



SAFETY DATA SHEET
MODIFIED HYDROXYETHYL CELLULOSE
REVISION 2, DATE 14 JUN 19

1. IDENTIFICATION

Product Name	Modified Hydroxyethyl Cellulose
Other Names	HEADCEL C 6MS; TYLOSE H 100000 YP2; TYLOSE HX 6000 YG4
Uses	Rheological additive; Coating material; Chemical for use in construction; Special applications.
Chemical Family	No Data Available
Chemical Formula	Unspecified
Chemical Name	Cellulose, 2-hydroxyethyl ether (modified)
Product Description	This product does not contain any substance which may be considered hazardous to health and the environment, according to the current legislation.

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)

Not Scheduled

Redox Ltd
Corporate Office Sydney
Locked Bag 15 Minto NSW 2566 Australia
2 Swettenham Road Minto NSW 2566 Australia
All Deliveries: 4 Holmes Road Minto NSW 2566 Australia

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E-mail sydney@redox.com
Web www.redox.com
ABN 92 000 762 345

Australia Adelaide Brisbane Melbourne Perth Sydney	New Zealand Auckland Christchurch Hawke's Bay UK London	Malaysia Kuala Lumpur USA Los Angeles Oakland Mexico Saltillo
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Globally Harmonised System

Hazard Classification	NOT hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)
Signal Word	None

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)
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3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Cellulose, 2-hydroxyethyl ether, hydrophobically modified, with delayed solubility	Unspecified	9004-62-0	>88 %
Other substances (not contributing to the classification of this product)	Unspecified	Unspecified	<12 %
Glyoxal	C2H2O2	107-22-2	<0.01 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth. Get medical advice/attention if you feel unwell.
Eye	IF IN EYES: Rinse cautiously with water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.
Skin	IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs, get medical advice/attention.
Inhaled	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing until recovered. If respiratory symptoms persist, get medical advice/attention.
Advice to Doctor	Treat symptomatically.
Medical Conditions Aggravated by Exposure	May cause sensitisation of susceptible persons by skin contact.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.
Flammability Conditions	Combustible solid; may burn but does not ignite readily.
Extinguishing Media	Use sand, alcohol resistant foam, chemical powder, Carbon dioxide (CO ₂) or water spray for extinction. Do not scatter spilled material with high-pressure water streams.

Fire and Explosion Hazard	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
Hazardous Products of Combustion	Fire may produce irritating and/or toxic fumes, including Carbon oxides (CO, CO ₂).
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may pollute waterways.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	>120 °C
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. ELIMINATE all ignition sources (if dust clouds can occur). Do not touch or walk through spilled material - Forms slippery surfaces with water! Avoid dust formation. Avoid breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	Shovel or sweep up and put in a closed container for disposal (see SECTION 13). Avoid dispersal of dust in the air.
Containment	Stop leak if you can do it without risk. Prevent dust cloud. Cover powder spill with plastic sheet or tarp to minimise spreading.
Decontamination	Ventilate spillage area.
Environmental Precautionary Measures	Large amounts of the product should not be allowed to enter drains or water courses or be deposited where it can affect ground or surface waters. In case of loss of large quantities, advice local authorities.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
Personal Precautionary Measures	Do not attempt to take action without suitable protective equipment (see SECTION 8).

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Minimise dust generation and accumulation. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Wear personal protective equipment (see SECTION 8). Dust may form explosive mixtures with air! Keep away from sources of ignition - No smoking.
Storage	Store in a dry and well-ventilated place, out of direct sunlight. Keep container tightly closed. Material is hygroscopic - Protect from atmospheric moisture and water. Keep away from sources of ignition - No smoking. Keep away from incompatible materials (see SECTION 10).
Container	Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No specific exposure standards are available for this product. For dust from solid substances without specific occupational exposure standards: - Safe Work Australia Exposure Standard (Nuisance dusts): 8 hr TWA = 10 mg/m ³ (measured as inhalable dust). - New Zealand WES (Particulates not otherwise classified): TWA= 10 mg/m ³ (total); TWA = 3 mg/m ³ (respirable).
Exposure Limits	No Data Available
Biological Limits	No information available. Ensure good ventilation of the work station.

