



SAFETY DATA SHEET CALCIUM CHLORIDE, DIHYDRATE REVISION 6, DATE 22 MAR 2022

1. IDENTIFICATION

Product Name	Calcium chloride, dihydrate
Other Names	No Data Available
Uses	De-icing and freezing point depression; Road surfacing; Food additive; Laboratory and drying operations; Miscellaneous applications.
Chemical Family	No Data Available
Chemical Formula	CaCl ₂ .2H ₂ O
Chemical Name	Calcium chloride, dihydrate
Product Description	No Data Available

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 Selangor, 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
Chemcall	Malaysia	+64-4-9179888
National Poison Centre	Malaysia	+60-4-6536-999
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



Globally Harmonised System

Hazard Classification		Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)	
Hazard Categories		Serious Eye Damage/Irritation - Category 2	
Pictograms			
Signal Word		Warning	
Hazard Statements		H319	Causes serious eye irritation.
Precautionary Statements	Prevention	P280	Wear eye protection/face protection.
		P264	Wash face, hands and any exposed skin thoroughly after handling.
	Response	P337 + P313	If eye irritation persists: Get medical advice.
		P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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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Safe Work Australia

National Guide for Classifying Hazardous Chemicals under the Model WHS Regulations

Hazard Classification	Hazardous according to the criteria of Safe Work Australia under Model WHS Regulations
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3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Calcium chloride, dihydrate	CaCl ₂ ·2H ₂ O	10035-04-8	<=100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth, then drink plenty of water. Do not induce vomiting. Call a Poison Centre or doctor/physician for advice.
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: Wash with plenty of soap and water. Take off contaminated clothing and wash 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	No information available.

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	Non-combustible; Material does not burn.
Extinguishing Media	If material is involved in a fire, use dry chemical, Carbon dioxide (CO ₂), foam or water spray for extinction. Use extinguishing media appropriate for surrounding conditions.
Fire and Explosion Hazard	Ambient fire may liberate hazardous vapours.
Hazardous Products of Combustion	Fire or heat may produce irritating, toxic and/or corrosive fumes, including Calcium oxide, Hydrogen chloride.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may pollute waterways.
Personal Protective Equipment	Wear self-contained breathing apparatus (SCBA) and chemical splash suit. SCBA and structural firefighter's uniform may provide limited protection.
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. Do not touch or walk through spilled material. Avoid generating dust. Avoid breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	Collect material (take up dry) and seal in properly labelled containers for disposal (see SECTION 13). *Caution: May react exothermically on contact with water.
Containment	Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas.
Decontamination	Wash area down with excess water.
Environmental Precautionary Measures	Avoid any uncontrolled release of material. If environmental contamination has occurred, advise local emergency services.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
Personal Precautionary Measures	Use personal protective equipment as required (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. Use personal protective equipment as required (see SECTION 8).
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed when not in use - check

regularly for spills. Protect from moisture (hygroscopic; reacts with water). Keep away from incompatible materials (see SECTION 10).

Container Keep in the original, properly labelled container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No specific exposure standards are available for this product. For dusts 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 ; TWA = 3 mg/m ³ (respirable dust).
Exposure Limits	No Data Available
Biological Limits	No information available.
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.
Personal Protection Equipment	- Respiratory protection: Wear respiratory protection in case of inadequate ventilation or an inhalation risk exists. Recommended: Dust mask/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 (refer to AS/NZS 1337). - Hand protection: Handle with gloves. Recommended: Impervious gloves, e.g. nitrile rubber (refer to AS/NZS 2161.1). - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls (cotton), safety shoes; Chemical-resistant apron when large quantities are handled.
Special Hazards Precautions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Wash face, hands and any exposed skin thoroughly after handling. Wash contaminated clothing and other protective equipment before storage or re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Flakes, powder, granules, pellets
Odour	Odourless
Colour	White
pH	9 - 11 (5% CaCl ₂ soln. @ 20°C)
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	>=175 °C
Freezing Point	No Data Available
Solubility	Soluble in water - Soluble in alcohols
Specific Gravity	1.85
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	800 - 900 kg/m ³
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	1.85 g/cm ³
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	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	Product is strongly hygroscopic.
Potential for Dust Explosion	No information available.
Fast or Intensely Burning Characteristics	No information available.
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	Non-combustible; Material does not burn.
Reactions That Release Gases or Vapours	Fire or heat may produce irritating, toxic and/or corrosive fumes, including Calcium oxide, Hydrogen chloride.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	May react exothermically on contact with water.
Chemical Stability	Stable under ordinary conditions of storage and use.
Conditions to Avoid	Avoid dust formation. Protect from moisture/humidity.
Materials to Avoid	Incompatible/reactive with strong acids, strong bases, bromine trifluoride, water, zinc, polymerisable materials.
Hazardous Decomposition Products	Fire or heat may produce irritating, toxic and/or corrosive fumes, including Calcium oxide, Hydrogen chloride.
Hazardous Polymerisation	Will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	- Acute toxicity: May be harmful if swallowed; May cause gastrointestinal irritation, with abdominal pain, nausea, vomiting and diarrhoea. - Skin corrosion/irritation: Skin contact may cause irritation. - Eye damage/irritation: Causes serious eye irritation; May cause redness, tearing, stinging, blurred vision. - Respiratory/skin sensitisation: Not expected to cause sensitisation of the respiratory tract or the skin. - Germ cell mutagenicity: Not considered to be mutagenic. - Carcinogenicity: Not considered to be carcinogenic. - Reproductive toxicity: Not considered to be toxic to reproduction or development. - STOT (single exposure): Inhalation of dusts may cause respiratory tract irritation. - STOT (repeated exposure): Repeated or prolonged exposure is not expected to cause specific target organ toxicity. - Aspiration toxicity: Not expected to be an aspiration hazard.
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Acute**Ingestion**

