

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

1.1. Product identifier

Product form	: Substance
Trade name	: Brickmax
EC-No.	: 215-266-5
CAS-No.	: 1317-35-7
REACH registration No	: 01-2119448167-35-0005
Product code	: 108420
Product group	: Trade product

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

1.2.1. Relevant identified uses

Main use category	: Industrial use
Industrial/Professional use spec	: Industrial
Use of the substance/mixture	: Surface color for heavy clay industry

1.2.2. Uses advised against

Restrictions on use	: None known
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1.3. Details of the supplier of the safety data sheet

Prince Minerals SA (pty) Ltd
 18 Aarden Place
 4126 Amamzimtoti - South Africa
 T +27 31 903 3645
salesafrica@princecorp.com

1.4. Emergency telephone number

Emergency number	: For emergencies only. Call CHEMTREC (24h) South Africa - 0-800-983-611 United Kingdom- +(44)-870-8200418 U.S.A.- +(1)-703-7415970
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Reproductive toxicity, Category 2	H361
Full text of H statements : see section 16	

Adverse physicochemical, human health and environmental effects

Suspected of damaging fertility or the unborn child.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



GHS08

Signal word (CLP)	: Warning
Hazard statements (CLP)	: H361 - Suspected of damaging fertility or the unborn child.
Precautionary statements (CLP)	: P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P308+P313 - IF exposed or concerned: Get medical advice/attention. P405 - Store locked up. P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

No additional information available

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SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Trimanganese tetraoxide	(CAS-No.) 1317-35-7 (EC-No.) 215-266-5 (REACH-no) 01-2119448167-35-0005	100	Repr. 2, H361

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: IF exposed or concerned: Get medical advice/attention.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.

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

Chronic symptoms : Suspected of damaging fertility. Suspected of damaging the unborn child.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam.

5.2. Special hazards arising from the substance or mixture

Explosion hazard	: No direct explosion hazard.
Reactivity in case of fire	: Fine dust dispersed in air may ignite.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment	: Collect all waste in suitable and labelled containers and dispose according to local legislation.
Methods for cleaning up	: Mechanically recover the product. Notify authorities if product enters sewers or public waters.
Other information	: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Ensure good ventilation of the work station. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment.
Hygiene measures	: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Brickmax (1317-35-7)		
EU	Local name	Manganese (II,III) oxide
EU	IOELV TWA (mg/m ³)	0.2 mg/m ³ (inhalable fraction) 0.05 mg/m ³ (respirable fraction)
EU	Notes	(Year of adoption 2011)
Austria	Local name	Mangan und seine anorganischen
Austria	MAK (mg/m ³)	0.5 mg/m ³
Austria	MAK Short time value (mg/m ³)	2 mg/m ³
Belgium	Local name	Manganèse et ses composés (en Mn) # Mangaan, en - verbindingen (als Mn)
Belgium	Limit value (mg/m ³)	0.2 mg/m ³
Bulgaria	Local name	Манган
Bulgaria	OEL TWA (mg/m ³)	0.3 mg/m ³ оксид и неорганични съединения (като манган)
Bulgaria	OEL STEL (mg/m ³)	3 mg/m ³ оксид и неорганични съединения (като манган)
Croatia	Local name	Mangan i njegovi anorganski spojevi (kao Mn)
Croatia	GVI (granična vrijednost izloženosti) (mg/m ³)	0.5 mg/m ³
Czech Republic	Local name	Mangan
Czech Republic	Expoziční limity (PEL) (mg/m ³)	1 mg/m ³
Czech Republic	Expoziční limity (NPK-P) (mg/m ³)	2 mg/m ³
Denmark	Local name	Mangan, pulver, støv og uorganiske forbindelser
Denmark	Grænseværdie (langvarig) (mg/m ³)	0.2 mg/m ³ beregnet som Mn 0.1 mg/m ³ respirabel
Denmark	Anmærkninger (DK)	E (betyder, at stoffet har en EF-grænseværdi)
Estonia	Local name	Mangaan ja anorgaanilised ühendid (arvutatudmangaanile) kogutolm
Estonia	OEL TWA (mg/m ³)	0.2 mg/m ³
Finland	Local name	Mangaani-(II,III)-oksidi
Finland	HTP-arvo (8h) (mg/m ³)	0.02 mg/m ³ Mn, alveolijae
Finland	Huomautus (FI)	Mn, alveolijae
France	Local name	Manganèse (tétraoxyde de tri-)
France	VME (mg/m ³)	1 mg/m ³
France	Note (FR)	Valeurs recommandées/admises
Germany	TRGS 900 Local name	Mangan und seine anorganischen Verbindungen
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	0.02 mg/m ³ A (mg/m ³) 0.2 mg/m ³ E (mg/m ³)
Germany	TRGS 900 Remark	DFG, Y, 10, 20
Gibraltar	Eight hours mg/m ³	25 mg/m ³
Gibraltar	Eight hours ppm	10 ppm
Gibraltar	Short-term mg/m ³	50 mg/m ³
Gibraltar	Short-term ppm	20 ppm

