

1. IDENTIFICATION

Product Name	Caustic Potash Liquid 15-50%
Other Names	Caustic Potash; Koh; Potassium Hydroxide
Uses	Additive of food, raw materials for an organic compound.
Chemical Family	No Data Available
Chemical Formula	KOH
Chemical Name	Caustic Potash Liquid
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Pty 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
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) 6

Globally Harmonised System

Hazard Classification	Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)
Hazard Categories	Acute Toxicity (Oral) - Category 4 Skin Corrosion/Irritation - Category 1A



Pictograms



Signal Word

Danger

Hazard Statements

- H290** May be corrosive to metals.
- H302** Harmful if swallowed.
- H314** Causes severe skin burns and eye damage.

Precautionary Statements

- | | |
|------------|--|
| Prevention | <ul style="list-style-type: none"> P260 Do not breathe dust/fume/gas/mist/vapours/spray. P270 Do not eat, drink or smoke when using this product. P280 Wear protective gloves/protective clothing/eye protection/face protection. |
| Response | <ul style="list-style-type: none"> P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 or doctor/physician. P321 Specific treatment (see First Aid Measures on Safety Data Sheet). P330 Rinse mouth. P363 Wash contaminated clothing before reuse. |
| Storage | <ul style="list-style-type: none"> P390 Absorb spillage to prevent material damage. P405 Store locked up. P406 Store in corrosive resistant container with a resistant inner liner. |
| Disposal | <ul style="list-style-type: none"> P501 Dispose of contents/container in accordance with local / regional / national / international regulations. |

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications

- | | |
|-----------------------|--|
| Health Hazards | <ul style="list-style-type: none"> 6.1D Substances that are acutely toxic - Harmful 8.1A Substances that are corrosive to metals 8.2B Substances that are corrosive to dermal tissue UN PGII 8.3A Substances that are corrosive to ocular tissue |
| Environmental Hazards | <ul style="list-style-type: none"> 9.3B Substances that are ecotoxic to terrestrial vertebrates |

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Water	No Data Available	7732-18-5	50.0 - 85.0 %
Potassium Hydroxide	No Data Available	1310-58-3	15.0 - 50.0 %



4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	Have a patient drink large amount of water right away. Do NOT induce vomiting. If vomiting occurs, keep the head lower than the hips to maintain open airway and prevent aspiration. Seek medical treatment right away.
Eye	Wash immediately with large amount of water for at least 15-20 minutes while holding eyelids open. Take medical treatment right away.
Skin	Remove contaminated clothing and shoes immediately. Wash the affected area with large amount of water using soap or mild detergent for 15-20 minutes or until it is evident that there is no chemical substance left. In case of burns, wrap the affected area loosely with a sterilized gauze. Seek medical treatment right away.
Inhaled	Remove victim from exposure to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Keep the patient warm and comfortable. Seek medical treatment right away.
Advice to Doctor	Treat symptomatically based on judgement of doctor and individual reactions of patient. Antidote : No antidote is available. In case of inhalation, oxygen supply must be considered. In case of ingestion, endoscopy of the esophagus must be considered. Avoid washing out the stomach. The patient must be functionally cured according to symptoms.
Medical Conditions Aggravated by Exposure	Persons with pre-existing Eye disease, cutaneous disorder and allergy may be more susceptible to the effects from this product.

5. FIRE FIGHTING MEASURES

General Measures	Cool containers with flooding quantities of water until well after fire is out.
Flammability Conditions	Product is a non-flammable liquid.
Extinguishing Media	In case of fire, appropriate extinguishing media include Powder extinguishant, carbon dioxide, water, general foam. Use minute water sprinkle, fog or regular foam in case of a big fire. After a fire extinguished, cool the containers exposed to flames by spraying with water for an extended period. Use large amount of water in mist type (Do not spray water directly on the material).
Hazardous Products of Combustion	Thermal decomposition may produce toxic or / and corrosive fumes of potassium oxide.
Personal Protective Equipment	Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves) or chemical splash suit. Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk. Do NOT allow fire fighting water to reach waterways, drains or sewers. Store fire fighting water for treatment.
Flash Point	143 °C
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	2R

