection

| | |
|---|---|
| Hand protection: | Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. |
| Body protection: | Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. |
| Other skin protection: | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. |
| Respiratory protection: | Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. |

## Section 9. Physical and chemical properties

Appearance

| | |
|---|---|
| Physical state: | Liquid |
| Colour: | Colourless |
| Odour: | Odourless |
| Odour Threshold: | Not available |
| pH: | 10.01 |
| Melting Point: | Not available |
| Boiling Point: | 100° C |
| Flash point: | [Product does not sustain combustion.] |
| Evaporation rate: | Not available |
| Flammability (solid, gas): | Not available |
| Lower and upper explosive (Flammable) limits: | Not available |
| Vapour pressure: | Not available |
| Vapour density: | Not available |
| Relative density: | Not available |
| Partition coefficient n- octanol/water: | Not available |
| Auto-ignition temperature: | Not available |
| Decomposition temperature: | Not available |
| Viscosity: | Not available |

## Section 10. Stability and reactivity

| | |
|---|---|
| Reactivity: | No specific test data related to reactivity available for this product or its ingredients. |
| Chemical stability: | The product is stable |
| Possibility of hazardous reactions: | Hazardous reactions or instability may occur under certain conditions of storage or use. |
| Conditions to avoid: | No specific data |
| Incompatible materials: | No specific data |
| Hazardous decomposition | |

| | |
|---|---|
| Products: | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

## Section 11. Toxicological Information

Information on toxicological effects

| | |
|---|---|
| Acute toxicity: | Not available |
| Irritation/Corrosion: | Not available |
| Sensitization: | Not available |
| Mutagenicity: | Not available |
| Carcinogenicity: | Not available |
| Reproductive toxicity: | Not available |
| Teratogenicity: | Not available |
| Specific target organ: toxicity (single exposure): | Not available |
| Specific target organ toxicity (repeated exposure): | Not available |
| Aspiration hazard: | Not available |
| Information on the likely routes of exposure: | Not available |

Potential acute effects:

| | |
|---|---|
| Eye contact: | No known significant effects or critical hazards |
| Inhalation: | No known significant effects or critical hazards |
| Skin contact: | No known significant effects or critical hazards |
| Ingestion: | No known significant effects or critical hazards |

Symptoms related to the physical, chemical and toxicological characteristics

| | |
|---|---|
| Eye contact: | No specific data. |
| Inhalation: | No specific data. |
| Skin contact: | No specific data. |
| Ingestion: | No specific data. |

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

| | |
|---|---|
| Potential immediate effect: | Not available |
| Potential delayed effects: | Not available |

Long term exposure

| | |
|---|---|
| Potential immediate effects: | Not available |
| Potential delayed effects: | Not available |

| | |
|---|---|
| Potential chronic health effects: | Not available |
| General: | No known significant effects or critical hazards |
| Carcinogenicity: | No known significant effects or critical hazards |
| Mutagenicity: | No known significant effects or critical hazards |
| Teratogenicity: | No known significant effects or critical hazards |
| Developmental effects: | No known significant effects or critical hazards |
| Fertility effects: | No known significant effects or critical hazards |

Numerical measures of toxicity

| | |
|---|---|
| Acute toxicity estimates: | Not available |

## Section 12. Ecological information

| | |
|---|---|
| Toxicity: | Not available |
| Persistence/degradability: | Not available |
| Bio accumulative potential: | Not available |

Mobility in soil
Soil/water partition coefficient ($K_{OC}$): Not available

Other adverse effects: No known significant effects or critical hazards.

## Section 13. Disposal consideration

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non- recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

| | UN | IMDG | IATA |
|---|---|---|---|
| UN number | Not regulated. | Not regulated. | Not regulated. |
| UN proper shipping name | - | - | - |
| Transport hazard class(es) | - | - | - |
| Packing group | - | - | - |
| Environmental hazards | No. | No. | No. |
| Additional information | - | - | - |

Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

## Section 15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture.
International Inventories:

| | |
|---|---|
| USINV | Complies |
| CANINV | Complies |
| EINECS/ELINCS | Complies |
| ENCS | Complies |

| | |
|---|---|
| IECSC | Complies |
| KECL | Complies |
| PICCS | Complies |
| AICS | Complies |

Key of abbreviation:
USINV / TSCA: United States Toxic Substanc3es Control Act Section 8(b) Inventory
CANINV / DSL/NDSL: Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS: European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS: Japanese Existing and New Chemical Substances
IECSC: Chinese Inventory of Existing Chemical Substances
KECL: Korean Existing and Evaluated Chemical Substances
PICCS: Philippines Inventory of Chemical and Chemical Substances
AICS: Australian Inventory of Chemical Substances

Chemical safety assessment:
A chemical safety assessment according to regulation (EC) No: 1907/2006 is not required.