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Brickmax (1317-35-7)		
Hungary	Local name	MANGÁN ÉS SZERVETLEN SÓI (mangán-tetraoxid kivételével, Mn-ra számítva)
Hungary	AK-érték	5 mg/m ³
Hungary	CK-érték	20 mg/m ³
Ireland	Local name	Trimanganese tetraoxide
Ireland	OEL (8 hours ref) (mg/m ³)	0.5 mg/m ³
Ireland	OEL (15 min ref) (mg/m ³)	3 mg/m ³
Latvia	Local name	Mangānsmetināšanas aerosolos(kondensācijas aerosols)
Latvia	OEL TWA (mg/m ³)	0.1 mg/m ³
Lithuania	Local name	Manganas ir neorganiniai jo junginiai
Lithuania	IPRV (mg/m ³)	0.2 mg/m ³ (kaip Mn); įkvepiamoji frakcija 0.05 mg/m ³ (kaip Mn); alveolinė frakcija
Luxembourg	Local name	Manganèse et ses composés inorganiques (exprimés en manganèse)
Luxembourg	OEL TWA (mg/m ³)	0.2 mg/m ³ Fraction inhalable 0.05 mg/m ³ Fraction alvéolaire
Malta	Local name	Manganese and inorganic manganese compounds (as manganese)
Malta	OEL TWA (mg/m ³)	0.2 mg/m ³ (inhalable fraction) 0.05 mg/m ³ (respirable fraction)
Poland	Local name	Mangan i jego związki nieorganiczne w przeliczeniu na Mn
Poland	NDS (mg/m ³)	0.3 mg/m ³
Poland	Remark (PL)	Frakcja wdychalna – frakcja aerozolu wnikająca przez nos i usta, która po zdeponowaniu w drogach oddechowych stwarza zagrożenie dla zdrowia. Frakcja respirabilna – frakcja aerozolu wnikająca do dróg oddechowych, która stwarza zagrożenie dla zdrowia po zdeponowaniu w obszarze wymiany gazowej.
Portugal	Local name	Manganês e compostos inorgânicos, expressos em Mn
Portugal	OEL TWA (mg/m ³)	0.02 mg/m ³ R (Fração respirável) 0.1 mg/m ³ I (Fração inalável)
Romania	Local name	Mangan
Romania	OEL TWA (mg/m ³)	0.5 mg/m ³
Romania	OEL STEL (mg/m ³)	3 mg/m ³
Slovakia	Local name	Mangán a jeho anorganické zlúčeniny
Slovakia	NPHV (priemerná) (mg/m ³)	0.5 mg/m ³
Slovenia	Local name	mangan in njegove anorganske spojine vključno strimanganovim tetraoksidom
Slovenia	OEL TWA (mg/m ³)	0.5 mg/m ³
Slovenia	OEL STEL (mg/m ³)	2 mg/m ³
Slovenia	KTV factor SL	4
Spain	Local name	Manganeso
Spain	VLA-ED (mg/m ³)	0.2 mg/m ³ elemental. Fracción inhalable 0.2 mg/m ³ Compuestos inorgánicos de Manganeso, como Mn. Fracción inhalable 0.05 mg/m ³ elemental. Fracción respirable 0.05 mg/m ³ Compuestos inorgánicos de manganeso, como Mn. Fracción respirable
Spain	Notes	VLI, d (Véase UNE EN 481: Atmósferas en los puestos de trabajo. Definición de las fracciones por el tamaño de las partículas para la medición de aerosoles).

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Sweden	Local name	Mangan, och oorg. föreningar (som Mn)
Sweden	nivågränsvärde (NVG) (mg/m ³)	0.2 mg/m ³ totaldamm 0.1 mg/m ³ respirabelt damm
Sweden	Anmärkning (SE)	2 (Med totaldamm menas de partiklar (aerosoler) som fastnar på ett filter i den provtagare som beskrivs i Metodserien, Provtagning av totaldamm och respirabelt damm, Metod nr 1010, Arbetskyddsstyrelsen, numera Arbetsmiljöverket. Filterdiametern är normalt 37 mm, men kan även vara 25 mm. Trots sitt namn provtas inte den totala mängden luftburna partiklar med denna metod)
United Kingdom	Local name	Manganese
United Kingdom	WEL TWA (mg/m ³)	0.5 mg/m ³ and its inorganic compounds (as Mn)
Switzerland	Local name	Mangan und seine anorg. Verbindungen (als Mn berechnet)
Switzerland	MAK (mg/m ³)	0.5 mg/m ³ 0.5 mg/m ³ 0.5 mg/m ³
Switzerland	Remark	e(mg/m ³) - B P SS _c - ZNS ^{KT HU} - NIOSH
USA - ACGIH	Local name	Manganese
USA - ACGIH	ACGIH TWA (mg/m ³)	0.02 mg/m ³
USA - ACGIH	Remark (ACGIH)	CNS impair; A4 (Not classifiable as a Human Carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories)

Brickmax (1317-35-7)

DNEL/DMEL (Workers)

Acute - systemic effects, dermal	No-threshold effect and/or no dose-response information available
Acute - systemic effects, inhalation	No-threshold effect and/or no dose-response information available
Acute - local effects, dermal	No-threshold effect and/or no dose-response information available
Acute - local effects, inhalation	0.2 mg/m ³
Long-term - systemic effects, dermal	0.00414 mg/kg bodyweight/day
Long-term - local effects, dermal	Insufficient data available
Long-term - systemic effects, inhalation	0.2 mg/m ³
Long-term - local effects, inhalation	0.2 mg/m ³

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection.

