1. IDENTIFICATION

PRODUCT NAME: Rubber Sealing Compound
OTHER NAMES: Caravan Sealing Compound, Caravan Stop Leak
AVAILABLE COLOURS: 4972 Cream / 7114 White
U.N. NUMBER: 1263
CAS NUMBER: 108-88-3
DANGEROUS GOODS CLASS: 3.1 (Highly flammable liquid)
PACKAGING GROUP: II
SUBSIDIARY RISK: None
HAZCHEM CODE: 3(Y)E
POISONS SCHEDULE: S5
EPG: 3A2

USE: To fill and repair minor holing or seam expansion on caravan/annex roofs, awnings and truck bodies.
For Industrial Use Only In Areas Complying With Relevant Regulations.

PHYSICAL DESCRIPTION / PROPERTIES
High viscosity, thixotropic paste. Breaks down under high shear forces.
Strong pungent, aromatic hydrocarbon odour.
MELTING POINT (°C): -95.0 (liquid) (Toluene)
MELTING POINT (°C): 95.0 * (dry paint) (Chlorinated Polymers)
BOILING POINT (°C): 110 - 112 (Toluene)
VAPOR PRESSURE (kPa @ 15°C): 2.2 (Toluene)
VAPOR PRESSURE (kPa @ 20°C): 2.93 (Toluene)
VAPOR PRESSURE (kPa @ 38°C): 7.3 (Toluene)
RELATIVE VAPOR DENSITY (@ 15°C): 3.14 (Air = 1) (Toluene)
SPECIFIC GRAVITY (@ 20°C): 1.175 ± 0.005 (WATER =1)
% VOLATILES (by volume): 38.0 ± 0.005
EVAPORATION RATE: 2.31 - 2.40 (Butyl Acetate =1) (Toluene)
FLASH POINT (°C): 5.0 - 7.0 TAG CLOSED CUP (Toluene)
EXPLOSIVE LIMITS (% Volume): 1.0 LEL / 7.1 UEL (Toluene)
AUTOIGNITION TEMPERATURE (°C): 538.0 - 550.0 (Toluene)
pH VALUE: Not applicable
Conversion Factors: 1 ppm = 3.77 mg/m³ 1 mg/m³ = 0.27 ppm (U.S. EPA 1990)
SOLUBILITY IN WATER: Insoluble in water. Soluble in most aromatic hydrocarbons, chlorinated solvents, esters and ketones.
• Decomposition begins at 100 °C

OTHER PROPERTIES
Liquid paint can readily form flammable mixture.
Prolonged heating at temperatures in excess of 70 °C or heating above 200 °C for short periods of time will result in decomposition and liberation of toxic fumes of hydrogen chloride and/or chlorine.
Because of the release of hydrogen chloride and/or chlorine fumes on strong heating, product is considered to be self-extinguishing.

INGREDIENTS

<table>
<thead>
<tr>
<th>CHEMICAL ENTITY</th>
<th>CAS No.</th>
<th>PROPORTION ( % w/w )</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOLUENE</td>
<td>108-88-3</td>
<td>30 - 60</td>
</tr>
<tr>
<td>PETROLEUM HYDROCARBONS MIXTURE AROMATIC</td>
<td>N/A</td>
<td>&lt; 10</td>
</tr>
</tbody>
</table>
CARBON TETRACHLORIDE (residual from Chlorinated Polymers)  56-23-5 < 1
CHLORINATED POLYMER  9006-03-5 10 - 30
( Maximum - 2.5% wt. Toluene, 0.50% Carbon Tetrachloride)
TITANIUM DIOXIDE  13463-67-7 10 - 30
CHLORINATED PARAFFINS  63449-39-8 10 - 30
MISCELLANEOUS ADDITIVES  N/A < 10

All components are registered in accordance with Australian Inventory of Chemical Substances.

More detailed information available to medical staff in case of an emergency.

2. HEALTH HAZARD INFORMATION

HEALTH EFFECTS - ACUTE EXPOSURE

ROUTES OF ENTRY
Inhalation, ingestion, eye contact, skin contact/absorption or when consumed with contaminated food or water.

TARGET ORGANS
Eyes, skin, respiratory system, central nervous system, mucous membranes, gastrointestinal tract, blood, liver and kidneys.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE
Skin disorders, damaged skin, respiratory system disease, kidney, liver, or blood disorders

Effects of petroleum hydrocarbons on human health and the environment depend on how much is present and the length and frequency of exposure. Effects also depend on the health of a person or the condition of the environment when exposure occurs.

Prolonged, repeated skin contact with petroleum hydrocarbons may defat the skin resulting in possible irritation and dermatitis.

No adverse health effects are expected if the product is handled in accordance with this Safety Data Sheet and the product label.

