



# Johnson Matthey

## SAFETY DATA SHEET

Tetrammine Platinum (II) Nitrate Solution

Product code : 180245

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

#### 1.1 Product identifier

**Product name** : Tetrammine Platinum (II) Nitrate Solution  
**Product code** : 180245  
**Product description** : Not available.  
**Product type** : Liquid.  
**Other means of identification** : Not available.

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

Not applicable.

#### 1.3 Details of the supplier of the safety data sheet

Johnson Matthey Plc,  
Orchard Road,  
Royston,  
Herts SG8 5HE

**e-mail address of person responsible for this SDS** : EHS\_CCR@matthey.com

#### 1.4 Emergency telephone number

##### Supplier

**Telephone number** : +44(0)1763253000  
**Hours of operation** : 24 hours

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

**Product definition** : Mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Ox. Liq. 2, H272  
Aquatic Chronic 3, H412

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

##### Classification according to Directive 1999/45/EC [DPD]

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

**Classification** : O; R8

**Physical/chemical hazards** : Contact with combustible material may cause fire.

See Section 16 for the full text of the R phrases or H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

#### 2.2 Label elements

## SECTION 2: Hazards identification

**Hazard pictograms** :



**Signal word** :

Danger

**Hazard statements** :

May intensify fire; oxidiser.  
Harmful to aquatic life with long lasting effects.

**Precautionary statements**

**Prevention** :

Wear protective gloves or clothing and eye or face protection. Keep away from heat.  
Keep wetted with water.

**Response** :

Not applicable.

**Storage** :

Not applicable.

**Disposal** :

Not applicable.

**Supplemental label elements** :

Explosive when dry. Risk of explosion if heated under confinement.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** :

Not applicable.

**Special packaging requirements**

**Containers to be fitted with child-resistant fastenings** :

Not applicable.

**Tactile warning of danger** :

Not applicable.

### 2.3 Other hazards

**Other hazards which do not result in classification** :

None known.

## SECTION 3: Composition/information on ingredients

**3.2 Mixtures** :

Mixture

Product/ingredient name	Identifiers	%	Classification		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
tetraammineplatinum dinitrate	EC: 243-929-9 CAS: 20634-12-2	>=5 - <10	Xi; R36/38 R53  <b>See Section 16 for the full text of the R-phrases declared above.</b>	Self-react. A, H240 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Aquatic Chronic 3, H412  <b>See Section 16 for the full text of the H statements declared above.</b>	[1] [2]

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, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII

[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

[5] Substance of equivalent concern

## SECTION 3: Composition/information on ingredients

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

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. 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 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 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. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. 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.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

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

#### Potential acute health effects

- Eye contact** : May cause eye irritation.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : May cause skin irritation.
- Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

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

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

- Notes to physician** :
- Specific treatments** : No specific treatment.

**SECTION 5: Firefighting measures****5.1 Extinguishing media**

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

**Unsuitable extinguishing media** : None known.

**5.2 Special hazards arising from the substance or mixture**

**Hazards from the substance or mixture** : May cause fire or explosion when dry. Oxidising material. Risk of explosion if heated under confinement. May intensify fire. In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
nitrogen oxides  
metal oxide/oxides

**5.3 Advice for firefighters**

**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. First move people out of line-of-sight of the scene and away from windows. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Fight fire from protected location or maximum possible distance. Do not fight fire when it reaches the material. Withdraw from fire and let it burn.

**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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. Fire-fighters' protective clothing will only provide limited protection.

**SECTION 6: Accidental release measures****6.1 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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. 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".

**6.2 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). Water polluting material. May be harmful to the environment if released in large quantities.

**6.3 Methods and materials for containment and cleaning up**

**Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

## SECTION 6: Accidental release measures

**Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spill product.

**6.4 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

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 7.1 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. Avoid breathing vapour or mist. Do not allow to dry out. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Keep away from clothing, incompatible materials and combustible materials. Keep away from heat. 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.

### 7.2 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 away from heat. Separate from reducing agents and combustible materials. 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.

#### Seveso II Directive - Reporting thresholds (in tonnes)

##### Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
P8: Oxidizing liquids and solids	50	200
C3: Oxidising	50	200

### 7.3 Specific end use(s)

**Recommendations** : Not available.

**Industrial sector specific solutions** : Not available.

## SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker or exposure or environmental releases.

### 8.1 Control parameters

#### Occupational exposure limits

Product/ingredient name	Exposure limit values
tetraammineplatinum dinitrate	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011).</b> TWA: 0.002 mg/m <sup>3</sup> , (as Pt) 8 hours.

