Safety Data Sheet

Version	:	1
Date of issue/ Date of revision	:	15/06/2018
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Section 1. Identification

Product identifier	:	PURASPEC$_{JM}$ 5158
Product type	:	Solid.

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

Specific uses	:	Mercury removal

Section 2. Hazard(s) identification

This health hazard assessment is based on results obtained on an analogous preparation.

Classification according to Model Work Health and Safety Regulations 2011 (WHS Regulations)

Classification of the substance or mixture	:	SELF-HEATING SUBSTANCES AND MIXTURES - Category 2 ACUTE TOXICITY (inhalation) - Category 4 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A

Section 2. Hazard(s) identification

GHS label elements

Hazard pictograms :

Flame, Exclamation mark

Signal word : **WARNING**

Hazard statements : **Self-heating in large quantities; may catch fire.**
Harmful if inhaled.
Causes serious eye irritation.

Precautionary statements

Prevention : Avoid breathing dust. Wear protective gloves and eye/face protection. Wear eye/face protection. Keep cool. Protect from sunlight. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling.

Response : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage : Store away from other materials. Maintain air gap between stacks.

Disposal : Not applicable.

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Environmental hazards : Very toxic to aquatic life with long lasting effects.

Ecological hazard categories are not mandatory under WHS Regulations. They may be used as supplemental information to a substance or mixture that has been classified on the basis of its health effects or physiochemical properties.
Where the classification of a substance or mixture is solely due to its hazard to the aquatic environment, whether acute or chronic, under WHS it is not considered as hazardous. However, the transport classification according to the ADG code and international regulations is required.
Environmental classification may be mandatory in other countries.

Section 3. Composition and ingredient information

Substance/mixture : Mixture

Ingredient name	% (w/w)	CAS number
copper(II) carbonate--copper(II) hydroxide (1:1)	≥30 - ≤60	12069-69-1
copper sulphide	≥10 - ≤30	1317-40-4
hydrozincite	≥10 - ≤30	12122-17-7
zinc sulphide	≥10 - ≤30	1314-98-3
aluminium oxide	≤10	1344-28-1

Section 3. Composition and ingredient information

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

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. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

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

Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Harmful if inhaled. Unlikely to be hazardous by inhalation unless present as a dust. High concentrations of dust may be irritant to the upper respiratory tract. Dust may enter the lung and be slow to clear. In the metals industry, high concentrations of very finely divided dust containing copper and/or zinc compounds have been known to produce the symptoms of metal fume fever. This condition is characterised by influenza type symptoms occurring a few hours after exposure and lasting for up to 48 hours. However, the handling and use of this product in line with Section 7 is not expected to pose such a risk.

Skin contact : Repeated or prolonged skin contact may cause irritation. May cause physical abrasion in contact with skin.

Ingestion : Ingestion may cause irritation of the gastrointestinal tract.

Over-exposure signs/symptoms

Section 4. First aid measures

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

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.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use water spray or fog.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Self-heating material when in large quantities. May catch fire. Liable to self-heating in contact with air, without energy supply. Self heating at (Deg C): >50 Discharged material may be liable to self heating (See Process Hazards)

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides
metal oxide/oxides

Thermal decomposition will evolve toxic and irritant vapours.

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a 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 (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code : 1Y

Remark : Discharged material may be liable to self heating (See Process Hazards)

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 spilt material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised 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 spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labelled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

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. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Process hazards : Prior to discharge the material may contain residual hydrocarbons. The material should be purged free of hydrocarbons and cooled with an inert gas before it is discharged. The material may also contain deposited carbon and should be regarded as potentially pyrophoric. The material should not be exposed to a reducing atmosphere. Reduction can result in the evolution of large quantities of heat and once reduced, the material should be regarded as pyrophoric.The spent material will be liable to self-heating in contact with air. Pyrophoric and self-heating materials can act as sources of ignition and should be kept away from combustible materials. Contact with air should be minimized. During discharge it is recommended that foam or dry powder fire extinguishers are available to blanket the material if it self-heats. As a minimum, water sprays should be available to cool the material. The action of water on the reduced material may result in the evolution of small quantities of hydrogen. Keep the discharged material away from mineral acids to avoid the generation of hydrogen sulphide.