The following acute (short term) health effects may occur immediately or shortly after exposure to this product:
High vapour concentrations are irritating to the eyes, nose, mouth, and throat, mucous membranes and the respiratory tract, may cause sore throat, coughing, nausea and vomiting, headaches and dizziness, fatigue, lethargy, weakness, blurred vision, mental sluggishness, insomnia, anorexia, tremor, are anaesthetic and may have other central nervous system effects.
Symptoms of CNS depression and irritation include weakness, dizziness, unconsciousness and convulsions. Gastroenteritis, heartburn, intestinal pain, diarrhoea and loss of appetite may also occur.
Acute exposure may also result in narcosis, pulmonary irritation, pulmonary oedema and severe kidney and liver damage.
Narcotic effects occur at levels below the exposure standard.
Vapour may cause conjunctivitis. Corneal damage may occur after prolonged contact.
Can be absorbed by the skin with resultant toxic effects.
Breathing air which contains high concentrations of solvents may cause delayed lung damage.
Exposure to very high concentrations can be fatal.
Systemic effects from short-term, high concentration exposures may include lung, kidney and brain damage.
Significant exposure to this chemical may adversely affect people with chronic disease of the respiratory system, skin and/or eyes.

SWALLOWED
Considered an unlikely route of entry in commercial/industrial environments.
Small amounts or low dose rates are regarded as practically non-harmful.
Ingestion of small quantities can result in headache, nausea, weakness, dizziness, drowsiness, abdominal pain, cramps, vomiting, diarrhoea and central nervous system depression.
If a large amount ( > 1 ml/kg) is ingested and retained, may cause gastrointestinal irritation, corrosion of the
gastrointestinal tract, damage to the mouth and throat, severe poisoning with kidney damage, central nervous system effects and unconsciousness.

Tends to break into a foam if the patient vomits.

Small amounts of liquid aspirated into respiratory system during ingestion or from vomiting may cause broncho-pneumonia or pulmonary oedema.

If the victim is uncoordinated there is a greater likelihood of vomit entering the lungs and causing subsequent complications.

**EYE**

The vapour and the liquid are both severe eye irritants if exposure is prolonged.
The liquid is highly irritating to the eyes and is capable of causing temporary discomfort or pain (experienced as excessive blinking and tear production) with mild redness of the conjunctiva (similar to wind burn), temporary impairment of vision and other transient eye damage/ulceration.
The liquid is capable of causing corneal damage with loss of sight if not promptly and adequately treated.

**SKIN**

Low order of toxicity.

Contact with the skin may result in irritation with itching and local redness if exposure is prolonged.

Frequent or prolonged contact may cause more severe irritation and can defat and dry the skin leading to discomfort, irritant contact dermatitis and possible tissue destruction.

Can be absorbed through the skin with resultant toxic effects.

Absorption by skin may readily exceed vapour inhalation exposure.

Symptoms for skin absorption are the same as for inhalation.

Contact with eyes and mucous membranes may also contribute to overall exposure and may also invalidate the exposure standard.

Capable of causing skin sensitisation and allergic skin reactions.

The material may accentuate any pre-existing skin condition.

Bare unprotected skin, abraded or irritated skin, open cuts etc. should not be exposed to this material.

**INHALED**

Low order of toxicity.

Vapour/mist concentrations above recommended exposure levels are extremely irritating to mucous membranes, eyes, upper respiratory tract and lungs, could be anaesthetic and may have other central nervous system effects.

Acute effects from inhalation of high vapour concentrations may be dryness of the mouth and throat, chest and nasal irritation with coughing and sneezing, nausea and vomiting, stupor, low blood pressure, rapid and irregular pulse, and weakness of the legs.

CNS depression may be evident early and is characterized by headache, dizziness, increased reaction time, fatigue, lassitude, drowsiness, irritability, loss of co-ordination, impaired judgement, gastrointestinal disturbances (e.g. nausea, anorexia and flatulence).

If exposure to highly concentrated solvent atmosphere is prolonged this may lead to narcosis, unconsciousness, respiratory depression, even coma and possible death.

Inhalation hazard is increased at higher temperatures. Toxic effects are increased by consumption of alcohol.

Repeated exposure may cause sensitisation and/or allergic reactions.

Small amounts of liquid aspirated into respiratory system during ingestion or from vomiting may cause serious (even fatal) pneumonitis.

If the victim is uncoordinated there is a greater likelihood of vomit entering the lungs and causing subsequent complications.

**HEALTH EFFECTS - CHRONIC EXPOSURE**

Principal routes of exposure are usually by accidental skin and eye contact contact/absorption and inhalation of vapours especially at higher temperatures.

