## Chemwatch

## 2329, 2330, 3703, 3704 TOP TEC 4100 5W-40 1L, 5L, 60L, 205L

Liqui Moly GmbH
Chemwatch: 48-0458
Version No: 4.1.1.1
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements S.GHS.USA.EN

## SECTION 1 IDENTIFICATION

## Product Identifier

| Product name | $2329,2330,3703,3704$ TOP TEC 4100 5W-40 1L, 5L, 60L, 205L |
| ---: | :--- |
| Synonyms | Item No. 2329, 2330,3703,3704 |
| Other means of <br> identification | Not Available |
| Recommended use of the chemical and restrictions on use |  |
| Relevant identified uses Use according to manufacturer's directions. <br> Motor Oil. |  |

## SECTION 2 HAZARD(S) IDENTIFICATION

Classification of the substance or mixture
| CHEMWATCH HAZARD RATINGS

|  |  |  | NFPA 704 diamond |
| :---: | :---: | :---: | :---: |
| Flammability | 1 |  | - |
| Toxicity | 0 |  | 1 |
| Body Contact | 0 |  |  |
| Reactivity | 1 | $0=$ Minimum | $0 \times$ |
| Chronic | 0 | $\begin{aligned} & 2=\text { Moderate } \\ & 3=\text { High } \\ & 4=\text { Extreme } \end{aligned}$ |  |

Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue $=$ Health Red $=$ Fire Yellow $=$ Reactivity White $=$ Special (Oxidizer or water reactive substances)

| Classification | Not Applicable |
| :---: | :---: |
| Label elements |  |
| GHS label elements | Not Applicable |

## Hazard statement(s)

Not Applicable
Hazard(s) not otherwise specified
Not Applicable

Precautionary statement(s) Prevention
Not Applicable
Precautionary statement(s) Response

## Not Applicable

Precautionary statement(s) Storage
Not Applicable
Precautionary statement(s) Disposa
Not Applicable

## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

## Substances

See section below for composition of Mixtures

## Mixtures

| CAS No | \%[weight] | Name |
| :--- | :--- | :--- |
| $72623-87-1$. | $1-<10$ | lubricating oils, petroleum C20-50, hydrotreated neutral |

## SECTION 4 FIRST-AID MEASURES

Description of first aid measures

| Eye Contact | If this product comes in contact with eyes: <br> - Wash out immediately with water. <br> - If irritation continues, seek medical attention. <br> - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| :---: | :---: |
| Skin Contact | If skin or hair contact occurs: <br> - Flush skin and hair with running water (and soap if available). <br> - Seek medical attention in event of irritation. |
| Inhalation | - If fumes, aerosols or combustion products are inhaled remove from contaminated area. <br> - Other measures are usually unnecessary. |
| Ingestion | - Immediately give a glass of water. <br> - First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. |

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## SECTION 5 FIRE-FIGHTING MEASURES

## Extinguishing media

- Foam.
- Dry chemical powder.

BCF (where regulations permit)
Carbon dioxide

Special hazards arising from the substrate or mixture

| Fire Incompatibility | - Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result |
| :---: | :---: |
| Special protective equipment and precautions for fire-fighters |  |
| Fire Fighting | - Alert Fire Brigade and tell them location and nature of hazard. <br> - Wear full body protective clothing with breathing apparatus. <br> - Prevent, by any means available, spillage from entering drains or water course. <br> - Use water delivered as a fine spray to control fire and cool adjacent area. |
| Fire/Explosion Hazard | - Combustible. <br> - Slight fire hazard when exposed to heat or flame. <br> - Heating may cause expansion or decomposition leading to violent rupture of containers. <br> - On combustion, may emit toxic fumes of carbon monoxide (CO). <br> Combustion products include: <br> carbon dioxide (CO2) <br> other pyrolysis products typical of burning organic material. <br> May emit poisonous fumes. |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
See section 8

## Environmental precautions

See section 12

Methods and material for containment and cleaning up

| Minor Spills | - Remove all ignition sources. <br> - Clean up all spills immediately. <br> - Avoid breathing vapours and contact with skin and eyes. <br> - Control personal contact with the substance, by using protective equipment. |
| :---: | :---: |
| Major Spills | Moderate hazard. <br> - Clear area of personnel and move upwind. <br> - Alert Fire Brigade and tell them location and nature of hazard. <br> - Wear breathing apparatus plus protective gloves. |

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

| Safe handling | - Avoid all personal contact, including inhalation. <br> - Wear protective clothing when risk of exposure occurs. <br> - Use in a well-ventilated area. <br> - Prevent concentration in hollows and sumps. |
| :---: | :---: |
| Other information | - Store in original containers. <br> - Keep containers securely sealed. <br> - No smoking, naked lights or ignition sources. <br> - Store in a cool, dry, well-ventilated area. |