Conditions for safe storage, including any incompatibilities : Do not store above the following temperature: 50°C (122°F). Store in accordance with local regulations. Store in a segregated and approved area. Eliminate all ignition sources. Store away from other materials. Keep product dry. Keep away from heat and direct sunlight. Keep container in a cool, well-ventilated area. Maintain air gap between stacks/pallets. Keep only in the original container. 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. Contact with combustible material may cause fire. Store away from incompatible materials (see Section 10). See Section 10 for incompatible materials before handling or use.

Additional information : Further advice given in the Puraspec Operating Manual.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
copper(II) carbonate--copper(II) hydroxide (1:1)	**ACGIH TLV (United States, 3/2017).** TWA: 1 mg/m³, (As Cu) 8 hours.
copper sulphide	**EH40/2005 WELs (United Kingdom (UK), 3/2012).** TWA: 1 mg/m³, (As Cu) 8 hours. Form: Dusts and mists STEL: 2 mg/m³, (As Cu) 15 minutes. Form: Dusts and mists
hydrozincite	**DFG MAC-values list (Germany, 7/2015).** TWA: 2 mg/m³ 8 hours. Form: Inhalable fraction PEAK: 4 mg/m³, 4 times per shift, 15 minutes. Form: Inhalable fraction PEAK: 0.4 mg/m³, 4 times per shift, 15 minutes. Form: Respirable fraction TWA: 0.1 mg/m³ 8 hours. Form: Respirable fraction
zinc sulphide	**DFG MAC-values list (Germany, 7/2015).**

Section 8. Exposure controls and personal protection

	TWA: 2 mg/m³ 8 hours. Form: Inhalable fraction PEAK: 4 mg/m³, 4 times per shift, 15 minutes. Form: Inhalable fraction PEAK: 0.4 mg/m³, 4 times per shift, 15 minutes. Form: Respirable fraction TWA: 0.1 mg/m³ 8 hours. Form: Respirable fraction
aluminium oxide	**Safe Work Australia (Australia, 1/2014).** TWA: 10 mg/m³ 8 hours. ***[Air contaminant]***
Respirable dust	**ACGIH TLV (United States).** TWA: 3 mg/m³ 8 hours. ***[Air contaminant]***
Inhalable fraction	**ACGIH TLV (United States).** TWA: 10 mg/m³ 8 hours.

Appropriate engineering controls : Use only with adequate ventilation. Engineering controls may be required to control the primary or secondary risks associated with this product. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Use explosion-proof ventilation equipment.

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.

General information : All personal protective equipment (PPE) should be selected and used under the direction of a trained health and safety professional. PPE should be in compliance with any relevant local or national standard. Where no local or national standards apply, compliance with the relevant EU standard is recommended.
It remains the responsibility of the user to ensure that this product is used safely within the context of their site conditions.

Eye/face protection : Safety eyewear complying with an approved standard (EN 166 or local equivalent) is required during loading and unloading of reactors, cleaning and maintenance operations, and sampling, where exposure to dust, powder or liquid splashes is possible.

Skin protection

Hand protection : Chemical/bio-chemical resistant, impervious gloves complying with an approved chemical standard (EN 374 or local equivalent) should be worn at all times when handling chemical products. For tasks involving physical or mechanical hazards, gloves should also comply with an approved physical standard (EN 388 or local equivalent).
Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. In the case of mixtures, consisting of several substances, the protection

Section 8. Exposure controls and personal protection

time of the gloves cannot be accurately estimated.

Body protection : Safety shoes complying with an approved standard (EN 20346 or equivalent) and a hard hat complying with an approved standard (EN 297 or equivalent) is required during loading and unloading of reactors, cleaning and maintenance operations and sampling.

Other skin protection : A protective suit complying with an approved standard (EN 13982-1 Type 5 or equivalent) should be worn during loading and unloading or reactors, sampling and cleaning and maintenance operations where dermal contact is possible.

Respiratory protection : Use of Respiratory Protective Equipment (RPE) (Particle filter with high efficiency for solid particles (EN 143 or 149, Type P3 or FFP3, Associated Protection Factor (APF) = 20) or local equivalent as a minimum) is required during loading and unloading of reactors, cleaning and maintenance operations, and sampling, where exposure to dust or powder is possible. Air-fed Respiratory Protective Equipment may be used if entry to the reactor is required.

