SAFETY DATA SHEET
KEROSENE
REVISION 4, DATE 14 JAN 2021

1. IDENTIFICATION

Product Name	**Kerosene**
Other Names	REDOX L40; Solvent Kero
Uses	Industrial Solvent.
Chemical Family	No Data Available
Chemical Formula	Unspecified
Chemical Name	Kerosene/Kerosine (petroleum), hydrodesulfurized
Product Description	Complex mixture of hydrocarbons consisting of paraffins, cycloparaffins, aromatic and olefinic hydrocarbons with carbon numbers predominantly in the C9 to C25 range. May also contain several additives at <0.1% v/v each.

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	Suite 13A.03, Menara Summit Persiaran Kewajipan USJ1 47600 UEP Subang Jaya 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	Australia – Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
National Poison Centre	Malaysia	+60-4-6536-999

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)	Schedule 5

Globally Harmonised System

Hazard Classification

Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Hazard Categories

Flammable Liquids - Category 3

Skin Corrosion/Irritation - Category 2

Aspiration Hazard - Category 1

Long-term Hazard To The Aquatic Environment - Category 2

Pictograms

Signal Word

Danger

Hazard Statements

H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention	**P210**	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P273	Avoid release to the environment.
	P233	Keep container tightly closed.
	P240	Ground and bond container and receiving equipment.
	P241	Use explosion-proof electrical/ventilating/lighting and all other equipment.
	P242	Use non-sparking tools.
	P243	Take action to prevent static discharges.
Response	**P370 + P378**	In case of fire: Use foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only for extinction.
	P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor.
	P331	Do NOT induce vomiting.
	P391	Collect spillage.
	P332 + P313	If skin irritation occurs: Get medical advice/attention.
	P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
	P363	Wash contaminated clothing before reuse.
Storage	**P403 + P235**	Store in a well-ventilated place. Keep cool.
	P405	Store locked up.
Disposal	**P501**	Dispose of contents/container in accordance with local / regional / national / international regulations.

National Transport Commission (Australia)

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

Dangerous Goods Classification

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Kerosene	No Data Available	8008-20-6	<=100 %
Kerosine, petroleum, hydrodesulfurized	No Data Available	64742-81-0	<=100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed IF SWALLOWED: Rinse mouth with water. Do NOT induce vomiting. Immediately call a Poison Centre or doctor/physician for advice. Where vomiting occurs naturally, have affected person place head below hip level in order to reduce risk of aspiration. Never give anything by mouth to an unconscious person.

Eye IF IN EYES: Immediately flush eyes with running 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 (or hair): Remove and isolate contaminated clothing and shoes. Immediately flush skin and hair with running water (and soap if material is insoluble) for at least 15 minutes. In case of gross contamination, drench contaminated clothing and skin with plenty of water before removing clothes. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse, or discard.
*In case of burns, immediately cool affected skin for as long as possible with cold water. Cover with a clean, dry dressing until medical help is available. If blistering occurs, do NOT break blisters. Do not remove clothing if adhering to skin.

Inhaled IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Remove contaminated clothing and loosen remaining clothing. Keep at rest until fully recovered. If respiratory symptoms persist, get medical advice/attention. Give artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult.

Advice to Doctor Treat symptomatically. Ensure that attending medical personnel are aware of identity and nature of the product(s) involved, and take precautions to protect themselves. Keep victim calm and warm.

Medical Conditions Aggravated by Exposure No information available.

5. FIRE FIGHTING MEASURES

General Measures Move containers from fire area if you can do it without risk. Cool containers with water spray until well after fire is out.

Flammability Conditions FLAMMABLE LIQUID & VAPOUR: Will be easily ignited by heat, sparks or flames.

Extinguishing Media Use dry chemical, Carbon dioxide (CO2), foam or water spray for extinction - Do not use straight streams.
*CAUTION: This product has a very low flash point: Use of water spray when fighting fire may be inefficient.