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

#### DNELs/DMELs

No DNELs/DMELs available.

#### PNECs

No PNECs available

### 8.2 Exposure controls

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

#### 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. 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**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.

**SECTION 8: Exposure controls/personal protection**

- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- 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.

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****Appearance**

- Physical state** : Liquid.
- Colour** : Colourless.
- Odour** : Not available.
- Odour threshold** : Not available.
- pH** : 6.5
- Melting point/freezing point** : Not available.
- Initial boiling point and boiling range** : Not available.
- Flash point** : Not available.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Upper/lower flammability or explosive limits** : Not available.
- Vapour pressure** : Not available.
- Vapour density** : Not available.
- Relative density** : Not available.
- Solubility(ies)** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Not available.
- Explosive properties** : Not available.
- Oxidising properties** : Not available.
- Minimum ignition energy (mJ)** : Not available.

**9.2 Other information**

No additional information.

**SECTION 10: Stability and reactivity**

- 10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- 10.2 Chemical stability** : The product is stable.

## SECTION 10: Stability and reactivity

- 10.3 Possibility of hazardous reactions** : Hazardous reactions or instability may occur under certain conditions of storage or use.  
 Conditions may include the following:  
 loss of water  
 contact with combustible materials  
 heating under confinement  
 Reactions may include the following:  
 risk of explosion
- 10.4 Conditions to avoid** : Do not allow to dry out. Drying on clothing or other combustible materials may cause fire.
- 10.5 Incompatible materials** : Reactive or incompatible with the following materials:  
 combustible materials  
 reducing materials
- 10.6 Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
tetraammineplatinum dinitrate	LD50 Oral	Rat	>5000 mg/kg	-

**Conclusion/Summary** : Not available.

#### Acute toxicity estimates

Not available.

#### Irritation/Corrosion

**Conclusion/Summary** : Not available.

#### Sensitisation

**Conclusion/Summary** : Not available.

#### Mutagenicity

**Conclusion/Summary** : Not available.

#### Carcinogenicity

**Conclusion/Summary** : Not available.

#### Reproductive toxicity

**Conclusion/Summary** : Not available.

#### Teratogenicity

**Conclusion/Summary** : 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



## SECTION 11: Toxicological information

<b>Eye contact</b>	: May cause eye irritation.
<b>Inhalation</b>	: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
<b>Skin contact</b>	: May cause skin irritation.
<b>Ingestion</b>	: No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

<b>Eye contact</b>	: No specific data.
<b>Inhalation</b>	: No specific data.
<b>Skin contact</b>	: No specific data.
<b>Ingestion</b>	: No specific data.

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

#### Short term exposure

<b>Potential immediate effects</b>	: Not available.
<b>Potential delayed effects</b>	: Not available.

#### Long term exposure

<b>Potential immediate effects</b>	: Not available.
<b>Potential delayed effects</b>	: Not available.

#### Potential chronic health effects

Not available.

<b>Conclusion/Summary</b>	: Not available.
<b>General</b>	: No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: No known significant effects or critical hazards.
<b>Mutagenicity</b>	: No known significant effects or critical hazards.
<b>Teratogenicity</b>	: No known significant effects or critical hazards.
<b>Developmental effects</b>	: No known significant effects or critical hazards.
<b>Fertility effects</b>	: No known significant effects or critical hazards.

<b>Other information</b>	: Not available.
<b>Other adverse symptoms</b>	: No known significant effects or critical hazards.

## SECTION 12: Ecological information

### 12.1 Toxicity

<b>Conclusion/Summary</b>	: Not available.
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### 12.2 Persistence and degradability

<b>Conclusion/Summary</b>	: Not available.
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### 12.3 Bioaccumulative potential

Not available.

### 12.4 Mobility in soil

<b>Soil/water partition coefficient (K<sub>oc</sub>)</b>	: Not available.
<b>Mobility</b>	: Not available.

## SECTION 12: Ecological information

### 12.5 Results of PBT and vPvB assessment

- PBT** : Not applicable.  
**vPvB** : Not applicable.

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

## SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 13.1 Waste treatment methods

#### Product

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Empty containers or liners may retain some product residues. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Return accumulated waste material to the refinery for metal recovery, or dispose of in accordance with local and national regulations.





**Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.

#### Packaging

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

**Special precautions** : 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.

## SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
<b>14.1 UN number</b>	UN3139	UN3139	UN3139	UN3139
<b>14.2 UN proper shipping name</b>	Oxidizing liquid, n.o.s. (Tetrammine Platinum (II) Nitrate Solution)	OXIDIZING LIQUID, N.O.S.(Tetrammine Platinum (II) Nitrate Solution)	OXIDIZING LIQUID, N.O.S.(Tetrammine Platinum (II) Nitrate Solution)	Oxidizing liquid, n.o.s. (Tetrammine Platinum (II) Nitrate Solution)
<b>14.3 Transport hazard class(es)</b>	5.1 	5.1 	5.1 	5.1 
<b>14.4 Packing group</b>	II	II	II	II
<b>14.5 Environmental hazards</b>	No.	No.	No.	No.
<b>Additional information</b>	<u>Limited quantity</u> 1 L  <u>Special provisions</u> 274  <u>Tunnel code</u> (E)	-	<u>Emergency schedules (EmS)</u> F-A, S-Q  <u>Special provisions</u> 274	<u>Passenger and Cargo Aircraft</u> Quantity limitation: 1 L Packaging instructions: 550 <u>Cargo Aircraft Only</u> Quantity limitation: 5 L Packaging instructions: 554 <u>Limited Quantities -</u>

Tetrammine Platinum (II) Nitrate Solution

**SECTION 14: Transport information**

				<p><b>Passenger Aircraft</b> Quantity limitation: 0.5 L Packaging instructions: Y540</p> <p><b>Special provisions</b> A3</p>
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**14.6 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.

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** : Not available.

**SECTION 15: Regulatory information**

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**  
**EU Regulation (EC) No. 1907/2006 (REACH)**

**Annex XIV - List of substances subject to authorisation**

**Annex XIV**

None of the components are listed.

**Substances of very high concern**

None of the components are listed.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Not applicable.

**Other EU regulations**

**Europe inventory** : All components are listed or exempted.

**Seveso II Directive**

This product is controlled under the Seveso II Directive.

**Danger criteria**

<b>Category</b>
P8: Oxidizing liquids and solids C3: Oxidising

**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 Inform Consent (PIC)**

Not listed.

**UNECE Aarhus Protocol on POPs and Heavy Metals**

Not listed.

## SECTION 15: Regulatory information

### International lists

#### National inventory

Australia	: Not determined.
Canada	: Not determined.
China	: Not determined.
Japan	: Not determined.
Malaysia	: Not determined.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: All components are listed or exempted.
Taiwan	: Not determined.
United States	: <b>United States inventory (TSCA 8b)</b> : Not determined.

**15.2 Chemical Safety Assessment** : This product contains substances for which Chemical Safety Assessments are still required.

## SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

**Abbreviations and acronyms** : ATE = Acute Toxicity Estimate  
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
 DMEL = Derived Minimal Effect Level  
 DNEL = Derived No Effect Level  
 EUH statement = CLP-specific Hazard statement  
 PBT = Persistent, Bioaccumulative and Toxic  
 PNEC = Predicted No Effect Concentration  
 RRN = REACH Registration Number  
 vPvB = Very Persistent and Very Bioaccumulative

### Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Ox. Liq. 2, H272 Aquatic Chronic 3, H412	Expert judgment Expert judgment

**Full text of abbreviated H statements** : H240 Heating may cause an explosion.  
 H272 May intensify fire; oxidiser.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H412 Harmful to aquatic life with long lasting effects.

**Full text of classifications [CLP/GHS]** : Aquatic Chronic 3, H412 LONG-TERM AQUATIC HAZARD - Category 3  
 Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2  
 Ox. Liq. 2, H272 OXIDIZING LIQUIDS - Category 2  
 Self-react. A, H240 SELF-REACTIVE SUBSTANCES AND MIXTURES - Type A  
 Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2

**Full text of abbreviated R phrases** : R8- Contact with combustible material may cause fire.  
 R36/38- Irritating to eyes and skin.  
 R53- May cause long-term adverse effects in the aquatic environment.

**Full text of classifications [DSD/DPD]** : O - Oxidising  
 Xi - Irritant

**Date of printing** : 23/02/2015.

**Date of issue/ Date of revision** : 23/02/2015.

**Date of previous issue** : No previous validation.

**Version** : 0.01

## SECTION 16: Other information

### Notice to reader

*This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is given in good faith, being based on the latest information available to Johnson Matthey PLC and is to the best of Johnson Matthey PLC's knowledge and belief, accurate and reliable at the time of preparation. However, no representation, warranty or guarantee is made as to the accuracy, liability or completeness and Johnson Matthey PLC assumes no responsibility therefore, and disclaims any liability for any loss, damage or injury howsoever arising (including in respect of any claim brought by any third party) incurred using this information. The product is supplied on the condition that the user accepts responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. Freedom from patent or any other proprietary rights of any third party must not be assumed.*

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