Conditions for safe storage, including any incompatibilities

| Suitable container | * Metal can or drum <br> * Packaging as recommended by manufacturer. <br> * Check all containers are clearly labelled and free from leaks. |
| :---: | :--- |
| Storage incompatibility | * Avoid reaction with oxidising agents |

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION



## Exposure controls

| Appropriate engineering |  |
| ---: | :--- |
| controls | Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly <br> effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. <br> The basic types of engineering controls are: <br> Process controls which involve changing the way a job activity or process is done to reduce the risk. <br> Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and <br> "removes" air in the work environment. |
| Personal protection | Cafety glasses with side shields <br> Chemical goggles. <br> Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of <br> lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of <br> chemicals in use and an account of injury experience. |
| Skin protection | See Hand protection below |


| Hands/feet protection | The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. <br> The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final choice. <br> Personal hygiene is a key element of effective hand care. <br> - Wear chemical protective gloves, e.g. PVC. <br> - Wear safety footwear or safety gumboots, e.g. Rubber |
| :---: | :---: |
| Body protection | See Other protection below |
| Other protection | - Overalls. <br> - P.V.C. apron. <br> - Barrier cream. |
| Thermal hazards | Not Available |

## Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 \& 1715, EN 143:2000 \& 149:2001, ANSI Z88 or national equivalent)
Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
| :---: | :---: | :---: | :---: |
| up to $10 \times$ ES | A-AUS P2 | - | A-PAPR-AUS / Class 1 P2 |
| up to $50 \times$ ES | - | A-AUS / Class 1 P2 | - |
| up to $100 \times$ ES | - | A-2 P2 | A-PAPR-2 P2 ^ |

$\wedge$ - Full-face
$\mathrm{A}($ All classes $)=$ Organic vapours, B AUS or $\mathrm{B} 1=$ Acid gasses, $\mathrm{B} 2=$ Acid gas or hydrogen cyanide $(\mathrm{HCN}), \mathrm{B} 3=$ Acid gas or hydrogen cyanide(HCN), $\mathrm{E}=\mathrm{Sulfur}$ dioxide(SO2), $\mathrm{G}=\mathrm{Agricultural}$ chemicals, $\mathrm{K}=$ Ammonia( NH 3 ), $\mathrm{Hg}=$ Mercury, $\mathrm{NO}=$ Oxides of nitrogen, $\mathrm{MB}=$ Methyl bromide, $\mathrm{AX}=$ Low boiling point organic compounds(below 65 degC)

Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content. The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| Appearance | Brown colour liquid with characteristic odour; not miscible with water. |  |  |
| :---: | :---: | :---: | :---: |
| Physical state | Liquid | Relative density (Water = 1) | 0.855 |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature <br> ( ${ }^{\circ} \mathrm{C}$ ) | Not Available |
| pH (as supplied) | Not Applicable | Decomposition temperature | Not Available |
| Melting point / freezing point $\left({ }^{\circ} \mathrm{C}\right)$ | -39 | Viscosity (cSt) | 86.5 |
| Initial boiling point and boiling range ( ${ }^{\circ} \mathrm{C}$ ) | Not Available | Molecular weight ( $\mathrm{g} / \mathrm{mol}$ ) | Not Applicable |
| Flash point ( ${ }^{\circ} \mathrm{C}$ ) | 236 | Taste | Not Available |
| Evaporation rate | Not Available | Explosive properties | Not Available |
| Flammability | Not Applicable | Oxidising properties | Not Available |
| Upper Explosive Limit (\%) | Not Available | Surface Tension (dyn/cm or $\mathrm{mN} / \mathrm{m}$ ) | Not Available |
| Lower Explosive Limit (\%) | Not Available | Volatile Component (\%vol) | Not Available |
| Vapour pressure (kPa) | Not Available | Gas group | Not Available |
| Solubility in water (g/L) | Immiscible | pH as a solution (1\%) | Not Available |
| Vapour density (Air = 1) | Not Available | VOC g/L | Not Available |

SECTION 10 STABILITY AND REACTIVITY

| Reactivity | See section 7 |
| ---: | :--- |
| Chemical stability | r Unstable in the presence of incompatible materials. <br>  <br>  <br> r Product is considered stable. <br> Hazardous polymerisation will not occur. |
| Possibility of hazardous |  |
| reactions | See section 7 |
| Conditions to avoid | See section 7 |
| Incompatible materials | See section 7 |
| Hazardous decomposition |  |
| products | See section 5 |

