

#### 1. IDENTIFICATION

**Product Name** Soda Ash Dense

**Other Names** Soda ash, dense; Sodium carbonate; Sodium carbonate, anhydrous; Washing soda

Uses Cleaning agents and additives; Dishwashing and laundry detergents; Photochemicals; Fillers; Laboratory chemicals; pH-

regulating/buffering agent in cosmetic products; Used in the manufacture of glass; Fuel gas desulphurisation; Water

treatment and paper/pulp industry.

**Chemical Family** No Data Available

**Chemical Formula** Na2CO3

**Chemical Name** Carbonic acid, disodium salt **Product Description** Inorganic (alkaline) salt.

#### **Contact Details of the Supplier of this Safety Data Sheet**

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road	+61-2-97333000

Minto NSW 2566 Australia

Redox Ltd 11 Mayo Road +64-9-2506222

> Wiri Auckland 2104 New Zealand

Redox Inc. 3960 Paramount Boulevard +1-424-675-3200

Suite 107

Lakewood CA 90712

USA

Redox Chemicals Sdn Bhd Level 2, No. 8, Jalan Sapir 33/7 +60-3-5614-2111

Seksyen 33, Shah Alam Premier Industrial Park

40400 Shah Alam Sengalor, Malaysia

## **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

USA & Canada 1-800-424-9300 CN723420 CHEMTREC

+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 2A

**Pictograms** 



Signal Word Warning

Hazard Statements H319 Causes serious eye irritation.

**Precautionary Statements** Prevention **P264** Wash skin thoroughly after handling.

**P280** Wear eye protection/face protection.

Response P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses,

if present and easy to do. Continue rinsing.

**P337 + P313** If eye irritation persists: Get medical advice.

### **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)

### 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

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

## Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Sodium carbonate, anhydrous	Na2CO3	497-19-8	>=99 - 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. Get immediate medical

advice/attention. If vomiting occurs, give further water. 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: 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. Remove contaminated

clothing and loosen remaining clothing. If respiratory symptoms persist, get medical advice/attention. Give artificial

respiration if victim is not breathing. Administer oxygen if breathing is difficult.

**Advice to Doctor** Treat symptomatically.

Medical Conditions Aggravated by No information available.

**Exposure** 

## **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 itself does not burn.

**Extinguishing Media** If material is involved in a fire, use extinguishing measures that are appropriate to local circumstances and the

surrounding environment.

Fire and Explosion Hazard Decomposes on heating, emitting toxic fumes.

**Hazardous Products of** 

Fire or heat may produce irritating, toxic and/or corrosive fumes, including Carbon oxides, Sodium oxides.

Combustion

**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 No Data Available **Lower Explosion Limit 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 - slipping hazard! Avoid dust formation. Avoid

breathing dust and contact with eyes, skin and clothing.

Sweep or vacuum up, but avoid generating dust. Collect and seal in properly labelled containers or drums for disposal **Clean Up Procedures** 

(see SECTION 13).

Containment Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas.

**Decontamination** After cleaning, flush away any residual traces with water.

\*Prevent any mixture with an acid into the sewer/drain (gas formations).

**Environmental Precautionary** 

Measures

Prevent entry into drains and waterways. Local authorities should be advised if significant spillages cannot be contained.

**Evacuation Criteria** Spill or leak area should be isolated immediately. Evacuate personnel to safe areas. Keep unauthorised personnel away.

Wear protective equipment to prevent skin and eye contact and breathing in dust (see SECTION 8). **Personal Precautionary Measures** 

## 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). Avoid extreme heat and contact with incompatible materials (see SECTION 10).

Storage Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep containers closed when not in use - check

regularly for spills. Avoid moisture/humidity. Avoid extreme heat. Keep away from foodstuffs and incompatible materials

(see SECTION 10).

Container Keep in properly labelled original container or suitable packaging material, i.e. Polyethylene, woven plastic material + PE.

Do not store in moisture permeable material.

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General No value assigned for this specific material by Safe Work Australia. For dusts from solid substances without specific

occupational exposure standards:

- Safe Work Australia Exposure Standard (Nuisance dusts): 8 hr TWA = 10 mg/m3, measured as inhalable dust).

- New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m3; TWA = 3 mg/m3 (respirable).

**Exposure Limits** No Data Available

**Biological Limits** No information available.

Engineering Measures Provide appropriate exhaust ventilation at places where dust is formed. Apply technical measures to comply with the

occupational exposure limits.

**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 prevent eye contact. Recommended: Safety glasses with side

shields or protective goggles.