Engineering Measures**Personal Protection Equipment**

- Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Breathing apparatus with Type P1 filter (Short term exposure).
- Eye/face protection: Not required for normal conditions of use. Wear appropriate eye protection to avoid eye contact.
- Hand protection: Not required for normal conditions of use. Choosing the proper glove is a decision that depends not only on the type of material, but also on other quality features, which differ for each manufacturer. Please follow the instructions related to the permeability and the penetration time provided by the manufacturer.
- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact.

Special Hazards Precautions

Avoid dust formation.

Work Hygienic Practices

Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Take off contaminated clothing and wash it before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Powder
Odour	Characteristic
Colour	Whitish
pH	5.5 - 8 10 g/l
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	No Data Available
Freezing Point	No Data Available
Solubility	>10 g/l in water 20°C
Specific Gravity	No Data Available
Flash Point	No Data Available
Auto Ignition Temp	>120 °C
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	1.1 - 1.5 g/cm ³
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	LogPow: <0
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	<ul style="list-style-type: none"> - Minimum ignition energy: > 10 mJ - Combustion class: 5 - Smoulder temperature: 280 °C - pmax: 10 bar - Dust explosion category: ST1 - KSt: < 200 bar*m/s - Ignition temperature: > 460 °C
Non-Flammables That Could Contribute Unusual Hazards to a Fire	Forms slippery surfaces with water!
Properties That May Initiate or Contribute to Fire Intensity	Combustible solid; may burn but does not ignite readily.
Reactions That Release Gases or Vapours	Fire may produce irritating and/or toxic fumes, including Carbon oxides (CO, CO2).
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	The product is non-reactive under normal conditions of use, storage and transport.
Chemical Stability	Stable under normal conditions. No decomposition if stored normally.
Conditions to Avoid	Avoid dust formation. Keep away from sources of ignition - No smoking.
Materials to Avoid	Incompatible/reactive with strong oxidising agents.
Hazardous Decomposition Products	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Fire may produce irritating and/or toxic fumes, including Carbon oxides (CO, CO2).
Hazardous Polymerisation	No dangerous reactions known under normal conditions of use.

11. TOXICOLOGICAL INFORMATION

General Information	<ul style="list-style-type: none"> - Acute toxicity: Based on available data, the classification criteria are not met. - Skin corrosion/irritation: Not classified. Non-irritant. - Eye damage/irritation: Not classified. May cause eye irritation. - Respiratory/skin sensitisation: May cause sensitisation of susceptible persons by skin contact. - Germ cell mutagenicity: Based on available data, the classification criteria are not met. - Carcinogenicity: Based on available data, the classification criteria are not met. - Reproductive toxicity: Based on available data, the classification criteria are not met. - STOT (single exposure): Based on available data, the classification criteria are not met. - STOT (repeated exposure): Based on available data, the classification criteria are not met. - Aspiration toxicity: Based on available data, the classification criteria are not met. <p>*When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.</p>
Acute	
Ingestion	Acute toxicity (Oral): <ul style="list-style-type: none"> - LD50, Rat: >2,000 mg/kg [Supplier's SDS]. COMPONENT: Glyoxal (CAS No. 107-22-2): <ul style="list-style-type: none"> - LD50: 200 mg/kg [Supplier's SDS].
Inhalation	Acute toxicity (Inhalation): COMPONENT: Glyoxal (CAS No. 107-22-2): <ul style="list-style-type: none"> - LC50, Rat: 2.44 mg/l (dust/mist, 4 h) [Supplier's SDS].
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. - LC50, Fish: >500 mg/l [OECD 203 method]. - EC50, other aquatic organisms: >1,000 mg/l [OECD 209 method].
Persistence/Degradability	Product is biodegradable. Does not affect the functioning of waste-water treatment plants.
Mobility	No information available.
Environmental Fate	Do not release undiluted or in higher quantities into groundwater, sewerage or waterways.
Bioaccumulation Potential	Not potentially bioaccumulable.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container in accordance with licensed collector's sorting instructions and local/regional/national regulations.
Special Precautions for Land Fill	No information available.