Chronic (long term) health effects can occur at some time after exposure to this product and can last for months or years.

Symptoms of chronic exposure may include weakness, loss of appetite, burning eyes, stomach-ache, nausea, vomiting, sore throat, fatigue, insomnia, heartburn, intestinal pain, slightly enlarged liver, colitis, and dermatitis.

Can be absorbed through the skin with resultant toxic effects.

Prolonged or repeated skin contact causes severe irritation and may lead defatting with drying, cracking, irritation...
and dermatitis. Skin contact may aggravate an existing dermatitis. Inhalation of material may aggravate asthma and inflammatory or fibrotic pulmonary diseases. Evidence from animal tests indicate that repeated or prolonged solvent inhalation exposures could result in kidney disorders, nervous system impairment, liver, lung and blood changes. 

The components in this chemical have not been adequately evaluated to determine whether brain or other nerve damage could occur with repeated exposure. However, many solvents and other petroleum based chemicals have been shown to cause such damage. Effects may include reduced memory and concentration, personality changes (withdrawal, irritability), fatigue, sleep disturbances, reduced co-ordination, and/or effects on nerves supplying internal organs (autonomic nerves) and/or nerves to the arms and legs (weakness, "pins and needles").

Chronic Toluene habituation occurs following intentional abuse (paint sniffing) or from occupational exposure. Ataxia, incoordination and tremors of the hands and feet, headache, abnormal speech, transient memory loss, convulsions, coma, drowsiness, reduced colour perception, frank blindness, nystagmus (rapid, involuntary eye movements), decreased hearing leading to deafness and mild dementia have all been associated with chronic abuse. Due to small amounts of Carbon Tetrachloride, caution should be exercised when heating and/or melting the product to avoid breathing vapours. Danger of serious damage to health after prolonged exposure to carbon tetrachloride. Carbon Tetrachloride is a PROBABLE CARCINOGEN in humans as it has been shown to be a carcinogen in some animal tests.

All exposures to this product should be reduced to the lowest possible level.

MIXED EXPOSURES
Because smoking can cause heart disease, as well as lung cancer, emphysema, and other respiratory problems, it may worsen respiratory conditions caused by chemical exposure. Even if you have smoked for a long time, stopping now will reduce your risk of developing health problems. Because more than light alcohol consumption can cause liver damage, drinking alcohol can increase the liver damage caused by this product.

FIRST AID
SWALLOWED
Harmful if swallowed. If swallowed, do NOT induce vomiting due to the hazard of solvent aspiration into the lungs which may cause mild to severe pulmonary injury and possibly death. Tends to break into a foam if the patient vomits. Should vomiting occur, place patient's head downwards, head lower than hips, to prevent vomit entering the lungs. This is especially important as aspiration of this material into the lungs can cause chemical pneumonia, which can be fatal. If the victim is conscious and not convulsing, rinse mouth out with plenty of water and give 1 or 2 glasses of water to drink. Do NOT give anything by mouth if the victim is convulsing or unconscious. Ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. IMMEDIATELY call a doctor or Poisons Information Centre and/or transport to an emergency facility or hospital.

EYE
First check the victim for contact lenses and remove if present. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. Immediately and continuously irrigate with copious quantities of fresh, low pressure water or normal saline solution for at least 15 minutes while simultaneously calling a hospital or poison control centre. Eyelids should be held open. Ensure irrigation under the eyelids by occasionally lifting upper and lower lids. Remove any contaminated clothing and flush area with water until irritation subsides. Do NOT put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician. IMMEDIATELY after flushing eyes transport the victim to a hospital even if no symptoms (such as redness or irritation) develop.
Seek immediate medical attention, preferably from an ophthalmologist.

**SKIN**
If GROSS contamination occurs, IMMEDIATELY soak contaminated clothing, including footwear, with water. Remove all contaminated clothing, including footwear, and gently wash the affected areas thoroughly with water, then mild soap and water.
If exposure has been prolonged or severe or if swelling, redness or irritation occur seek medical advice and be prepared to transport the victim to a hospital for treatment.
Launder contaminated clothing before re-use. Allow contaminated footwear to dry thoroughly before re-using.

Can be absorbed through the skin with resultant toxic effects.

**INHALED**
If fumes or combustion products are inhaled:
IMMEDIATELY remove affected person(s) to fresh air, taking care not to become affected yourself.
Provide proper respiratory protection to rescuers entering an unknown atmosphere.
Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used. If not available, use a level of protection greater than or equal to that advised under Respirator Recommendation.
Remove any contaminated clothing and loosen remaining clothing.
If breathing is normal, allow the patient to assume the most comfortable position and keep warm. Keep at rest until fully recovered.
If symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician and be prepared to transport the victim to a hospital.
If breathing is difficult and patient is cyanotic (blue), ensure airways are clear and have a qualified person give oxygen through a face mask.
If breathing has stopped, commence Expired Air Resuscitation (E.A.R.).
In the event of cardiac arrest, commence Cardio-Pulmonary Resuscitation (C.P.R.)
Seek IMMEDIATE medical attention or transport to hospital, or doctor, without delay.
Poison Information Centres in each State capital city can provide additional assistance for scheduled poisons.