- Hand protection: Handle with gloves. Recommended: Impervious gloves, e.g. neoprene, natural rubber.

- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Long-sleeved protective clothing; Overalls or dust-impervious protective suit; Apron (rubber or plastic); Safety shoes or boots

(rubber or plastic).

**Special Hazards Precaustions** No information available.

Work Hygienic Practices Do not eat, drink or smoke when using this product. Always wash hands before smoking, eating, drinking or using the

toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State Solid

**Appearance** Granular or powder

Odour Odourless
Colour White

pH 10.3 - 11.3 (10 g/L aqueous solution)

Vapour Pressure Negligible (@ No Data Available)

No Data Available

Relative Vapour Density No Data Available

Melting Point 851 °C

**Boiling Point** 

Freezing Point

Solubility

Soluble in water

Specific Gravity

2.53 (Water = 1)

Flash Point

No Data Available

Auto Ignition Temp

Evaporation Rate

Bulk Density

No Data Available

No Data Available

**Corrosion Rate** No Data Available

>=400 °C **Decomposition Temperature** 

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 No Data Available **Volatile Percent** No Data Available **VOC Volume** No Data Available

**Additional Characteristics** 

**Potential for Dust Explosion** No information available. **Fast or Intensely Burning** No information available.

Characteristics

Flame Propagation or Burning

**Rate of Solid Materials** 

**Non-Flammables That Could** No information available.

Contribute Unusual Hazards to a

**Fire** 

**Properties That May Initiate or** 

**Contribute to Fire Intensity** 

**Reactions That Release Gases or** Vapours

Release of Invisible Flammable

Vapours and Gases

Hygroscopic: absorbs moisture or water from surrounding air.

No information available.

Non-combustible; Material itself does not burn.

Decomposes on heating, emitting toxic fumes, including Carbon dioxide.

No information available.

## 10. STABILITY AND REACTIVITY

**General Information** Reacts exothermically with strong acids evolving carbon dioxide. **Chemical Stability** Stable if stored and handled under recommended conditions.

**Conditions to Avoid** Avoid generating dust. Avoid exposure to moisture. Avoid exposure to heat.

**Materials to Avoid** Incompatible/reactive with acids, phosphorus pentoxide, aluminium, lead, magnesium, iron, zinc, fluorine.

**Hazardous Decomposition** 

**Products** 

**Hazardous Polymerisation** 

Decomposes on heating, emitting toxic fumes, including Carbon dioxide.

Hazardous polymerisation does not occur.

## 11. TOXICOLOGICAL INFORMATION

## **General Information**

- Acute toxicity: Low acute toxicity following oral, dermal and inhalation exposure. In case of ingestion, may cause severe irritation, nausea, abdominal pain, vomiting, diarrhoea.
- Skin corrosion/irritation: Prolonged contact may cause skin irritation.
- Eye damage/irritation: Causes serious eye irritation; may cause redness, lachrymation, swelling.
- Respiratory/skin sensitisation: Not a skin sensitiser.
- Germ cell mutagenicity: Not considered to be genotoxic.

- Carcinogenicity: Not considered carcinogenic.
- Reproductive toxicity: Does not show specific reproductive or developmental toxicity.
- STOT (single exposure): In case of inhalation at high concentrations, may cause cough, nose, throat and lung irritation.
- STOT (repeated exposure): Carbonate ions are neutralised under physiological conditions to form bicarbonate ions and/or carbon dioxide, which are major products of all human metabolic activities; therefore, systemic toxicity is not expected. Risk of sore throat, nose bleeds in case of repeated or prolonged inhalation exposure.

- Aspiration toxicity: No information available.

Acute

**Ingestion** Acute toxicity (Oral):

- LD50, Rats: >2,800 mg/kg [Supplier's SDS].

Other Acute toxicity (Dermal):

- LD50, Rabbit: >2,000 mg/kg [Supplier's SDS].

**Inhalation** Acute toxicity (Inhalation):

- LC50, Rat: 2.3 mg/l (2 h) [Supplier's SDS].

Carcinogen Category None

#### 12. ECOLOGICAL INFORMATION

**Ecotoxicity** Aquatic toxicity:

LC50, Fish (Lepomis macrochirus): 300 mg/L (96 h).
EC50, Crustacea (Ceriodaphnia dubia): 200 mg/L (48 h).

Persistence/Degradability Sodium carbonate is an inorganic substance. In the presence of water, it will fully dissociate to sodium and carbonate

ions which will disperse in the various media.