Acute toxicity (Oral):
 For Calcium chloride (CAS No. 10043-52-4):
 - LD50, Rat (male): 2,120 - 3,798 mg/kg bw.
 - LD50, Rat (female): 2,361 - 4,179 mg/kg bw.
 - LD50, Rat (combined male & female): 2,301 mg/kg bw. [ECHA].

Carcinogen Category

None

12. ECOLOGICAL INFORMATION**Ecotoxicity**

No information available.

Persistence/Degradability

No information available.

Mobility

No information available.

Environmental Fate

Prevent entry into drains and waterways.

Bioaccumulation Potential

No information available.

Environmental Impact

No Data Available

13. DISPOSAL CONSIDERATIONS**General Information**

Dispose of contents/container via a licensed waste contractor and in accordance with local/regional/national regulations.

Special Precautions for Land Fill

No information available.

14. TRANSPORT INFORMATION**Land Transport (Australia)****ADG Code****Proper Shipping Name**

Calcium chloride, dihydrate

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 (Fiji)**Proper Shipping Name**

Calcium chloride, dihydrate

Class

No Data Available

Subsidiary Risk(s)

No Data Available

No Data Available

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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	Calcium chloride, dihydrate
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 (New Zealand)

NZS5433

Proper Shipping Name	Calcium chloride, dihydrate
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	Calcium chloride, dihydrate
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	Calcium chloride, dihydrate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available

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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	Calcium chloride, dihydrate
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)
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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	HSR002503 - Additives, Process Chemicals and Raw Materials (Subsidiary Hazard) Group Standard 2020
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National/Regional Inventories

Australia (AIIIC)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	233-140-8
Europe (REACH)	Not Determined
Japan (ENCS/METI)	Not Determined

Korea (KECI)	Not Determined
Malaysia (List of Classified Substances)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Not Determined
Taiwan (TCSI)	Not Determined
USA (TSCA)	Not Determined
Mexico (INSQ)	Not Determined