**ADVICE TO DOCTOR**
Principal routes of exposure are skin contact/absorption and inhalation of the vapor/spray mist.
Onset of symptoms may be delayed several hours after exposure.
Primary threat to life from ingestion and/or inhalation, is respiratory failure. There is no specific antidote.
Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.
Individuals experiencing breathing difficulties after exposure to vapor generated in aerosol applications should be observed for at least 48 hours in case delayed respiratory complications develop.
Extreme care must be taken to prevent aspiration. Any material aspirated during vomiting may cause lung injury.
Pulmonary oedema is a possible complication following aspiration.
If vomiting occurs, hold patient with head below the hips to prevent pulmonary aspiration.
If it is considered necessary to evacuate the stomach contents, this should be done by means least likely to cause aspiration (e.g. gastric lavage after endotracheal intubation).
In the absence of depression or convulsions, or impaired gag-reflex, ipetic emesis can also be done without increasing the hazard of aspiration.
Skin sensitisation may result from a single acute exposure.
Sensitive may cause difficulty in breathing similar to asthma.

Following acute or short term repeated exposures to Toluene:

1. Toluene is absorbed across to alveolar barrier, the blood/air mixture being 11.2/15.6 (at 37°C).
The order of Toluene in expired breath, is in the order of 18 ppm following sustained exposures to 100 ppm.
The tissue/blood proportion is 1 / 3 except in adipose where the proportion is 8 /10.

2. Metabolism by microsomal mono-oxygenation, results in the production of hippuric acid.
This may be detected in the urine in amounts of between 0.5 and 2.5 g/24 hr which represents, on average 0.8 gm/gm of creatinine. The biological half-life of hippuric acid is in the order of 1-2 hours.
3. Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO2 < 50 mm Hg or pO2 > 50 mm Hg) should be intubated.

4. Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.

5. A chest X-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.

6. Epinephrine (adrenalin) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.

7. Lavage is indicated in patients who require decontamination; ensure use of a cuffed endotracheal tube in adult patients.

[Ellenhorn and Barceloux : Medical Toxicology]

MEDICAL TESTING

For those with frequent or potentially high exposure (half the TLV or greater, or significant skin contact), the following is recommended before beginning work and at regular times after that:

- Exam of the eyes by slit lamp.
- Urinary Hippuric acid excretion (at the end of shift) as an index of overexposure.

If symptoms develop or overexposure is suspected, the following may be useful:

- Liver and kidney function tests.
- Urine concentration of m-Methylhippuric Acid (at the end of workshift) as an index of overexposure.
- A complete blood count to include at least a red cell count, a white cell count, haemoglobin and haematocrit.
- A comprehensive physical examination with emphasis given to haematological and pulmonary systems, mucous membranes, skin and eyes.
- Comprehensive medical, work and reproductive histories with special emphasis directed to the haematological system and symptoms related to pulmonary and mucous membrane irritation.
- Interview for brain effects, including recent memory, mood (irritability, withdrawal), concentration, headaches, malaise and altered sleep patterns.
- Consider cerebellar, autonomic and peripheral nervous system evaluation.
- Positive and borderline individuals should be referred for neuropsychological testing.

In addition, the physician should determine the worker’s suitability for respirator use. Workers or job applicants who have medical conditions that would be aggravated by the use of a respirator need to receive counselling on the increased risk of impairment of their health.

In certain cases, to provide sound medical advice to the employer and the employee, the physician must evaluate situations not directly related to this product.

For example, employees with skin diseases may be unable to tolerate wearing protective clothing. In addition, those with chronic respiratory diseases may not tolerate the wearing of respirators. Additional tests and procedures that will help the physician determine which employees are medically unable to wear respirators must include a pulmonary function test with measurement of the employee’s forced vital capacity (FVC), and forced expiratory volume at one second (FEV1). Ratios of FEV1 to FVC as well as measured FVC and measured FEV1 to their expected values corrected for variations due to age, sex, race, and height must be calculated. Whether a chest X-ray will provide useful information should be considered.