## Section 16. Other information

History:

Date of issue: 6 March 2018

Key of abbreviation:
ATE: Acute Toxicity Estimate
BCF: Bioconcentration Factor
GHS: Globally harmonized Syatem of classification and labelling of chemicals
IATA: International Air Transport Association
IBC= Intermediate Bulk Container
IMDG International maritime Dangerous goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

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.

HORIBA

# SAFETY DATA SHEET

## Section 1. Product and Company Identification

Product Name: 525-3; 560-3 (internal filling solution for pH combination electrode)

Product code: 3999960023; 3999960139

Recommended use: For laboratory and Industrial use

Manufacturer / Supplier: Horiba Instruments (Singapore) Pte Ltd
163 Kallang Way #08-14, Mapletree Hi-Tech Park @ Kallang Way
Singapore 349256
Contact No: +65 6745 8300

## Section 2. Hazard identification

Classification of the Substance or Mixture: Mixture

The mixture is classified as not hazardous according to regulation (EC) 1272/2008, Globally Harmonized System (GHS)

GHS Label elements:

Signal word: No Signal word
Hazard statement: No Known significant effects or critical hazards

Precautionary statements:
General: Do not handle until all safety precautions have been read and understood

Other hazards which do not result in classification: None known

## Section 3. Composition/ information on ingredients

Substance or Mixture: Mixture

CAS Numbers other identifiers:

| Ingredients | CAS Number | Percentage |
|---|---|---|
| Potassium Chloride | 7447-40-7 | <25% |
| Water | 7732-18-5 | >75% |

The exact percentage of composition has been withheld as a trade secret

Chemical formula: Not applicable

## Section 4. First Aid Measures

Description of necessary first aid measures

| | |
|---|---|
| Eye contact: | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Remove any contact lenses. Get medical attention if irritation occurs. |
| Inhalation: | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. |
| Skin contact: | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. |
| Ingestion: | Clean mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. |

Most important symptoms/effects, both acute and delayed

Potential acute health effects:

Eye contact: Causes eye irritation

Over-exposure signs/symptoms: No specific data available

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

See toxicological information (Section 11)

## Section 5. Firefighting Measures

Extinguishing Media

| | |
|---|---|
| Suitable extinguishing media: | Use an extinguishing agent suitable for the surrounding fire. |
| Unsuitable extinguishing Media: | No Information available |
| Specific hazards arising from the substance or mixture: | No specific information available |
| Hazardous thermal decomposition products: | No Specific data |
| Special protective actions for Fire-fighters: | Promptly isolate the scene by removing all persons from the incident if there is fire. No action shall be taken involving any personal risk or without suitable training |
| Special protective equipment for fire-fighters | Fire-fighters should wear appropriate protective equipment self- contained breathing apparatus with a full face-piece operated in positive pressure mode. |

## Section 6. Accidental release Measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material.

For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information In section 8 on suitable and unsuitable materials. See also the information in “For non-emergency personnel”.

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, water ways, soil and air.

Methods and material for containment and cleaning up:

Method for Containment: Prevent further leakage or spillage if safe to do so.

Methods of cleaning up: Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

## Section 7. Handling and storage

Precautions for safe handling
Protective measures: Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

Control parameters
Occupational exposure limits: None

Appropriate engineering controls: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process Equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures
Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-

shields.

Skin protection

| | |
|---|---|
| Hand protection: | Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. |
| Body protection: | Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. |
| Other skin protection: | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. |
| Respiratory protection: | Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. |

## Section 9. Physical and chemical properties

Appearance

| | |
|---|---|
| Physical state: | Liquid |
| Colour: | Colourless |
| Odour: | Odourless |
| Odour Threshold: | Not available |
| pH: | Not available |
| Melting Point: | Not available |
| Boiling Point: | 100° C |
| Flash point: | [Product does not sustain combustion.] |
| Evaporation rate: | Not available |
| Flammability (solid, gas): | Not available |
| Lower and upper explosive: (Flammable) limits | Not available |
| Vapour pressure: | Not available |
| Vapour density: | Not available |
| Relative density: | Not available |
| Partition coefficient: n- octanol/water | Not available |
| Auto-ignition temperature: | Not available |
| Decomposition temperature: | Not available |
| Viscosity: | Not available |