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Personnel involved in the clean up should wear full protective clothing as listed in section 8. Avoid accidents, clean up immediately. Increase ventilation. Avoid walking through spilled product as it is slippery when spilt. Stop leak if safe to do so. Do NOT let product reach drains or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Management. Use clean, non-sparking tools and equipment. Shut off all possible sources if ignition.
Clean Up Procedures	Soak up spilled product using absorbent non-combustible material such as sand or soil. Avoid using sawdust or cellulose. When saturated collect material, transfer to suitable, labelled, dry chemical-waste containers and dispose of promptly as hazardous waste. Isolate the container from contaminated area, mark and remove it to safe area. Neutralize the floor surface with acid materials (weak hydrochloric acid, weak sulfuric acid, etc.) after diluting it with large amount of water. Soil exposure: Dig a hollow in the ground where it spilt. Build a bank using earth, sand bags, or blowing agents such as polyurethane or concrete in order to stop it flowing and to keep it in the bank. Adsorb the liquid using slack lime, soda, ashes, cement powder. Use a weak acid to neutralize. Spill in the atmosphere: Reduce vapor occurrence by spraying water as a spray. Collect the spilt substance to dispose of it as potential hazardous waste. Underwater spill : Neutralize the material with a weak acid. Avoid dispersal of spilt material and run off and contact with soil, waterways, drains and sewers.



Environmental Precautionary Measures

Evacuation Criteria Evacuate all unnecessary personnel.

7. HANDLING AND STORAGE

Handling Warning - To avoid a violent reaction ALWAYS add material to water and NEVER water to material. Ensure an eye bath and safety shower are available and ready for use. Avoid contact with heat, open flames, sparks and other sources of ignition.
Observe good personal hygiene practices and recommended procedures.
Wash thoroughly after handling. In case making the diluted solution of potassium hydroxide, be sure to put potassium hydroxide into water (Absolutely do not put water into potassium hydroxide). Avoid bodily contact and persons handling potassium hydroxide must always wear protective goggles, protective suit and protective gloves as listed in section 8. Upon being contacted with this material, it destroys the cell of the skin, so absolutely do not work with bare hands. Remove contact lenses before starting any work. Do not smoke or have food while working. Do not inhale product vapours. Avoid prolonged or repeated exposure. Remove contaminated clothing and wash before reuse.

Storage Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Store away from water or moisture and store in a dry area (strong hygroscopic property).
Protect against physical damage. Store away from incompatible materials as listed in section 10. Storage container should be airtight and kept in a dark place to prevent the chemical from coming into contact with moisture and carbon dioxide in the air. Storing and transporting with food stuff, feed and medicine is prohibited. Keep it in isolation from an acid, organics (woolen fabrics, leather, etc.), metal, NITROMETHAN, and CHLORINATED SOLVENT.
Attention must be paid so that a potassium hydroxide solution may not be frozen in winter. This product has a UN classification of 1814 and a Dangerous Goods Class 8 (Corrosive) according to The Australian Code for the Transport of Dangerous Goods By Road and Rail.

Container Container type/packaging must comply with all applicable local legislation.
Store in original packaging as approved by manufacturer.
Do not store in steel, copper, tin, aluminium or its alloy containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General The following exposure standard has been established by The Australian Safety and Compensation Council (ASCC); Potassium Hydroxide [Caustic Potash] CAS 1310-58-3: TWA = 2mg/m3 Peak Limitation.
NOTE: The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. Peak limitation is a ceiling concentration which should not be exceeded over a measurement period which should be as short as possible but not exceeding 15 minutes.
These exposure standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Exposure Limits No Data Available

Biological Limits No information available on biological limit values for this product.

Engineering Measures A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Adequate ventilation should be provided so that exposure limits are not exceeded.

Personal Protection Equipment RESPIRATOR: Wear a positive-pressure, self-contained breathing apparatus for planned entry into unknown concentrations or in case of emergency (AS1715/1716).
EYES: Safety glasses with side shields (AS1336/1337).
HANDS: Wear impervious protective gloves (rubber, neoprene or PVC) (AS2161).
CLOTHING: Chemical-resistant coveralls, splash apron and safety footwear (AS3765/2210).

Work Hygienic Practices No Data Available

9. PHYSICAL AND CHEMICAL PROPERTIES



Physical State	Liquid
Appearance	Liquid
Odour	Odourless
Colour	Transparent / Opaque
pH	12.0
Vapour Pressure	2.5 (50% Solution) torr (@ 20 °C)
Relative Vapour Density	1.516 (50% Solution)
Boiling Point	143 (50% Solution) °C
Melting Point	No Data Available
Freezing Point	4.4 (50% Solution) °C
Solubility	100g/90mL - Soluble : ethanol, glycerin 25°C
Specific Gravity	1.457 (15.6°C)
Flash Point	143 °C
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	No Data Available
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	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	6.0 cP (15.6°C) (@ No Data Available)
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No Data Available
Potential for Dust Explosion	Product is a liquid.
Fast or Intensely Burning Characteristics	No Data Available
Flame Propagation or Burning Rate of Solid Materials	No Data Available
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No Data Available
Properties That May Initiate or Contribute to Fire Intensity	No Data Available
Reactions That Release Gases or Vapours	If this reacts to water, it attacks metal such as aluminum and tin, lead or zinc, resulting in generating a hydrogen gas.
Release of Invisible Flammable Vapours and Gases	No Data Available