Section 9. Physical and chemical properties

Appearance

Physical state : Solid. [Granular solid.]

Colour : Black.

Odour : Sulphurous. [Slight]

Odour threshold : Not applicable.

pH : Not applicable.

Melting point : Not determined.

Boiling point : Not applicable.

Flash point : Not applicable.

Flammability (solid, gas) : Not classified.

Discharged material may be liable to self heating (See Process Hazards)

Evaporation rate : Not applicable.

Lower and upper explosive (flammable) limits : Not applicable.

Vapour pressure (mm Hg) : Not applicable.

Vapour density : Not applicable.

Relative density : Not applicable.

Bulk Density (g/ml) : 0.8 - 1.3

Solubility : Soluble in the following materials: strong acids

Solubility in water : insoluble in water.

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity (m.Pa.s) : Not applicable.

Section 10. Stability and reactivity

Reactivity : This product, by reaction with air and without energy supply, is liable to self-heat and will ignite when in large amounts and after long periods of time. The spontaneous ignition temperature will be ≤ 50°C for a volume of 27 m3.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Hazardous reactions or instability may occur under certain conditions of storage or use.
Conditions may include the following:
extended contact with air in bulk storage
Reactions may include the following:
risk of causing fire
spontaneous flammability

See Process Hazards section for hazards associated with the discharged material resulting from its intended use.

Conditions to avoid : No specific data.

Incompatible materials : Reactive or incompatible with the following materials:
oxidising agents
Can react with mineral acids to liberate hydrogen sulphide and sulphur dioxide.

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

Product/ingredient name	Result	Species	Dose	Exposure
copper(II) carbonate--copper(II) hydroxide (1:1)	LC50 Inhalation Dusts and mists	Rat	1.2 mg/l	4 hours
	LD50 Oral	Rat	1350 mg/kg	-
zinc sulphide	LD50 Dermal	Rat	>2 g/kg	-
	LD50 Oral	Rat	>5 g/kg	-
PURASPEC 5158	LD50 Oral	Rat	>2000 mg/kg	-

Conclusion/Summary : Harmful if inhaled.
Harmful if inhaled. May be harmful if swallowed. (China, Taiwan & UN GHS Classification)

Irritation/Corrosion

Conclusion/Summary

Skin : Not classified.

Eyes : Causes serious eye irritation.

Respiratory : Not classified.

Sensitisation

Conclusion/Summary

Skin : Not classified.

Section 11. Toxicological information

Respiratory : Not classified.

Mutagenicity

Conclusion/Summary : Not classified.

Carcinogenicity

Conclusion/Summary : Not classified.

Reproductive toxicity

Not available.

Conclusion/Summary : Not classified.

Teratogenicity

Conclusion/Summary : Not classified.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not applicable.

Information on likely routes of exposure : Routes of entry anticipated: Dermal, Inhalation.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Harmful if inhaled. Unlikely to be hazardous by inhalation unless present as a dust. High concentrations of dust may be irritant to the upper respiratory tract. Dust may enter the lung and be slow to clear. In the metals industry, high concentrations of very finely divided dust containing copper and/or zinc compounds have been known to produce the symptoms of metal fume fever. This condition is characterised by influenza type symptoms occurring a few hours after exposure and lasting for up to 48 hours. However, the handling and use of this product in line with Section 7 is not expected to pose such a risk.

Skin contact : Repeated or prolonged skin contact may cause irritation. May cause physical abrasion in contact with skin.

Ingestion : Ingestion may cause irritation of the gastrointestinal tract.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Section 11. Toxicological information

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary : Not classified.