Fire and Explosion Hazard Risk of violent reaction or explosion! Vapours may form explosive mixtures with air. Vapours may travel to source of ignition and flash back. Most vapours are heavier than air; They will spread along ground and collect in low or confined areas. Vapour explosion hazard indoors, outdoors or in sewers. Heating can cause expansion or decomposition leading to violent rupture of containers. Many liquids are lighter than water.

Hazardous Products of Combustion Fire may produce irritating and/or toxic smoke and gases, including Carbon monoxide, Carbon dioxide, unidentified organic and inorganic compounds, oxides of Sulfur and oxides of Nitrogen.

Special Fire Fighting Instructions Contain runoff from fire control or dilution water - Runoff may cause pollution. Runoff to sewer may create fire or explosion hazard!

Personal Protective Equipment Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Flash Point >=38 °C

Lower Explosion Limit	1 %
Upper Explosion Limit	6 %
Auto Ignition Temperature	>220 °C
Hazchem Code	3Y

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation - Ventilate closed spaces before entering. ELIMINATE all ignition sources - All equipment used when handling the product must be grounded. Do not touch or walk through spilled material - Slippery when spilt. Avoid accidents, clean up immediately! Avoid breathing vapours and contact with eyes, skin and clothing.
Clean Up Procedures	Absorb or cover with dry earth, sand or other non-combustible material and transfer to suitable, labelled containers for subsequent recycling or disposal (see SECTION 13). Use clean, non-sparking tools to collect absorbed material.
Containment	Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. Dike far ahead of large spill for later disposal. *A vapour-suppressing foam may be used to reduce vapours. Water spray may reduce vapour, but may not prevent ignition in closed spaces.
Decontamination	No information available.
Environmental Precautionary Measures	Spillages and decontamination runoff should be prevented from entering drains and watercourses. If contamination of crops, sewers or waterways has occurred advise local emergency services.
Evacuation Criteria	Immediately isolate spill or leak area. Keep unauthorized personnel away. Stay upwind and/or uphill.
Personal Precautionary Measures	Wear protective equipment to prevent skin and eye contamination and inhalation of vapours (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. Avoid inhalation of vapour, mist or aerosols. Avoid contact with eyes, skin and clothing. Do not ingest. Wear protective gloves/protective clothing/eye protection/face protection (see SECTION 8). FLAMMABLE LIQUID & VAPOUR: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking. Ground and bond container and receiving equipment. Use explosion-proof equipment and non-sparking tools. Take action to prevent static discharges. Avoid release to the environment - Collect spillage (see SECTION 6).
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container standing upright and tightly closed when not in use. Protect against physical damage. Inspect regularly for deficiencies such as damage or leaks. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking. Keep away from foodstuffs and incompatible materials (see SECTION 10). Store locked up.
Container	Keep in the original container or recommended materials, i.e. For containers or container linings, use carbon steel and low alloy steel. Aluminium may also be used for applications where it does not present unnecessary fire hazard. For container linings, Unplastisized polyvinyl chloride (U-PVC), Fluoropolymers (PTFE), Polyvinylidenefluoride (PVDF), Polyetheretherketone (PEEK), Polyamide (PA-11), may also be used. For seals and gaskets, use Fluoroelastomer (FKM), Viton (A and B), Nitrile butadiene (NBR), Buna-N. For coating (paint), use High build amine adduct-cured epoxy. *Unsuitable materials: For containers or container linings, avoid Polyethylene (PE, HDPE), Polypropylene (PP), Polymethyl methacrylate (PMMA), Acrylonitrile butadiene styrene (ABS). For seals and gaskets, avoid Natural rubber (NR), Ethylene propylene (EPDM), Polychloroprene (CR), Neoprene, Butyl (IIR), Chlorinated polyethylene (CSM), e.g. Hypalon.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No value assigned for this specific material by Safe Work Australia.
Exposure Limits	No Data Available