16. OTHER INFORMATION

Related Product Codes

CACHLF1000, CACHLF1001, CACHLF1002, CACHLF1500, CACHLF1501, CACHLF1502, CACHLF1700, CACHLF3100, CACHLF3660, CACHLF4100, CACHLF5500, CACHLF5510, CACHLF5600, CACHLF5602, CACHLF5615, CACHLF5640, CACHLF5641, CACHLF5645, CACHLF5650, CACHLF5700, CACHLF6200, CACHLF6201, CACHLF6202, CACHLF6203, CACHLF6210, CACHLF6215, CACHLF7400, CACHLF7700, CACHLO0100, CACHLO0200, CACHLO0210, CACHLO0211, CACHLO0300, CACHLO0410, CACHLO0411, CACHLO0500, CACHLO0600, CACHLO0704, CACHLO0810, CACHLO0811, CACHLO1100, CACHLO1300, CACHLO1400, CACHLO1500, CACHLO1501, CACHLO1502, CACHLO1505, CACHLO1506, CACHLO1507, CACHLO1510, CACHLO1515, CACHLO1600, CACHLO1601, CACHLO1610, CACHLO1620, CACHLO1630, CACHLO1631, CACHLO1632, CACHLO1640, CACHLO1641, CACHLO1642, CACHLO1700, CACHLO1701, CACHLO1760, CACHLO1770, CACHLO1780, CACHLO1800, CACHLO1801, CACHLO1802, CACHLO1803, CACHLO1930, CACHLO1931, CACHLO1940, CACHLO1950, CACHLO1960, CACHLO1970, CACHLO1980, CACHLO1985, CACHLO1986, CACHLO1987, CACHLO2200, CACHLO2201, CACHLO2202, CACHLO2203, CACHLO2204, CACHLO2205, CACHLO2210, CACHLO2220, CACHLO2222, CACHLO2300, CACHLO2301, CACHLO2302, CACHLO2400, CACHLO2401, CACHLO2402, CACHLO2500, CACHLO2501, CACHLO2502, CACHLO2503, CACHLO2504, CACHLO2505, CACHLO2506, CACHLO2507, CACHLO2508, CACHLO2509, CACHLO2510, CACHLO2520, CACHLO2530, CACHLO2600, CACHLO2601, CACHLO2602, CACHLO2603, CACHLO2604, CACHLO2605, CACHLO2606, CACHLO2607, CACHLO2608, CACHLO2609, CACHLO2610, CACHLO2620, CACHLO2630, CACHLO2700, CACHLO2701, CACHLO2720, CACHLO2730, CACHLO2800, CACHLO2801, CACHLO2820, CACHLO2830, CACHLO3000, CACHLO3001, CACHLO3002, CACHLO3003, CACHLO3004, CACHLO3005, CACHLO3006, CACHLO3007, CACHLO3020, CACHLO3021, CACHLO3030, CACHLO3032, CACHLO3033, CACHLO3046, CACHLO3047, CACHLO3048, CACHLO3100, CACHLO3101, CACHLO3102, CACHLO3103, CACHLO3104, CACHLO3150, CACHLO3200, CACHLO3201, CACHLO3300, CACHLO3301, CACHLO3302, CACHLO3303, CACHLO3304, CACHLO3305, CACHLO3306, CACHLO3307, CACHLO3308, CACHLO3309, CACHLO3310, CACHLO3311, CACHLO3312, CACHLO3313, CACHLO3314, CACHLO3315, CACHLO3316, CACHLO3317, CACHLO3333, CACHLO3400, CACHLO3401, CACHLO3500, CACHLO3501, CACHLO3502, CACHLO3600, CACHLO3601, CACHLO3700, CACHLO3701, CACHLO3800, CACHLO3801, CACHLO3900, CACHLO4000, CACHLO4001, CACHLO4100, CACHLO4520, CACHLO4530, CACHLO4650, CACHLO4655, CACHLO4670, CACHLO4900, CACHLO4950, CACHLO5000, CACHLO5010, CACHLO5011, CACHLO5012, CACHLO5013, CACHLO5014, CACHLO5020, CACHLO5022, CACHLO5023, CACHLO5024, CACHLO5051, CACHLO5100, CACHLO5110, CACHLO5111, CACHLO5112, CACHLO5113, CACHLO5120, CACHLO5200, CACHLO5300, CACHLO5301, CACHLO5400, CACHLO5501, CACHLO5601, CACHLO6100, CACHLO6101, CACHLO6220, CACHLO6226, CACHLO6230, CACHLO6240, CACHLO6250, CACHLO6260, CACHLO6290, CACHLO6300, CACHLO6377, CACHLO6378, CACHLO6430, CACHLO6442, CACHLO6450, CACHLO6460, CACHLO6461, CACHLO6462, CACHLO6470, CACHLO6900, CACHLO7000, CACHLO7001, CACHLO7002, CACHLO7010, CACHLO7011, CACHLO7012, CACHLO7015, CACHLO7016, CACHLO7100, CACHLO7200, CACHLO7201, CACHLO7202, CACHLO7203, CACHLO7210, CACHLO7220, CACHLO7221, CACHLO7222, CACHLO7223, CACHLO7250, CACHLO7251, CACHLO7300, CACHLO7310, CACHLO7311, CACHLO7312, CACHLO7400, CACHLO7410, CACHLO7500, CACHLO7501, CACHLO7600, CACHLO7700, CACHLO7730, CACHLO7735, CACHLO7740, CACHLO7741, CACHLO7742, CACHLO7800, CACHLO7801, CACHLO7802, CACHLO7900, CACHLO7910, CACHLO7911, CACHLO7912, CACHLO8000, CACHLO8001, CACHLO8100, CACHLO8120, CACHLO8121, CACHLO8200, CACHLO8300, CACHLO8330, CACHLO8600, CACHLO9000, CACHLO9100, CACHLO9150, CACHLO9200, CACHLO9300, CACHLO9400, CACHLO9700, CACHLO9910, CACHLO9920, CACHLO9921, CACHLO9930, CACHLO9950

Revision	6
Revision Date	22 Mar 2022
Reason for Issue	Update
	< Less Than
	> Greater Than

Key/Legend

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
UN United Nations
wt Weight