Any evaluation should include a careful history of past and present symptoms with an exam.
3. PRECAUTIONS FOR USE

EXPOSURE LIMITS

This Fact Sheet is a summary source of information of all potential and most severe health hazards that may result from exposure. These Exposure Standards are issued as guides to be used in the control of occupational health hazards and are for air levels only. When skin contact also occurs, you may be overexposed, even though air levels are less than the limits listed below. Symptoms for skin absorption are the same as for inhalation. Contact with eyes and mucous membranes may also contribute to overall exposure and may also invalidate the exposure standard. All contact with this chemical should be reduced to the lowest possible level. Duration of exposure, concentration of the substance and other factors will affect your susceptibility to any of the potential effects described below. If you think you are experiencing any work-related health problems, see a doctor trained to recognize occupational diseases. Take this Fact Sheet with you.

No value has been assigned for this specific material by the ACGIH (Worksafe Australia). Threshold Limit Value (TLV) as recommended by the National Occupational Health & Safety Commission (Worksafe Australia [1991]) for some of the major components is :-

TOLUENE

Toluene is listed as a hazardous air pollutant.

TLV-TWA : 100 ppm (377 mg/m3) SKIN A4 (Under review)
Short Term Exposure Limits (STEL) : 150 ppm (565 mg/m3) as recommended by Worksafe Australia (1991)
IDLH Level : 2000 ppm
Odour Threshold Value : 0.16 - 6.7 (detection), 1.9 - 69 (recognition)

The odor threshold only serves as a warning of exposure. Not smelling it does not mean you are not being exposed.

NOTE:
This substance has been classified by the ACGIH as A4 NOT classifiable as causing Cancer in humans. Detector tubes for toluene measuring in excess of 5 ppm, are available. Exposure limits with “skin” notation indicate that vapour and liquid may be absorbed through intact skin. High concentrations of toluene in the air produce depression of the central nervous system (CNS) in humans. Intentional toluene exposure (paint/glue sniffing) at maternally-intoxicating concentration has also produced birth defects. Fœtotoxicity appears at levels associated with CNS narcosis and probably occurs only in those with chronic toluene induced kidney failure.

Exposure at or below the recommended TLV-TWA is thought to prevent transient headache and irritation, to provide a measure of safety for possible disturbances to human reproduction, the prevention of reduction in cognitive responses reported amongst humans inhaling greater than 40 ppm, and the significant risks of haematoxic, behavioural and nervous system effects (including impaired reaction time and incoordination). Although toluene/ethanol interactions are well recognised, the degree of protection afforded by the TLV-TWA among drinkers is not known.

CARBON TETRACHLORIDE

TLV-TWA : 0.1 ppm (0.63 mg/m3) WORKSAFE CARCINOGEN CAT. 2
Absorption through skin may be a source of exposure.
Odour Threshold Value : 96 ppm
The odor threshold only serves as a warning of exposure. Not smelling it does not mean you are not being exposed.

Carbon Tetrachloride is a PROBABLE CANCER CAUSING AGENT in humans. There may be no safe level of exposure to a carcinogen, so all contact should be reduced to the lowest possible level.

TLV-TWA is the time weighted average concentration of the workplace atmosphere for a normal 8 hour work day and a 40 hour work week, to which nearly all workers may be repeatedly exposed day after day without adverse effect. These TLV’s are issued as guidelines only and should not be interpreted as the fine dividing line between safe and dangerous conditions. They are not a measure of relative toxicity. All atmospheric contamination should be kept to as low a level as is practically possible.

STEL's (Short Term Exposure Limits) are expressed as airborne concentrations of substances, averaged over a period of 20 minutes. This short term TWA concentration should not be exceeded at any time during a normal 8 hour working day. Workers should not be exposed at the STEL concentration continuously for longer than 15 minutes, or for more than four such periods per working day. A minimum of 60 minutes should be allowed between successive exposures at the STEL concentration.

STEL is the concentration to which workers can be exposed continuously for a short period of time without suffering from:
- irritation
- chronic or irreversible tissue damage, or
- narcosis of a sufficient degree to increase the likelihood of accidental injury, impair self-rescue or materially reduce work efficiency, and provided that the daily TLV-TWA is not exceeded.

HOW TO DETERMINE IF YOU ARE BEING EXPOSED
Exposure to hazardous substances should be routinely evaluated. This may include collecting personal and air samples. You have a legal right to obtain copies of sampling results from your employer. If you think you are experiencing any work related health problems, see a doctor trained to recognize occupational diseases. Take this MSDS with you.

ENGINEERING CONTROLS:
Unless a less toxic chemical can be substituted for a hazardous substance, ENGINEERING CONTROLS are the most effective way of reducing exposure. The best protection is to enclose operations and/or provide local exhaust ventilation at the site of chemical release. Isolating operations can also reduce exposure.
Using respirators or protective equipment is less effective than the controls mentioned above, but is sometimes necessary. Even if the product is used outdoors, respirators should still be worn.
Duration of exposure, concentration of the substance and other factors will affect your susceptibility to any of the potential effects.