## SECTION 11 TOXICOLOGICAL INFORMATION

| Inhaled | The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. |
| :---: | :---: |
| Ingestion | The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. |
| Skin Contact | The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis. The material is unlikely to produce an irritant dermatitis as described in EC Directives . <br> Open cuts, abraded or irritated skin should not be exposed to this material <br> Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. |
| Eye | Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn). |
| Chronic | Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. |
| $\begin{array}{r} \text { 2329, } 2330,3703,3704 \text { TOP } \\ \text { TEC } 4100 \text { 5W-40 1L, } 5 \mathrm{~L}, 60 \mathrm{~L}, \\ 205 \mathrm{~L} \end{array}$ | TOXICITY IRRITATION |
|  | Not Available |
| lubricating oils, petroleum C20-50, hydrotreated neutral | TOXICITY IRRITATION |
|  | Dermal (rabbit) LD50: >2000 mg/kg ${ }^{[1]}$ Not Available |
|  | Inhalation (rat) LC50: $>3.9 \mathrm{mg} / / / 4 \mathrm{hr}^{[1]}$ |
|  | Inhalation (rat) LC50: $>4.7 \mathrm{mg} / / / 4 \mathrm{hr}^{[1]}$ |
|  | Inhalation (rat) LC50: $>5 \mathrm{mg} / / / 4 \mathrm{hr}{ }^{[1]}$ |
|  | Inhalation (rat) LC50: $>5.2 \mathrm{mg} / / / 4 \mathrm{hr}^{[1]}$ |
|  | Inhalation (rat) LC50: $>5.3 \mathrm{mg} / / / 4 \mathrm{hr}^{[1]}$ |
|  | Inhalation (rat) LC50: $10.5 \mathrm{mg} / / 4 \mathrm{hr}^{[1]}$ |
|  | Inhalation (rat) LC50: $5.7 \mathrm{mg} / / / 4 \mathrm{hr}{ }^{[1]}$ |
|  | Inhalation (rat) LC50: $9.6 \mathrm{mg} / / / 4 \mathrm{hr}^{[1]}$ |
|  | Oral (rat) LD50: >2000 mg/kg ${ }^{[1]}$ |
| Legend: | 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances |

## LUBRICATING OILS, PETROLEUM C20-50, HYDROTREATED NEUTRAL

 extracted from RTECS - Register of Toxic Effect of chemical Substances
## Acute Toxicity

Skin Irritation/Corrosion

## Serious Eye

 Damage/lrritationRespiratory or Skin sensitisation

Mutagenicity

The materials included in the Lubricating Base Oils category are related from both process and physical-chemical perspectives; The potential toxicity of a specific distillate base oil is inversely related to the severity or extent of processing the oil has undergone, since:

- The adverse effects of these materials are associated with undesirable components, and
- The levels of the undesirable components are inversely related to the degree of processing;
- Distillate base oils receiving the same degree or extent of processing will have similar toxicities:
- The potential toxicity of residual base oils is independent of the degree of processing the oil receives
- The reproductive and developmental toxicity of the distillate base oils is inversely related to the degree of processing

Unrefined \& mildly refined distillate base oils contain the highest levels of undesirable components, have the largest variation of hydrocarbon molecules and have shown the highest potential carcinogenic and mutagenic activities. Highly and severely refined distillate base oils are produced from unrefined and mildly refined oils by removing or transforming undesirable components.
For highly and severely refined distillate base oils:
In animal studies, the acute, oral, semilethal dose is $>5 \mathrm{~g} / \mathrm{kg}$ body weight and the semilethal dose by skin contact is $>2 \mathrm{~g} / \mathrm{kg}$ body weight. The semilethal concentration for inhalation is 2.18 to $>4 \mathrm{mg} / \mathrm{L}$. The materials have varied from "non-irritating" to "moderately irritating" when tested for skin and eye irritation. Testing for sensitisation has been negative.

| $\theta$ | Carcinogenicity | $\theta$ |
| :---: | :---: | :---: |
| $\theta$ | Reproductivity | $\theta$ |
| $\theta$ | STOT - Single Exposure | $\theta$ |
| $\theta$ | STOT - Repeated Exposure | $\theta$ |
| $\theta$ | Aspiration Hazard | Q |
|  | Legend: $\quad \mathbf{X}$ - Data available but does not fill the criteria for classification <br> - Data required to make classification available <br> Q - Data Not Available to make classification |  |

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

| Ingredient | Endpoint | Test Duration (hr) | Species | Value | ource |
| :---: | :---: | :---: | :---: | :---: | :---: |


| lubricating oils, petroleum <br> C20-50, hydrotreated <br> neutral | EC50 | 48 | Crustacea | $>1000 \mathrm{mg} / \mathrm{L}$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| lubricating oils, petroleum <br> C20-50, hydrotreated <br> neutral | EC50 | 48 | Crustacea | 1 |  |
| lubricating oils, petroleum <br> C20-50, hydrotreated <br> neutral | NOEC | 504 | Crustacea | $>1000 \mathrm{mg} / \mathrm{L}$ |  |