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

Route	ATE value
Inhalation (dusts and mists)	3.593 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
copper(II) carbonate--copper(II) hydroxide (1:1)	Acute LC50 25 ppb Fresh water	Daphnia	48 hours
	Chronic NOEC 7.8 ppb Fresh water	Algae	-
	Chronic NOEC 87 mg/kg dwt Fresh water	Crustaceans	-
	Chronic NOEC 0.23 mg/l	Micro-organism	-
	Chronic NOEC 65.5 mg/kg dwt	Micro-organism	-
zinc sulphide	Acute LC50 >30000 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 1826000 µg/l Fresh water	Fish - Pimephales promelas - Neonate	96 hours
aluminium oxide	EC50 >100 mg/l	Daphnia - magna	48 hours
	IC50 >100 mg/l	Algae - (Selenastrum capricornutum)	72 hours
	LC50 >100 mg/l	Fish - (Trout Trotten)	96 hours

Conclusion/Summary : Very toxic to aquatic life with long lasting effects.

Persistence and degradability

Conclusion/Summary : The methods for determining the biological degradability are not applicable to inorganic substances.

Bioaccumulative potential

Section 12. Ecological information

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 considerations

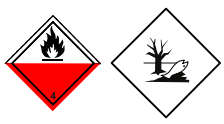
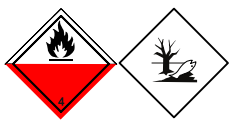
Used material may have different hazards or properties from the new material. This safety data sheet does not apply to the used material.

Disposal methods : The generation of waste should be avoided or minimised 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. Waste packaging should be recycled. 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. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Dispose of through the metal recovery industry.

Container information : Since the emptied container retains product residue, follow label warnings even after it has been emptied.

Section 14. Transport information

	ADG	ADR/RID	IMDG	IATA
UN number	UN3190	UN3190	UN3190	UN3190
UN proper shipping name	Self-heating solid, inorganic, n.o.s. (copper sulphide)	Self-heating solid, inorganic, n.o.s. (copper sulphide)	Self-heating solid, inorganic, n.o.s. (copper sulphide)	Self-heating solid, inorganic, n.o.s. (copper sulphide)
Transport hazard class (es)	4.2 	4.2 	4.2 	4.2 
Packing group	III	III	III	III
Environmental hazards	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.

Section 14. Transport information

Additional information	**Hazchem code** 1Y **Special provisions** 223, 274	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Hazard identification number** 40 **Limited quantity** 0 **Special provisions** 274 **Tunnel code** (E)	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Emergency schedules** F-A, S-J **Special provisions** 223, 274 **IMDG Code Segregation group** 7 - Heavy metals and their salts (including their organometallic compounds)	The environmentally hazardous substance mark may appear if required by other transportation regulations. **Quantity limitation** Passenger and Cargo Aircraft: 25 kg. Packaging instructions: 469. Cargo Aircraft Only: 100 kg. Packaging instructions: 471. Limited Quantities - Passenger Aircraft: Forbidden. Packaging instructions: Forbidden. **Special provisions** A3, A803

Special precautions for user : Not applicable.

Transport in bulk according to Annex II of Marpol and the IBC Code : Not available.

Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

Australia inventory (AICS) : All components are listed or exempted.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 15. Regulatory information

International lists

National inventory

Canada : All components are listed or exempted.

China : All components are listed or exempted.

Europe : All components are listed or exempted.

Japan : **Japan inventory (ENCS)**: All components are listed or exempted.
Japan inventory (ISHL): All components are listed or exempted.

Malaysia : At least one component is not listed.

New Zealand : All components are listed or exempted.

Philippines : Not determined.

Republic of Korea : All components are listed or exempted.

Taiwan : All components are listed or exempted.

Turkey : Not determined.

United States : All components are listed or exempted.

Section 16. Any other relevant information

History

Date of issue/Date of revision : 15/06/2018

Date of previous issue : No previous validation

Version : 1

Prepared by : Johnson Matthey Process Technologies Regulatory Affairs Department

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
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)
NOHSC = National Occupational Health and Safety Commission
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
SELF-HEATING SUBSTANCES AND MIXTURES - Category 2	Expert judgment
ACUTE TOXICITY (inhalation) - Category 4	Calculation method
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A	Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

Section 16. Any other relevant information

Information in this publication is believed to be accurate and is given in good faith, but it is for the Customer to satisfy itself of the suitability for its own particular purpose. Accordingly, Johnson Matthey gives no warranty as to the fitness of the Product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that such exclusion is prevented by law. Freedom under Patent, Copyright and Designs cannot be assumed.
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