Environmental exposure controls:

Avoid release to the environment.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Powder.
Colour	: brown.
Odour	: odourless.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: Not applicable

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

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 (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

Brickmax (1317-35-7)

LD50 oral	> 2000 mg/kg bodyweight
LC50 inhalation rat (Dust/Mist - mg/l/4h)	5000 mg/l/4h

Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met)
Serious eye damage/irritation	: Not classified (Based on available data, the classification criteria are not met)
Respiratory or skin sensitisation	: Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)

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Reproductive toxicity	: No two -generation study exist for this substance. However, a Two-Generation Reprotoxicity study on the male/female rats using a very soluble Mn salt (MnCl ₂) via inhalation (OECD guideline 416, GLP) reported no reproductive toxicity concerns (McGough & Jardine, 2016). A Prenatal-developmental toxicity study on the substance Mn ₃ O ₄ via oral exposure (OECD 414, GLP) reported minor abnormalities to the developing child (see section 2) with NOEL for maternal toxicity of 750 mg/kg/day and NOAEL for fetuses of 250mg/Kg/bw (Armour G, 2018)
STOT-single exposure	: Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure	: Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard	: Not classified (Lack of data)
Potential adverse human health effects and symptoms	: Although the product is not classified as hazardous this material contains manganese compounds. Manganese may enter the body via the lungs or digestive tract, the pulmonary route being the most common and presents the greatest danger. Dust from the atmosphere or from contaminated hands may also enter the mouth and be swallowed. Absorbed manganese accumulates in the blood until a certain threshold value is exceeded after which further absorption leads to deposition in the majority of the body's organs and chronic manganese poisoning results. Chronic occupational poisoning affects the central nervous system. The initial stage of the disease is the most difficult to detect but it is the most important as early removal from the source of exposure may arrest the course of the disease. Symptoms include loss of weight, loss of appetite, headaches, somnolence, indifference and apathy. Although manganese poisoning is an industrial disease affecting the central nervous system, its occurrence is extremely rare. Manganese poisoning is thought to arise only after ingestion of substantial quantities over prolonged periods.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Acute aquatic toxicity	: Not classified
Chronic aquatic toxicity	: Not classified

Brickmax (1317-35-7)	
LC50 fish 1	1000 g/l OECD guideline 203, EU method C1 and GLP (96h)
EC50 other aquatic organisms 1	> 1000 g/l OECD guideline 202, EU method C2 and GLP. EC50/LC50 (48h) for fresh water invertebrates
EC50 72h algae (1)	> 1000 mg/l OECD 201, EU method C3 and GLP (72h)
NOEC chronic fish	1000 mg/l OECD guideline 203, EU method C1 and GLP (96h)
NOEC chronic crustacea	> mg/l
NOEC chronic algae	1000 mg/l OECD 201, EU method C3 and GLP (72h)

12.2. Persistence and degradability

Brickmax (1317-35-7)	
Persistence and degradability	Product/Substance is inorganic.

12.3. Bioaccumulative potential

Brickmax (1317-35-7)	
Bioaccumulative potential	Not potentially bioaccumulable.

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
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SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

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ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available				

14.6. Special precautions for user

Overland transport

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

Inland waterway transport

Not applicable

Rail transport

Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Brickmax is not on the REACH Candidate List

Brickmax is not on the REACH Annex XIV List

Trimanganese tetraoxide is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Trimanganese tetraoxide is not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC

15.1.2. National regulations

Germany

VwVwS Annex reference

: Water hazard class (WGK) nwg, Non-hazardous to water (Classification according to VwVwS, Annex 3; ID No. 3409)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV

: Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen

: The substance is not listed

SZW-lijst van mutagene stoffen

: The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding

: The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid

: The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling

: The substance is not listed

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Denmark

Danish National Regulations

: Young people below the age of 18 years are not allowed to use the product

Pregnant/breastfeeding women working with the product must not be in direct contact with the product

The requirements from the Danish Working Environment Authorities regarding work with carcinogens must be followed during use and disposal

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes:

Section	Changed item	Change	Comments
2.1	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Modified	The classification has been changed due to re-classification of trimanganese tetroxide

Full text of H- and EUH-statements:

Repr. 2	Reproductive toxicity, Category 2
H361	Suspected of damaging fertility or the unborn child.

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

