Safety Data Sheet
according to WHS Regulations

Printing date 19.02.2019 *Version number 1* *Revision: 19.02.2019*

Hazardous according to criteria of Australian Safety and Compensation Council.

1 Identification

· ***Product identifier***

· ***Product name:*** **Manganese Standard: 10000 µg/mL Mn in 5% HNO3 [500ml bottle]**

· ***Part number:*** *5190-8415*
· ***Relevant identified uses of the substance or mixture and uses advised against***
No further relevant information available.
· ***Application of the substance / the mixture*** *Reagents and Standards for Analytical Chemical Laboratory Use*

· ***Details of the supplier of the safety data sheet***
· ***Manufacturer/Supplier:***
Agilent Technologies Australia Pty Ltd *Tel: 1800 802 402*
679 Springvale Road
Mulgrave Victoria 3170,
Australia

· ***Further information obtainable from:*** *e-mail: pdl-msds_author@agilent.com*
· ***Emergency telephone number:*** *CHEMTREC®: +(61)-290372994*

2 Hazard(s) Identification

· ***Classification of the substance or mixture***

flame over circle

Ox. Liq. 3 *H272* *May intensify fire; oxidiser.*

corrosion

Met. Corr.1 *H290* *May be corrosive to metals.*
Skin Corr. 1B *H314* *Causes severe skin burns and eye damage.*
Eye Dam. 1 *H318* *Causes serious eye damage.*

· ***Label elements***
· ***GHS label elements***
The product is classified and labelled according to the Globally Harmonised System (GHS).
· ***Hazard pictograms***

GHS03 GHS05

· ***Signal word*** *Danger*

· ***Hazard-determining components of labelling:***
Nitric acid
Manganese(II) nitrate hexahydrate

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· ***Hazard statements***
H272 May intensify fire; oxidiser.
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
· ***Precautionary statements***

P221	*Take any precaution to avoid mixing with combustibles.*
P280	*Wear protective gloves/protective clothing/eye protection/face protection.*
P303+P361+P353	*IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*
P305+P351+P338	*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
P310	*Immediately call a POISON CENTER/doctor.*
P405	*Store locked up.*
P501	*Dispose of contents/container in accordance with local/regional/national/international regulations.*

· ***Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*

3 Composition and Information on Ingredients

· ***Chemical characterisation: Mixtures***
· ***Description:*** *Aqueous solution.*

· ***Dangerous components:***

CAS: 7697-37-2 *RTECS: QU5775000*	*Nitric acid* *Ox. Liq. 2, H272; Met. Corr.1, H290; Skin Corr. 1A, H314*	*≥5-<10%*
CAS: 17141-63-8 *RTECS: OM2360000*	*Manganese(II) nitrate hexahydrate* *Ox. Sol. 3, H272; STOT RE 2, H373; Skin Corr. 1C, H314; Eye Dam. 1, H318; Acute Tox. 4, H302; Aquatic Acute 3, H402; Aquatic Chronic 3, H412*	*≥1-<2%*

· ***Additional information:***
The concentration of the acid stated in this SDS is calculated as an absolute mass concentration (%w/v). This is less than the acid concentration stated on the product label and COA, which reflects a percent value of the commercially available concentrated aqueous form of the acid.
For the wording of the listed hazard phrases refer to section 16.

4 First Aid Measures

· ***Description of first aid measures***
· ***General information:*** *Immediately remove any clothing soiled by the product.*
· ***After inhalation:*** *Supply fresh air; consult doctor in case of complaints.*
· ***After skin contact:***
Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.
· ***After eye contact:*** *Rinse opened eye for several minutes under running water. Then consult a doctor.*
· ***After swallowing:*** *Rinse mouth. Do not induce vomiting.*
· ***Information for doctor:***
· ***Most important symptoms and effects, both acute and delayed*** *No further relevant information available.*

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· ***Indication of any immediate medical attention and special treatment needed***
No further relevant information available.

5 Fire Fighting Measures

· ***Extinguishing media***
· ***Suitable extinguishing agents:*** *Use fire extinguishing methods suitable for surrounding conditions.*
· ***Special hazards arising from the substance or mixture***
During heating or in case of fire poisonous gases are produced.
· ***Advice for firefighters***
· ***Protective equipment:***
HazChem Code: 2R
Mouth respiratory protective device.
Wear self-contained respiratory protective device.