## Section 10. Stability and reactivity

| | |
|---|---|
| Reactivity: | No specific test data related to reactivity available for this product or its ingredients |
| Chemical stability: | The product is stable |
| Possibility of hazardous: | Under normal conditions of storage and use, hazardous reactions will not occur. |
| Conditions to avoid: | No specific data |
| Incompatible materials: | No specific data |
| Hazardous decomposition: Products | Under normal conditions of storage and use, hazardous decomposition products should be produced |

## Section 11. Toxicological Information

Information on toxicological effects

| | |
|---|---|
| Acute toxicity: | Not available |
| Irritation/Corrosion: | Not available |
| Sensitization: | Not available |
| Mutagenicity: | Not available |
| Carcinogenicity: | Not available |
| Reproductive toxicity: | Not available |
| Teratogenicity: | Not available |
| Specific target organ toxicity (single exposure): | Not available |
| Specific target organ: toxicity (repeated exposure): | Not available |
| Aspiration hazard: | Not available |
| Information on the likely: routes of exposure | Not available |

Potential acute health effects:

| | |
|---|---|
| Eye contact: | Causes eye irritation |
| Inhalation: | No known significant effects or critical hazards |
| Skin contact: | No known significant effects or critical hazards |
| Ingestion: | No known significant effects or critical hazards |

Symptoms related to the physical, chemical and toxicological characteristics

| | |
|---|---|
| Eye contact: | Adverse symptoms may include irritation, watering and redness |
| Inhalation: | No specific data |
| Skin contact: | No specific data |
| Ingestion: | No specific data |

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

| | |
|---|---|
| Potential immediate: effects | Not available |
| Potential delayed effects: | Not available |

Long term exposure

| | |
|---|---|
| Potential immediate: effects | Not available |
| Potential delayed effects: | Not available |
| Potential chronic health effects: | Not available |
| General: | No known significant effects or critical hazards |
| Carcinogenicity: | No known significant effects or critical hazards |
| Mutagenicity: | No known significant effects or critical hazards |
| Teratogenicity: | No known significant effects or critical hazards |
| Developmental effects: | No known significant effects or critical hazards |
| Fertility effects: | No known significant effects or critical hazards |

Numerical measures of toxicity

| | |
|---|---|
| Acute toxicity estimates: | Not available |

## Section 12. Ecological information

Toxicity: Not available

Persistence/degradability: Not available

Bio accumulative potential: Not available

Mobility in soil
Soil/water
partition coefficient ($K_{OC}$): Not available

Other adverse effects: No known significant effects or critical hazards.

## Section 13. Disposal consideration

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non- recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

| | UN | IMDG | IATA |
|---|---|---|---|
| UN number | Not regulated. | Not regulated. | Not regulated. |
| UN proper shipping name | - | - | - |
| Transport hazard class(es) | - | - | - |
| Packing group | - | - | - |
| Environmental hazards | No. | No. | No. |
| Additional information | - | - | - |

Special precautions for user: Transport within user's premises: always transport in closed containers that are ` upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

## Section 15. Regulatory information

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

International Inventories:

| | |
|---|---|
| USINV | Complies |
| CANINV | Complies |
| EINECS/ELINCS | Complies |
| ENCS | Complies |
| IECSC | Complies |
| KECL | Complies |
| PICCS | Complies |
| AICS | Complies |

Key of abbreviation:

USINV / TSCA: United States Toxic Substanc3es Control Act Section 8(b) Inventory
CANINV / DSL/NDSL: Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS: European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS: Japanese Existing and New Chemical Substances
IECSC: Chinese Inventory of Existing Chemical Substances
KECL: Korean Existing and Evaluated Chemical Substances
PICCS: Philippines Inventory of Chemical and Chemical Substances
AICS: Australian Inventory of Chemical Substances

Chemical safety assessment:

A chemical safety assessment according to regulation (EC) No: 1907/2006 is not required.

## Section 16. Other information

History:

Date of issue: 8 March 2018

Key of abbreviation:

ATE: Acute Toxicity Estimate

BCF: Bioconcentration Factor

GHS: Globally harmonized Syatem of classification and labelling of chemicals

IATA: International Air Transport Association

IBC= Intermediate Bulk Container

IMDG International maritime Dangerous goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

UN = United Nations

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.