Biological Limits	The ingredients in this material do not have a biological limit allocated.
Engineering Measures	This substance is hazardous and should be used with a local exhaust ventilation system, drawing vapours away from workers' breathing zone. A flame-proof exhaust ventilation system is required.
Personal Protection Equipment	- Respiratory protection: If engineering controls are not effective in controlling airborne exposure, then an approved respirator should be used. Recommended: Organic vapour/particulate respirator (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses with side-shields, chemical goggles or full-face shield, as appropriate, should be used. Final choice of appropriate eye/face protection will vary according to individual circumstances (refer to AS/NZS 1337 series). - Hand protection: Wear protective gloves. Recommended: Impervious gloves, e.g. Nitrile, neoprene, PVC gloves. Final choice of appropriate gloves will vary according to individual circumstances, i.e. methods of handling or according to risk assessments undertaken (refer to AS/NZS 2161.1). - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist. Chemical-resistant apron is recommended where large quantities are handled.
Special Hazards Precaustions	This material is a Schedule 5 Poison (Caution) and must be stored, maintained and used in accordance with the relevant regulations.
Work Hygienic Practices	Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Always wash hands prior to eating, drinking, smoking or using the toilet. Avoid contact with clothing. Avoid eye contact and skin contact. Avoid inhalation of vapour, mist or aerosols. Wash contaminated clothing and other protective equipment before storing or re-using.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Liquid
Odour	Hydrocarbon
Colour	Pale yellow, straw, colourless
pH	No Data Available
Vapour Pressure	<1 hPa (@ 20 °C)
Relative Vapour Density	No Data Available
Boiling Point	150 - 300 °C
Melting Point	No Data Available
Freezing Point	No Data Available
Solubility	No Data Available
Specific Gravity	No Data Available
Flash Point	>=38 °C
Auto Ignition Temp	>220 °C
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	0.79 g/cm3 (typical)
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	2 - 6
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available

Viscosity	1 - 2 mm2/s (@ 40 °C)
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	Not applicable.
Fast or Intensely Burning Characteristics	Risk of violent reaction or explosion!
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	FLAMMABLE LIQUID & VAPOUR: Will be easily ignited by heat, sparks or flames.
Reactions That Release Gases or Vapours	Fire may produce irritating and/or toxic smoke and gases, including Carbon monoxide, Carbon dioxide, unidentified organic and inorganic compounds, oxides of Sulfur and oxides of Nitrogen.
Release of Invisible Flammable Vapours and Gases	Vapours may form explosive mixtures with air. Vapour explosion hazard indoors, outdoors or in sewers.

10. STABILITY AND REACTIVITY

General Information	No known hazardous reactions.
Chemical Stability	Stable under normal conditions of storage and handling.
Conditions to Avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
Materials to Avoid	Incompatible/reactive with strong oxidising agents.
Hazardous Decomposition Products	Hazardous decomposition products are not expected to form during normal storage. Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases, including Carbon monoxide, Carbon dioxide, unidentified organic and inorganic compounds, oxides of Sulfur and oxides of Nitrogen, will be evolved when this material undergoes combustion or thermal or oxidative degradation.
Hazardous Polymerisation	No information available.

11. TOXICOLOGICAL INFORMATION

General Information	- Acute toxicity: This material has been classified as non-hazardous. Swallowing can result in nausea, vomiting and irritation of the gastrointestinal tract. May cause lung damage if swallowed (Aspiration hazard). - Skin corrosion/irritation: Causes skin irritation (reversible effects to skin). Skin contact will cause redness, itching and swelling. Repeated exposure may cause skin dryness and cracking and may lead to dermatitis. - Eye damage/irritation: This material has been classified as non-hazardous. May cause eye irritation, redness, itching and tearing. - Respiratory/skin sensitisation: This material has been classified as non-hazardous. Not expected to be a respiratory sensitiser. Not expected to be a skin sensitiser. - Germ cell mutagenicity: This material has been classified as non-hazardous. Not considered to be a mutagenic hazard. - Carcinogenicity: This material has been classified as non-hazardous. Not considered to be a carcinogenic hazard. - Reproductive toxicity: This material has been classified as non-hazardous. Not considered to be toxic to reproduction. - STOT (single exposure): This material has been classified as non-hazardous. Inhalation of product vapours may cause irritation of the nose, throat and respiratory system. - STOT (repeated exposure): This material has been classified as non-hazardous. Not expected to cause toxicity to a specific target organ. - Aspiration toxicity: May be fatal if swallowed and enters airways. Small amounts of liquid aspirated into the respiratory system during ingestion or vomiting may cause bronchopneumonia or pulmonary oedema.