6 Accidental Release Measures

· ***Personal precautions, protective equipment and emergency procedures***
Mount respiratory protective device.
Wear protective equipment. Keep unprotected persons away.
· ***Environmental precautions:*** *Do not allow to enter sewers/ surface or ground water.*
· ***Methods and material for containment and cleaning up:***
Use neutralising agent.
Dispose of contaminated material as waste according to item 13.
Ensure adequate ventilation.
Absorb liquid components with liquid-binding material.
DO NOT USE SAWDUST.
· ***Reference to other sections***
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and Storage

· ***Handling:***
· ***Precautions for safe handling***
Ensure good ventilation/extraction at the workplace.
Store in cool, dry place in tightly closed receptacles.
Prevent formation of aerosols.
· ***Information about fire - and explosion protection:***
Protect from heat.
Keep respiratory protective device available.

· ***Conditions for safe storage, including any incompatibilities***
· ***Storage:***
· ***Requirements to be met by storerooms and receptacles:***
Please refer to the manufacturer's certificate for specific storage and transport temperature conditions.
Store only in the original receptacle unless other advice is given on the CoA.
Keep container in a well-ventilated place. Keep away from sources of ignition and heat.
· ***Information about storage in one common storage facility:*** *Store away from foodstuffs.*

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· ***Further information about storage conditions:***
Keep container tightly sealed.
Protect from heat and direct sunlight.
· ***Specific end use(s)*** *No further relevant information available.*

8 Exposure controls and personal protection

· ***Additional information about design of technical facilities:*** *No further data; see item 7.*

· ***Control parameters***

· ***Ingredients with limit values that require monitoring at the workplace:***	
CAS: 7697-37-2 Nitric acid	
NES	*Short-term value: 10 mg/m³, 4 ppm* *Long-term value: 5.2 mg/m³, 2 ppm*
WES	*Short-term value: 10 mg/m³, 4 ppm* *Long-term value: 5.2 mg/m³, 2 ppm*

· ***Additional information:*** *Lists used were valid at the time of SDS preparation.*

· ***Exposure controls***
· ***Personal protective equipment:***
· ***General protective and hygienic measures:***
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
· ***Respiratory protection:***
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
· ***Protection of hands:***
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374

Protective gloves

· ***Material of gloves***
PVC gloves
Neoprene gloves
· ***Penetration time of glove material***
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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· ***Eye protection:***

Tightly sealed goggles

9 Physical and Chemical Properties

· ***Information on basic physical and chemical properties***	
· ***General Information***	
· ***Appearance:***	
Form:	*Liquid*
Colour:	*Colourless*
· ***Odour:***	*Odourless*
· ***Odour threshold:***	*Not determined.*
· ***pH-value:***	*<2*
· ***Change in condition***	
Melting point/freezing point:	*Not determined.*
Initial boiling point and boiling range:	*100 °C*
· ***Flash point:***	*Not applicable.*
· ***Flammability (solid, gas):***	*Not determined.*
· ***Ignition temperature:***	*Not determined*
· ***Decomposition temperature:***	*Not determined.*
· ***Auto-ignition temperature:***	*Product is not selfigniting.*
· ***Explosive properties:***	*Not determined.*
· ***Explosion limits:***	
Lower:	*Not determined.*
Upper:	*Not determined.*
· ***Vapour pressure at 20 °C:***	*23 hPa*
· ***Density at 20 °C:***	*1.08945 g/cm³*
· ***Relative density***	*Not determined.*
· ***Vapour density***	*Not determined.*
· ***Evaporation rate***	*Not determined.*
· ***Solubility in / Miscibility with water:***	*Not miscible or difficult to mix.*
· ***Partition coefficient: n-octanol/water:***	*Not determined.*
· ***Viscosity:***	
Dynamic:	*Not determined.*
Kinematic:	*Not determined.*
· ***Other information***	*No further relevant information available.*

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10 Stability and Reactivity

· ***Reactivity***
Stable under normal conditions.
No further relevant information available.
· ***Chemical stability*** *Stable under normal conditions.*
· ***Thermal decomposition / conditions to be avoided:***
Formation of toxic gases is possible during heating or in case of fire.
· ***Possibility of hazardous reactions*** *No dangerous reactions known.*
· ***Conditions to avoid*** *Heat.*
· ***Incompatible materials:***
Strong oxidizing agents.
Metals.
· ***Hazardous decomposition products:*** *Formation of toxic gases is possible during heating or in case of fire.*

11 Toxicological Information

· ***Information on toxicological effects***
· ***Acute toxicity***

· ***LD/LC50 values relevant for classification:***		
CAS: 7697-37-2 Nitric acid		
Inhalative	*LC50/4 h*	*130 mg/l (rat)*

· ***Primary irritant effect:***
· ***Skin corrosion/irritation*** *Caustic effect on skin and mucous membranes.*
· ***Serious eye damage/irritation***
Strong caustic effect.
Strong irritant with the danger of severe eye injury.
· ***Respiratory or skin sensitisation*** *Based on available data, the classification criteria are not met.*
· ***Additional toxicological information:***
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Corrosive
Irritant
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