10. STABILITY AND REACTIVITY

Chemical Stability	Product is stable under normal conditions of use, storage and temperature. Corrosive Liquid.
Conditions to Avoid	Avoid heat, a flame, spark, other ignition unit. Hazardous gas can be accumulated in a closed space (explosion).



Materials to Avoid	Incompatible with oxidizers such as perchlorates, peroxides, permanganates, chlorates, nitrates, chlorine, bromine, fluorine, etc. Avoid contact with Nitric acid, Acid, Acrolein, Alcohol, Aluminum, Ammonium salt, Benzoyl chloride + Sodium azide, Para-bis(1,2-Dibromoethyl)benzene, Bromoform, Bromoform + Cyclic polyethylene oxide, Calcium carbide + Chlorine, Chlorine dioxide, Chlorine + hydrogen peroxide, Chloroform + methanol, 1,2-Dichloroethylene, Cyclopentadiene, Geranium, Glass, Halogenated hydrocarbon, nitride, Lead, Anhydrous mallein, Metal, N-Methyl-N-Nitrosourea + Methylene chloride, Trichloro nitric acid, Alkane nitrate, Nitro benzene + Methanol, Nitro ethane, Ortho-Nitro phenol, Nitro propane, N-Nitrosomethylurea + N-Butylether, Phosphorous, Peroxi potassium disulphate, Potassium peroxodisulphate + water, sugar, Tetrachloroethane, 2,2,3,3-Propane tetraflouride, Tetrahydrofuran, Thorium dioxide, tin, Trichloroethylene, 2,4,6-Toluene trinitrate + Methanol, and zinc.
Hazardous Decomposition Products	On thermal decomposition, it generates poisonous fume of potassium oxide.
Hazardous Polymerisation	Refer to Condition and substance to avoid. If this reacts to water, it attacks metal such as aluminum and tin, lead or zinc, resulting in generating a hydrogen gas. It actively reacts to melted O-nitrophenol, and if potassium hydroxide and tetrachloroethane are heated, a chloroacetylene gas which naturally takes fire is generated. If it reacts to 1,2-dichloroethylene, chloroacetylene which naturally takes fire is generated. If it is heated with phosphorous, a phosphine gas which naturally takes fire is generated. It is incompatible with an acid, water, metal, halogen hydrocarbon, and maleic acid anhydride. Polymerization reaction : Not polymerized. If it melts in or contact with water, alcohol or acid solution, exothermic reaction arise.

11. TOXICOLOGICAL INFORMATION

General Information	Oral toxicity L LD50=333mg/kg b.w (Rat : Sprague-Dawley) Serious eye irritation : Reported as causing irreversible damage in human and in a rabbit Draize test. Severe exposure may cause pneumonia, circulatory failure and peritonitis. KOH is not a mutagen because negative results were obtained in bacterial reverse mutation assay and in a mouse bone micronucleus test.
Eyelrritant	Short term exposure may cause burns and damage to eyes. Long term exposure may have the same effect reported on short term exposure. Contact with eyes may cause CONJUNCTIVAL EDEMA and CORNEAL DESTRUCTION.
Ingestion	Causes severe burns. Harmful if swallowed. Long term exposure may have the same effect reported on short term exposure. If swallowed, it causes severe pains in the oral cavity and the oesophagus, vomiting and diarrhoea. The vomit contains blood. If a patient doesn't die within 24 hours, he recovers for 2-4 days and then suffers from sudden pains, abnormal tetany of stomach, and rapid fall of blood pressure indicating oesophagus perforation. In case of Esophagostenosis, its early symptoms appear within a few weeks but may appear a few years later.
Inhalation	Short term exposure may cause burns. Long term exposure may cause indigestion. Exposure to dust or mist may cause nasal septum disorder. If inhaled, it causes severe pains in the upper part of a respiratory tract. In case of severe exposure, pneumonia, circulatory disturbance and peritonitis may arise.
SkinIrritant	Causes severe burns on short term exposure. Long term exposure may have the same effect reported on short term exposure. If this contacts the skin, it slowly penetrates the skin, and the cell of the skin is gelatinized.
Carcinogen Category	No Data Available