Acute

Ingestion	Acute toxicity (Oral): - LD50, Rat: >2,000 mg/kg
Other	Acute toxicity (Dermal): - LD50, Rabbit: >2,000 mg/kg
Inhalation	Acute toxicity (Inhalation): - LC50, Rat: >5 mg/l (4 h)
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	Aquatic toxicity: - LL/EL/IL50 (aquatic organisms): 1 - 10 mg/l *Films formed on water may affect oxygen transfer and damage organisms.
Persistence/Degradability	Major constituents are expected to be inherently biodegradable. The volatile constituents will oxidize rapidly by photochemical reactions in air.
Mobility	Floats on water. Contains volatile constituents. Evaporates within a day from water or soil surfaces. Large volumes may penetrate soil and could contaminate groundwater.
Environmental Fate	Toxic to aquatic life with long-lasting effects - Avoid release to the environment. Do not discharge this material into waterways, drains and sewers.
Bioaccumulation Potential	Contains constituents with the potential to bioaccumulate.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	If possible, material and its container should be recycled. If material or container cannot be recycled, dispose in accordance with local, regional, national and international regulations.
Special Precautions for Land Fill	Labels should not be removed from containers until they have been cleaned. Advise flammable nature. Empty containers may contain flammable residues. Do not puncture, cut or weld on or near empty containers. Contaminated containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then reused or disposed of by landfill or incineration, as appropriate. Do not incinerate closed containers. *Persons conducting disposal, recycling or reclamation activities should ensure that appropriate personal protection equipment is used (see SECTION 8).

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	KEROSENE
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
EPG	15 Liquids - Flammable
UN Number	1223
Hazchem	3Y

Pack Group	III
Special Provision	No Data Available

Sea Transport
IMDG Code

Proper Shipping Name	KEROSENE
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
UN Number	1223
Hazchem	3Y
Pack Group	III
Special Provision	No Data Available
EMS	F-E, S-E
Marine Pollutant	Yes

Air Transport
IATA DGR

Proper Shipping Name	KEROSENE
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
UN Number	1223
Hazchem	3Y
Pack Group	III
Special Provision	No Data Available

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

Dangerous Goods Classification	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	HYDROCARBONS, LIQUID
Poisons Schedule (Aust)	Schedule 5

National/Regional Inventories

Australia (AIIC)	Listed
Canada (DSL)	Listed
Canada (NDSL)	Not Listed
China (IECSC)	Listed
Europe (EINECS)	232-366-4 265-184-9

Europe (REACh)	Listed
Japan (ENCS/METI)	Not Listed
Korea (KECI)	KE-21778 KE-21798
Malaysia (List of Classified Substances)	Listed
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Listed
Taiwan (TCSI)	Listed
USA (TSCA)	Listed
Mexico (INSQ)	Not Determined

16. OTHER INFORMATION

Related Product Codes	KEROSE3241, KEROSE3250, KEROSE5450, KEROSE5451, KEROSE5470, KEROSE5472, KEROSE5474, KEROSE5475, KEROSE5490, KEROSE5491, KEROSE5492, KEROSE5493, KEROSE5510, KEROSE8000, KEROSE8100, KEROSE8101, KEROSE8120, KEROSE8150, KEROSE9000
Revision	4
Revision Date	14 Jan 2021
Reason for Issue	Updated SDS
Key/Legend	< Less Than > Greater Than **AICS** Australian Inventory of Chemical Substances **atm** Atmosphere **CAS** Chemical Abstracts Service (Registry Number) **cm^2** 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/cm^3** 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/m^3** 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 **m^3** Cubic Metre **mbar** Millibar **mg** Milligram **mg/24H** Milligrams per 24 Hours

mg/kg Milligrams per Kilogram
mg/m^3 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
UN United Nations
wt Weight