12 Ecological Information

· ***Toxicity***

· ***Aquatic toxicity:***	
CAS: 7697-37-2 Nitric acid	
LC50/48	*180 mg/l (crustacean)*

· ***Persistence and degradability*** *No further relevant information available.*
· ***Behaviour in environmental systems:***
· ***Bioaccumulative potential*** *No further relevant information available.*
· ***Mobility in soil*** *No further relevant information available.*

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· ***Additional ecological information:***
· ***General notes:***
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product to reach ground water, water course or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.
· ***Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*
· ***Other adverse effects*** *No further relevant information available.*

13 Disposal considerations

· ***Waste treatment methods***
· ***Recommendation***
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· ***Uncleaned packaging:***
· ***Recommendation:*** *Dispose of in accordance with national regulations.*

14 Transport information

· ***UN-Number***	
· ***ADG, IMDG, IATA***	*UN2031*
· ***ADG***	*2031 NITRIC ACID solution*
· ***IMDG, IATA***	*NITRIC ACID solution*
· ***Transport hazard class(es)***	
· ***ADG, IMDG, IATA***	
· ***Class***	*8 Corrosive substances.*
· ***Label***	*8*
· ***Packing group***	
· ***ADG, IMDG, IATA***	*II*
· ***Environmental hazards:***	*Not applicable.*
· ***Special precautions for user***	*Warning: Corrosive substances.*
· ***Danger code (Kemler):***	*80*
· ***EMS Number:***	*F-A,S-B*
· ***Segregation groups***	*Acids*
· ***Stowage Category***	*B*
· ***Stowage Code***	*SW2 Clear of living quarters.*
· ***Transport in bulk according to Annex II of Marpol and the IBC Code***	*Not applicable.*

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· ***Transport/Additional information:***

· ***ADG***	
· ***Limited quantities (LQ)***	*1L*
· ***Excepted quantities (EQ)***	*Code: E2* *Maximum net quantity per inner packaging: 30 ml* *Maximum net quantity per outer packaging: 500 ml*
· ***Transport category***	*2*
· ***Tunnel restriction code***	*E*
· ***Remarks:***	*HazChem Code: 2R*
· ***UN "Model Regulation":***	*UN 2031 NITRIC ACID SOLUTION, 8, II*

15 Regulatory information

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

· ***Australian Inventory of Chemical Substances***

All ingredients are listed.

· ***Standard for the Uniform Scheduling of Medicines and Poisons***

CAS: 7697-37-2	*Nitric acid*	*S5, S6*

· ***Hazard pictograms***

GHS03 GHS05

· ***Signal word*** *Danger*

· ***Hazard-determining components of labelling:***
Nitric acid
Manganese(II) nitrate hexahydrate

· ***Hazard statements***
H272 May intensify fire; oxidiser.
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

· ***Precautionary statements***

P221	*Take any precaution to avoid mixing with combustibles.*
P280	*Wear protective gloves/protective clothing/eye protection/face protection.*
P303+P361+P353	*IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*
P305+P351+P338	*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
P310	*Immediately call a POISON CENTER/doctor.*
P405	*Store locked up.*
P501	*Dispose of contents/container in accordance with local/regional/national/international regulations.*

· ***Directive 2012/18/EU***
· ***Named dangerous substances - ANNEX I*** *None of the ingredients is listed.*

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· ***Seveso category*** *P8 OXIDISING LIQUIDS AND SOLIDS*
· ***Qualifying quantity (tonnes) for the application of lower-tier requirements*** *50 t*
· ***Qualifying quantity (tonnes) for the application of upper-tier requirements*** *200 t*
· ***Chemical safety assessment:*** *A Chemical Safety Assessment has not been carried out.*

16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

· ***Relevant phrases***
H272 May intensify fire; oxidiser.
H290 May be corrosive to metals.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H373 May cause damage to organs through prolonged or repeated exposure.
H402 Harmful to aquatic life.
H412 Harmful to aquatic life with long lasting effects.

· ***Abbreviations and acronyms:***
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Ox. Liq. 2: Oxidizing liquids – Category 2
Ox. Liq. 3: Oxidizing liquids – Category 3
Ox. Sol. 3: Oxidizing solids – Category 3
Met. Corr.1: Corrosive to metals – Category 1
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Skin Corr. 1C: Skin corrosion/irritation – Category 1C
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Aquatic Acute 3: Hazardous to the aquatic environment - acute aquatic hazard – Category 3
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

· ***Sources***
Tables 3.1 and 3.2 from Annex 6 of EC 1272/2008, EC 1907/2006, EH40/2005 as amended 2011, Registry of Toxic Effects of Chemical Substances (RTECS), The Dictionary of Substances and their Effects, 1st Edition, IUCLID.

· ***Data compared to the previous version altered.*** *All sections have been updated.*