14. TRANSPORT INFORMATION**Land Transport (Australia)**

ADG Code

Proper Shipping Name	Modified Hydroxyethyl Cellulose
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	Modified Hydroxyethyl Cellulose
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available

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Comments NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	Modified Hydroxyethyl Cellulose
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (United States of America)

US DOT

Proper Shipping Name	Modified Hydroxyethyl Cellulose
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Sea Transport

IMDG Code

Proper Shipping Name	Modified Hydroxyethyl Cellulose
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
EMS	No Data Available
Marine Pollutant	No
Comments	NON-DANGEROUS GOODS: Not regulated for SEA transport.

Air Transport

IATA DGR

Proper Shipping Name	Modified Hydroxyethyl Cellulose
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available

Comments

NON-DANGEROUS GOODS: Not regulated for AIR transport.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification

NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION**General Information**

No Data Available

Poisons Schedule (Aust)

Not Scheduled

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code

Not Hazardous

National/Regional Inventories**Australia (AIIIC)**

Listed

Canada (DSL)

Listed

Canada (NDSL)

Not Determined

China (IECSC)

Listed

Europe (EINECS)

Exempt

Europe (REACH)

Not Determined

Japan (ENCS/METI)

(8)-194

Korea (KECI)

KE-20506

Malaysia (EHS Register)

Not Determined

New Zealand (NZIoC)

Listed

Philippines (PICCS)

Listed

Switzerland (Giftliste 1)

Not Determined

Switzerland (Inventory of Notified Substances)

Not Determined

Taiwan (NCSR)

Listed

USA (TSCA)

Listed

16. OTHER INFORMATION

Related Product Codes	HYETCE1200, HYETCE6300, HYETCE6400, HYETCE6410
Revision	2
Revision Date	14 Jun 2019
Key/Legend	<p>< Less Than > Greater Than AICS Australian Inventory of Chemical Substances atm Atmosphere CAS Chemical Abstracts Service (Registry Number) cm² Square Centimetres CO₂ Carbon Dioxide COD Chemical Oxygen Demand deg C (°C) Degrees Celcius EPA (New Zealand) Environmental Protection Authority of New Zealand deg F (°F) Degrees Farenheit g Grams g/cm³ Grams per Cubic Centimetre g/l Grams per Litre HSNO Hazardous Substance and New Organism IDLH Immediately Dangerous to Life and Health immiscible Liquids are insoluable in each other. inHg Inch of Mercury inH₂O Inch of Water K Kelvin kg Kilogram kg/m³ Kilograms per Cubic Metre lb Pound LC₅₀ LC stands for lethal concentration. LC₅₀ is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours. LD₅₀ LD stands for Lethal Dose. LD₅₀ is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals. ltr or L Litre m³ Cubic Metre mbar Millibar mg Milligram mg/24H Milligrams per 24 Hours mg/kg Milligrams per Kilogram mg/m³ Milligrams per Cubic Metre Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present. mm Millimetre mmH₂O Millimetres of Water mPa.s Millipascals per Second N/A Not Applicable NIOSH National Institute for Occupational Safety and Health NOHSC National Occupational Heath and Safety Commission OECD Organisation for Economic Co-operation and Development Oz Ounce PEL Permissible Exposure Limit Pa Pascal ppb Parts per Billion ppm Parts per Million ppm/2h Parts per Million per 2 Hours ppm/6h Parts per Million per 6 Hours psi Pounds per Square Inch R Rankine RCP Reciprocal Calculation Procedure STEL Short Term Exposure Limit TLV Threshold Limit Value tne Tonne TWA Time Weighted Average ug/24H Micrograms per 24 Hours</p>

UN United Nations

wt Weight