Use away from all ignition sources. No smoking or open lights. Ensure sufficient ventilation to maintain concentration below exposure standard in warehouse or closed storage areas. General exhaust is adequate under normal operating conditions. Where rapid build up of vapors or mists are generated, particularly in enclosed areas, and natural ventilation is inadequate, a flame proof exhaust ventilation system is required. Use with local exhaust ventilation or while wearing hydrocarbon vapor /acid mist respirator.
requirements of AS1715 & AS1716) or dust respirator/air supplied mask.
In confined areas where there is inadequate ventilation, or if risk of overexposure exists, wear SAA (supplied air
type) respirator meeting the requirements of AS1715 & AS1716.
Equipment MUST be explosion proof.
Keep containers closed when not in use.
Special controls should be in place for highly toxic chemicals or when significant skin, eye, or breathing exposures
are possible.
Refer to AS 1940 - The storage and handling of flammable and combustible liquids and AS 2430 - Explosive gas
atmospheres for further information concerning ventilation requirements.
In evaluating the controls present in your workplace, consider:
(1) how hazardous the substance is,
(2) how much of the substance is released into the workplace and
(3) whether harmful skin or eye contact could occur.

NOTE : Vapor is heavier than air and may collect in hollows, pits storage tanks or sumps.
Do NOT enter confined spaces where vapor may have collected without using an approved, positive
pressure, self-contained breathing apparatus (meeting the requirements of AS1715 and AS1716 ) and an
observer present for assistance.

LOCAL EXHAUST : Face velocity > 20 m/min.

FLAMMABILITY :
Highly flammable liquid. Flammability is due entirely to solvent content.
Prolonged heating at temperatures in excess of 70 °C or heating above 200 °C for short periods of time will result
in decomposition and liberation of toxic fumes of HYDROGEN CHLORIDE and/or CHLORINE.
Because of the release of hydrogen chloride and/or chlorine fumes on strong heating, product may be considered
to be self-extinguishing.
Avoid direct sources of heat, naked lights, sparks, all ignition sources and oxidising materials.
Can readily form flammable/explosive mixtures with air.
Ensure ventilation is adequate to prevent build up of explosive atmosphere.
Vapour may travel a considerable distance to source of ignition and flash back.
Flameproof equipment necessary in areas where this product is being used.
Earth and bond all process equipment, including tanks, hoses and drums to avoid static charge build up.
Nearby equipment should be earthed.

Refer to AS 1940 - Storage and handling of flammable and combustible liquids and AS 2865 - Safe working in a
confined space, for more specific information on these subjects.

PERSONAL PROTECTION

WORKPLACE CONTROLS ARE BETTER THAN PERSONAL PROTECTIVE EQUIPMENT.
In case of hypersensitivity of the respiratory tract and skin (e.g. asthmatics and those who suffer from chronic
bronchitis and chronic skin complaint) it is inadvisable to work with the product.
The following recommendations are only guidelines and may not apply to every situation :-
Observe good personal hygiene.
Avoid contact with the skin and eyes, and avoid breathing vapors or mists.
Do NOT eat, smoke, or drink where this product is handled, processed, or stored, since the chemical can be
swallowed.
Personal protective equipment should not be worn in lunch areas to prevent migration of product to an area where
other employees may be unknowingly exposed.
Keep working clothes separate. Take off immediately all contaminated clothing.
Do not take contaminated work clothes home. Family members could be exposed.
ALWAYS wash hands carefully before breaks, eating, drinking, smoking, using the toilet and at end of work.
Eye wash fountains and safety showers should be available for emergency use.
The local concentration of material, quantity and conditions of use determine the type of personal protective
equipment required.

For further information consult your Occupational Health and Safety Adviser.

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For detailed advice on Personal Protective Equipment, refer to the following Australian Standards:-

AS 1377 Eye protectors for industrial applications.
AS 1715 Selection, use and maintenance of respiratory protective devices.
AS 1716 Respiratory protective devices.

When exposure is likely, personal protective equipment in combination appropriate to the degree and nature of exposure, should be selected from the following lists:-

EYES
Should be protected by chemical splash goggles, safety glasses fitted with side shields or full face shield unless full face piece respiratory protection is worn.
Contact lenses should NOT be worn as soft lenses may absorb irritants and all lenses concentrate irritants.
If vapour causes eye irritation or if an inhalation risk exists a full-face, organic vapor respirator (meeting the requirements of AS1715 & AS1716) should be used.