Legend: Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data
for lubricating oil base stocks:
Vapor Pressure Vapor pressures of lubricating base oils are reported to be negligible. In one study, the experimentally measured vapour pressure of a solvent-dewaxed heavy paraffinic distillate base oil was $1.7 \times 10 \mathrm{exp}-4 \mathrm{~Pa}$. Since base oils are mixtures of C 15 to C 50 paraffinic, naphthenic, and aromatic hydrocarbon isomers, representative components of those structures were selected to calculate a range of vapor pressures. The estimated vapor pressure values for these selected components of base oils ranged from $4.5 \times 10 \mathrm{exp}-1 \mathrm{~Pa}$ to $2 \times 10 \mathrm{exp}-13 \mathrm{~Pa}$.
DO NOT discharge into sewer or waterways

Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
| :--- | :--- | :--- |
|  | No Data available for all ingredients | No Data available for all ingredients |

Bioaccumulative potential

| Ingredient | Bioaccumulation |
| :--- | :--- |
|  | No Data available for all ingredients |
| Mobility in soil |  |
| Ingredient | Mobility |
|  | No Data available for all ingredients |

SECTION 13 DISPOSAL CONSIDERATIONS

## Waste treatment methods

|  | Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. <br> A Hierarchy of Controls seems to be common - the user should investigate: <br> - Reduction <br> - Reuse <br> - Recycling <br> - Disposal (if all else fails) |
| :---: | :---: |
| Product / Packaging disposal | This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. <br> - DO NOT allow wash water from cleaning or process equipment to enter drains. <br> - It may be necessary to collect all wash water for treatment before disposal. <br> - In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. <br> - Where in doubt contact the responsible authority. <br> - Recycle wherever possible or consult manufacturer for recycling options. <br> - Consult State Land Waste Authority for disposal. <br> - Bury or incinerate residue at an approved site. <br> - Recycle containers if possible, or dispose of in an authorised landfill. |

## SECTION 14 TRANSPORT INFORMATION

Labels Required
Marine Pollutant

Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

## Transport in bulk according to Annex II of MARPOL and the IBC code <br> Not Applicable

## SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture
| LUBRICATING OILS, PETROLEUM C20-50, HYDROTREATED NEUTRAL(72623-87-1.) IS FOUND ON THE FOLLOWING REGULATORY LISTS

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
US - Alaska Limits for Air Contaminants
US - California Permissible Exposure Limits for Chemical Contaminants
US - California Proposition 65 - Carcinogens
US - Hawaii Air Contaminant Limits
US - Idaho - Limits for Air Contaminants
US - Michigan Exposure Limits for Air Contaminants
US - Minnesota Permissible Exposure Limits (PELs)
US - Oregon Permissible Exposure Limits (Z-1)
US - Pennsylvania - Hazardous Substance List
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants

US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants
US - Washington Permissible exposure limits of air contaminants
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants US ACGIH Threshold Limit Values (TLV)
US ACGIH Threshold Limit Values (TLV) - Carcinogens
US National Toxicology Program (NTP) 14th Report Part A Known to be Human Carcinogens US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Levels (PELs) - Table Z1
US Priority List for the Development of Proposition 65 Safe Harbor Levels - No Significant Risk Levels (NSRLs) for Carcinogens and Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

## Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)
| SECTION 311/312 HAZARD CATEGORIES

| Immediate (acute) health hazard | No |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Delayed (chronic) health hazard | No |
| Fire hazard | No |
| Pressure hazard | No |
| Reactivity hazard | No |

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)
None Reported

## State Regulations

US. CALIFORNIA PROPOSITION 65
WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm

US - CALIFORNIA PREPOSITION 65 - CARCINOGENS \& REPRODUCTIVE TOXICITY (CRT): LISTED SUBSTANCE
Soots, tars, and mineral oils (untreated and mildly treated oils and used engine oils) Listed

| National Inventory | Status |
| :--- | :--- |
| Australia - AICS | Y |
| Canada - DSL | Y |
| Canada - NDSL | N (lubricating oils, petroleum C20-50, hydrotreated neutral) |
| China - IECSC | Y |
| Europe - EINEC / ELINCS / <br> NLP | Y |
| Japan - ENCS | N (lubricating oils, petroleum C20-50, hydrotreated neutral) |
| Korea - KECI | Y |
| New Zealand - NZloC | Y |
| Philippines - PICCS | Y |
| USA - TSCA | $\mathrm{Y}=$ All ingredients are on the inventory |
| Legend: | $\mathrm{N}=$ Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets) |

## SECTION 16 OTHER INFORMATION

## Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

## Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC-STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value


[^0]:    Most important symptoms and effects, both acute and delayed
    See Section 11

    Indication of any immediate medical attention and special treatment needed
    Treat symptomatically.