**Mobility** Solid sodium carbonate has a negligible vapour pressure and for this reason it will not be distributed to the atmosphere.

If sodium carbonate is emitted to water it will remain in the water phase. If the pH is decreased then carbonic acid (H2CO3 or CO2) can be formed. If the concentration of carbon dioxide in water is above the water solubility limit, the carbon dioxide will distribute to the atmosphere. If sodium carbonate is emitted to soil it can escape to the atmosphere

as CO2, precipitate as a metal carbonate, form complexes or stay in solution.

**Environmental Fate** Prevent entry into drains and waterways.

**Bioaccumulation Potential** Does not bioaccumulate. The substance dissociates fully on introduction to water.

\*Log Po/w is not applicable for an inorganic compound which dissociates.

**Environmental Impact** No Data Available

### 13. DISPOSAL CONSIDERATIONS

**General Information** If recycling is not practicable, dispose of in accordance with local/regional/national regulations.

Special Precautions for Land Fill Packaging disposal: Where possible, recycling is preferred to disposal or incineration. Clean container with water;

Dispose of rinse water in accordance with local and national regulations.

## 14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name Dense Soda Ash
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)

ADG Code

Proper Shipping Name
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

Class

No Data Available

Subsidiary Risk(s)

No Data Available

No Data Available

No Data Available

UN Number

No Data Available

UN NumberNo Data AvailableHazchemNo Data AvailablePack GroupNo Data AvailableSpecial ProvisionNo Data Available

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

## Land Transport (New Zealand)

NZS5433

 Proper Shipping Name
 Dense Soda Ash

 Class
 No Data Available

 Subsidiary Risk(s)
 No Data Available

 UN Number
 No Data Available

UN NumberNo Data AvailableHazchemNo Data AvailablePack GroupNo Data AvailableSpecial ProvisionNo Data Available

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

## Land Transport (Papua New Guinea)

ADG Code

Proper Shipping Name Dense Sosa Ash
Class No Data Available

Subsidiary Risk(s) No Data Available

No Data Available

UN NumberNo Data AvailableHazchemNo Data AvailablePack GroupNo Data AvailableSpecial ProvisionNo Data Available

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

## **Land Transport (United States of America)**

**US DOT** 

Proper Shipping NameDense Soda AshClassNo Data AvailableSubsidiary Risk(s)No Data Available

No Data Available

UN NumberNo Data AvailableHazchemNo Data AvailablePack GroupNo Data AvailableSpecial ProvisionNo Data Available

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

## **Sea Transport**

IMDG Code

**Proper Shipping Name** Dense Soda Ash Class No Data Available Subsidiary Risk(s) No Data Available **UN Number** No Data Available No Data Available Hazchem **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 NameDense Soda AshClassNo Data AvailableSubsidiary Risk(s)No Data AvailableUN NumberNo Data AvailableHazchemNo Data AvailablePack GroupNo Data AvailableSpecial ProvisionNo 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 ALKALINE SALTS, being the carbonate, silicate or phosphate salts of sodium or potassium alone or in any combination,

are listed in Schedule 5 of the SUSMP in (other) solid preparations, the pH of which in a 10 g/L aqueous solution is more

than 11.5.

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

## **National/Regional Inventories**

Australia (AIIC) Listed

Canada (DSL) Listed

Canada (NDSL) Not Listed

China (IECSC) Listed

**Europe (EINECS)** 207-838-8

Europe (REACh) Listed

Japan (ENCS/METI) 1-164

Korea (KECI) KE-31380

Malaysia (EHS Register) Listed

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**

 $\textbf{Related Product Codes} \hspace{1.5cm} \textbf{SOCABR1000, SOCABR2000, SOCARB0005, SOCARB0215, SOCARB1000, SOCARB1001, SOCARB1002, SOCARB1000, SOCA$ 

SOCARB1003, SOCARB1004, SOCARB1005, SOCARB1006, SOCARB1007, SOCARB1008, SOCARB1009, SOCARB1010, SOCARB1011, SOCARB1012, SOCARB1013, SOCARB1014, SOCARB1015, SOCARB1016, SOCARB1017, SOCARB1018,