12. ECOLOGICAL INFORMATION

Ecotoxicity	Toxicity to fish : LC50=80mg/L, 96hr, Gambusia Affinis (non GLP) Toxicity to daphnia magna : EC50=660mg/L, 48hr, Daphnia magna (non GLP) Toxicity to algae : EC50=1337mg/L, 120hr, nitscheria linearis (non GLP)
Persistence/Degradability	log Kow -3.88
Mobility	No information available on mobility for this product. Soluble in water.
Environmental Fate	Do NOT let product reach waterways, drains and sewers.
Bioaccumulation Potential	bioaccumulation : BCF 3. 162 Readily Biodegradable.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of in accordance with all local, state and federal regulations.
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All empty packaging should be disposed of in accordance with Local, State, and Federal Regulations or recycled/reconditioned at an approved facility.
 Dilute with large amount of water before neutralizing. Large amount of heat will be emitted while diluting or neutralizing, so be careful.
 Neutralize with a weak acid (Hydrochloric acid, Sulfuric acid)

Special Precautions for Land Fill Contact a specialist disposal company or the local waste regulator for advice.
 Do not bury it in the ground.

14. TRANSPORT INFORMATION

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	POTASSIUM HYDROXIDE SOLUTION
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
EPG	37 Toxic And/Or Corrosive Substances Non-Combustible
UN Number	1814
Hazchem	2R
Pack Group	II
Special Provision	No Data Available

Sea Transport

IMDG Code

Proper Shipping Name	POTASSIUM HYDROXIDE SOLUTION
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
UN Number	1814
Hazchem	2R
Pack Group	II
Special Provision	No Data Available
EMS	FA,SB
Marine Pollutant	No

Air Transport

IATA DGR

Proper Shipping Name	POTASSIUM HYDROXIDE SOLUTION
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
UN Number	1814
Hazchem	2R
Pack Group	II
Special Provision	No Data Available

15. REGULATORY INFORMATION

General Information No Data Available



Poisons Schedule (Aust)

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Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code HSR001574

National/Regional Inventories

Australia (AICS)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	215-181-3
Europe (REACH)	Not Determined
Japan (ENCS/METI)	Not Determined
Korea (KECI)	Not Determined
Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Not Determined
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSR)	Not Determined
USA (TSCA)	Listed

16. OTHER INFORMATION

Related Product Codes	CAPOLB1000, CAPOLB1001, CAPOLB1002, CAPOLB1100, CAPOLB1200, CAPOLB1300, CAPOLB1400, CAPOLI1000, CAPOLI1001, CAPOLI1002, CAPOLI1003, CAPOLI1004, CAPOLI1005, CAPOLI1006, CAPOLI1007, CAPOLI1008, CAPOLI1009, CAPOLI1010, CAPOLI1100, CAPOLI1101, CAPOLI1200, CAPOLI1201, CAPOLI1202, CAPOLI1203, CAPOLI1300, CAPOLI1350, CAPOLI1351, CAPOLI1352, CAPOLI1400, CAPOLI1401, CAPOLI1500, CAPOLI1600, CAPOLI1800, CAPOLI2000, CAPOLI2100, CAPOLI2101, CAPOLI2150, CAPOLI2151, CAPOLI2155, CAPOLI2200, CAPOLI2500, CAPOLI3000, CAPOLI3001, CAPOLI3500, CAPOLI3600, CAPOLI3700, CAPOLI4000, CAPOLI9000, CAPOLI9050, CAPOTA1721, CAPOTA1725, CAPOTA1801, CAPOTA1802, CAPOTA1803, CAPOTA1804, CAPOTA1805, CAPOTA1806, CAPOTA1807, CAPOTA1808, CAPOTA1809, CAPOTA1810, CAPOTA1811, CAPOTA1812, CAPOTA1820, CAPOTA1821, CAPOTA1822, CAPOTA1823, CAPOTA1825, CAPOTA1865, CAPOTA1866, CAPOTA1867, CAPOTA1868, CAPOTA1886, CAPOTA1887, CAPOTA1888, CAPOTA1889, CAPOTA1890, CAPOTA1891, CAPOTA1892, CAPOTA1893, CAPOTA1894, CAPOTA1895, CAPOTA1896, CAPOTA1897, CAPOTA1898, CAPOTA1899, CAPOTA1902, CAPOTA1903, CAPOTA1940, CAPOTA1942, CAPOTA1945, CAPOTA4500, CAPOTA8888
Revision	2
Revision Date	28 May 2015
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)
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 insoluble 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 Health 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