SKIN
Contact should be avoided by using barrier cream, wearing impervious, chemically resistant work clothing (PVC apron and sleeves or full PVC covering or other work clothing), safety boots (PVC or rubber) and impervious, chemical protective gloves (PVC, Viton, polyurethane or Fluorene/Chloroprene) if needed to avoid repeated or prolonged skin contact.
Safety equipment suppliers/manufacturers can provide recommendations on the most protective glove/clothing for your operation.
All protective clothing (suits, gloves, footwear, headgear) should be clean, available each day, and put on before work.
Do NOT use solvent to clean the skin but use skin cleansing cream.
If contamination occurs, IMMEDIATELY remove all contaminated clothing, wash or shower to remove the chemical and change into clean clothing.
Clothing wet with product should be soaked with water before removal to prevent the possibility of ignition by static electricity discharges.
At the end of the workshift, wash any areas of the body that may have contacted this product, whether or not known skin contact has occurred.
Launder contaminated clothing and other protective equipment before storing or re-using, and discard internally contaminated gloves and footwear.
Contaminated work clothes should be laundered by individuals who have been informed of the hazards of exposure to this product.

RESPIRATORY
IMPROPER USE OF RESPIRATORS IS DANGEROUS.
Local exhaust ventilation and respiratory protection required in insufficiently ventilated working areas and during spraying.
Where the potential exists for exposures over 100 ppm, use an approved full facepiece respirator with a hydrocarbon vapour cartridge/canister.
The effectiveness of an air purifying respirator is limited. Use it only for a single, short term exposure.
Increased protection is obtained from full facepiece powered air purifying respirators.
Correct respirator fit is essential to obtain adequate protection.
If vapour causes eye irritation or if an inhalation risk for higher exposures exists an approved air supplied breathing apparatus (meeting the requirements of AS1715 and AS1716) operated in pressure demand or other positive pressure mode should be used.
If while wearing a filter, cartridge or canister respirator, you can smell, taste, or otherwise detect the product, or in the case of a full facepiece respirator you experience eye irritation, leave the area immediately.
Check to make sure the respirator to face seal is still good. If it is good, replace the filter, cartridge, or canister.
If the seal is no longer good, you may need a new respirator.
Be sure to consider all potential exposures in your workplace.
You may need a combination of filters, prefilters, cartridges, or canisters to protect against different forms of a chemical (such as vapour and mist) or against a mixture of chemicals.
Exposure to 2,000 ppm is immediately dangerous to life and health.
If the possibility of exposures above 2,000 ppm exists, use a self contained breathing apparatus (meeting the requirements of AS1715 and AS1716) with a full facepiece operated in continuous flow or other positive pressure mode.

Where the concentration of vapour or mist is unknown or expected to approach or exceed the Worksafe Exposure Standards limit, the following additional equipment is recommended:

(1) Short elevated exposures, e.g. spillage - goggles and correct respiratory equipment should be worn.

N.B. if the vapour/mist concentration exceeds the exposure limit by more than 10 times, air supplied apparatus should be used.

(2) For prolonged elevated exposures - Full face air supplied or self contained breathing apparatus should be worn.

4. SAFE HANDLING INFORMATION

STORAGE AND TRANSPORT
Classified as a Dangerous Good (Class 3) for transport purposes.

SHIPPING NAME: Chlorinated Rubber Compound (High Viscosity)

UN No: 1263

CLASS: 3.1 (Flammable Liquid)

SUBSIDIARY RISK: NOT ASSIGNED

HAZCHEM CODE: 3[Y]E

EPG: 3A2

Class 3 flammable liquids shall NOT be loaded in the same vehicle or packed in the same freight containers with:
- Class 1 Explosives
- Class 2.1 Flammable gases (when both in bulk)
- Class 2.3 Poisonous gases
- Class 4.2 Spontaneously combustible substances
- Class 5.1 Oxidizing agents
- Class 5.2 Organic peroxides
- Class 7 Radioactive substances
- Halogens (chlorinated compounds & etc.)
- Foodstuffs and foodstuff empties.

Liquid paint can readily form flammable mixture.
Prolonged heating at temperatures in excess of 70 °C or heating above 200 °C for short periods of time will result in decomposition and liberation of toxic fumes of hydrogen chloride and/or chlorine.

Refer to Australian Code for the Transport of Dangerous Goods By Road and Rail (5th EDITION) for transport regulations and state Dangerous Goods regulations for storage requirements.

This material is a Scheduled Poison (S5) and must be stored, maintained and used in accordance with the relevant regulations.

Prior to working with this product you should be trained on its proper handling and storage.
Store in tightly closed, original metal containers in a cool, well ventilated area out of direct sunlight.
Avoid exposure to temperatures above 50 °C.
Sources of ignition, such as smoking, naked lights, open flames, heat, sparks, or other ignition sources are prohibited where this product is used, handled, or stored in a manner that could create a potential fire or explosion hazard.