SOCARB1019, SOCARB1022, SOCARB1100, SOCARB1101, SOCARB1102, SOCARB1103, SOCARB1104, SOCARB1105, SOCARB1106, SOCARB1107, SOCARB1108, SOCARB1109, SOCARB1110, SOCARB1112, SOCARB1113, SOCARB1114, SOCARB1140, SOCARB1150, SOCARB1160, SOCARB1200, SOCARB1201, SOCARB1202, SOCARB1210, SOCARB1211, SOCARB1212, SOCARB1240, SOCARB1300, SOCARB1500, SOCARB1501, SOCARB1502, SOCARB1650, SOCARB1700, SOCARB1807, SOCARB1808, SOCARB1809, SOCARB1810, SOCARB1811, SOCARB1812, SOCARB1813, SOCARB1814, SOCARB1815, SOCARB1816, SOCARB1817, SOCARB1818, SOCARB2100, SOCARB2150, SOCARB2500, SOCARB2501, SOCARB2502, SOCARB2503, SOCARB2504, SOCARB2505, SOCARB2515, SOCARB2525, SOCARB2530, SOCARB2600, SOCARB3000, SOCARB3010, SOCARB3020, SOCARB3030, SOCARB3040, SOCARB4000, SOCARB4600, SOCARB4700, SOCARB4701, SOCARB5000, SOCARB5001, SOCARB5100, SOCARB5200, SOCARB5300, SOCARB5500, SOCARB5501, SOCARB5510, SOCARB5600, SOCARB5601, SOCARB5602, SOCARB5605, SOCARB5606, SOCARB5608, SOCARB5609, SOCARB5610, SOCARB5611, SOCARB5700, SOCARB5800, SOCARB5900, SOCARB6000, SOCARB6001, SOCARB6100, SOCARB6200, SOCARB6500, SOCARB6501, SOCARB6600, SOCARB6601, SOCARB6700, SOCARB7000, SOCARB7001, SOCARB7002, SOCARB7003, SOCARB8000, SOCARB8001, SOCARB8002, SOCARB8003, SOCARB8100, SOCARB8101, SOCARB9000, SOCARB9200, SOCARB9201, SOCARB9500, SOCARB9600, SOCARB9990, SOCARF1000, SOCARF1001, SOCARF1100, SOCARF2500, SOCARF3000, SOCARF4000, SOCARF5000, SOCARF5001, SOCARF5002, SOCARF5100, SOCARF5200, SOCARF9900, SODCAB1000, SODCAB1001, SODCAB1002, SODCAB1003, SODCAB1004, SODCAB1005, SODCAB1006, SODCAB1100, SODCAB1101, SODCAB1102, SODCAB1103, SODCAB1104, SODCAB1105, SODCAB1106, SODCAB1107, SODCAB1108, SODCAB1109, SODCAB1140, SODCAB145, SODCAB1200, SODCAB1201, SODCAB1210, SODCAB1240, SODCAB2100, SODCAB2101, SODCAB2102, SODCAB2151, SODCAB2600, SODCAB2601, SODCAB2700, SODCAB2800, SODCAB2900, SODCAB2901, SODCAB3000, SODCAB3001, SODCAB3100, SODCAB3101, SODCAB3200, SODCAB3300, SODCAB3400, SODCAB3500, SODCAB3501, SODCAB3503, SODCAB3600, SODCAB3700, SODCAB3800, SODCAB3900, SODCAB3901, SODCAB3902, SODCAB4000, SODCAB4100, SODCAB4200, SODCAB4300, SODCAB4400, SODCAB5000, SODCAB5001, SODCAB5002, SODCAB5500, SODCAB5800, SODCAB5801, SODCAB5900, SODCAB5910, SODCAB6000, SODCAB6001, SODCAB6010, SODCAB6015, SODCAB6100, SODCAB6500, SODCAB6501, SODCAB6600, SODCAB6601, SODCAB6605, SODCAB7000, SODCAB7500, SODCAB7600, SODCAB8000, SODCAB8800, SODCAB9000, SODCAB9500, SODCAB9600, SODCAL1000, SODCAR0500, SODCAR0501, SODCAR0502, SODCAR0503, SODCAR1000, SODCAR1001, SODCAR1002, SODCAR1003, SODCAR1004, SODCAR1005, SODCAR1006, SODCAR1007, SODCAR1008, SODCAR1009, SODCAR1010, SODCAR1100, SODCAR1101, SODCAR1200, SODCAR2000, SODCAR2001, SODCAR3000, SODCAR3001, SODCAR3100, SODCAR3300, SODCAR3400, SODCAR3500, SODCAR4000, SODCAR5000, SODCAR5001, SODCAR5500, SODCAR6500, SODCAR7000, SODCAR7500, SODCAR9000, SODCAR9500

Revision

5

**Revision Date** 

11 Nov 2021

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/I 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

**Ib** 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.

Itr or  $\boldsymbol{L}$  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

mmH20 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