Do NOT store in pits, depressions, basements or areas where vapours may be trapped.
Keep container dry and tightly closed when not in use.
Check all containers are clearly labelled and check regularly for leaks.
Handle containers with care. Open slowly in order to control possible pressure release.

Materials are stable on storage, but should be stored in a cool and well ventilated place away from sources of ignition, oxidizing agents, mineral acids, alkalis and reactive metals such as iron, magnesium, aluminium, sodium, zinc/zinc oxide & etc. since violent reactions can occur.

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Ensure adequate ventilation (equivalent to outdoors), or exhaust ventilation in the working area to prevent build up of explosive atmosphere. Exhaust ventilation necessary if product is sprayed. 
Irritating to eyes, skin and mucous membranes. Harmful in contact with or absorbed through the skin. 
Avoid prolonged, repeated contact with eyes, skin contact and breathing vapours or mists. 
Use non-sparking tools and equipment especially when opening and closing containers of this product. 
To prevent fire or explosion risk from static accumulation and discharge, effectively ground and bond product transfer system and all process equipment, including tanks and drums. 
Intense smelling. Keep away from foodstuffs and clothing. 
Published “autoignition” or “ignition” temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. 
Any use of this product in elevated temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions. 
Further information is available in a technical bulletin entitled “Ignition Hazards of Organic Chemical Vapors”. 

Refer to AS 1940 - Storage and handling of flammable and combustible liquids and AS 2865 - Safe working in a confined space, for more specific information on these subjects.

PROCESS HAZARD

SPILLS AND DISPOSAL

FOR LARGE SPILLS AND FIRES immediately call your fire department. 
There should a written emergency plan developed for each workplace or work operation. 
Pollutant - contain spillage. 
Slippery when spilt. 
Clean up spills immediately. 
Do not empty into drains. 
Keep unauthorized persons away at a safe distance and move upwind until clean up is complete. 
Shut off all possible sources of ignition ensure adequate ventilation / exhaust ventilation. 
Stop liquid at the source if safe to do so. 
No smoking, naked lights or ignition sources. Increase ventilation. 
May be violently or explosively reactive. 
Keep hydrocarbon solvents out of a confined space, such as a sewer, because of the possibility of an explosion, unless the sewer is designed to prevent the build up of explosive concentrations. 
Use only spark-free and/or explosion proof equipment. 
Avoid breathing vapours and contact with skin and eyes. 
Control personal contact by using protective equipment. 
If a leak or spill has not ignited, use water spray or fog to disperse the vapours and to protect men attempting to stop leak. 
Advise authorities if product has entered or may enter sewers, watercourses or extensive land areas. 

MINOR SPILLS 
Ventilate confined spaces. Open all windows and doors. 
Small spills may be absorbed onto any absorbent material such as sand, soil or vermiculite or other absorbent material. 
Collect residues and place in sealed, labelled, flammable waste container

MAJOR SPILLS
Consider evacuation. 
Alert Fire Brigade and tell them location and nature of hazard. 
Avoid breathing vapors and contact with skin and eyes. 
Wear breathing apparatus, protective gloves and full protective clothing. 
Dyke the area by any means available to prevent spreading and to prevent it entering sewers, drains or natural waterways. 
Water spray or fog may be used to disperse /absorb vapour. 
Pump the liquid to a salvage tank for recycling or later disposal. 
Absorb remaining material with suitable absorbent (sand, soil, fire retardant treated sawdust, vermiculite, diatomaceous earth & etc.).
Collect solid residues and seal in labelled, flammable waste containers for later disposal. Water spray may be used to flush spills away from exposures. Use only spark-free and/or explosion proof equipment. Ventilate area well to evaporate remaining liquid and to disperse vapour. Clean area with detergent and water - do not allow product to enter drains, sewers or water courses - inform the local authorities or emergency services if this occurs. Dispose of at an appropriate licensed waste disposal site or facility in accordance with current applicable laws and regulations and product characteristics at time of disposal.

**DISPOSAL**

It may be necessary to contain and dispose of this product as a HAZARDOUS WASTE. Recycle product where possible. Contact your state Environmental Program for specific recommendations. Refer to State Land Waste Management Authority. Advise of flammable/chemical nature. On strong heating will release toxic fumes of hydrogen chloride and/or chlorine. This product is NOT suitable for disposal by either landfill or via municipal sewers, drains, natural streams or rivers. Recycle containers where possible, or dispose of in an authorised landfill. Do NOT pressurise, cut, heat, or weld containers. Empty product containers may contain product residue. Do NOT reuse empty containers without commercial cleaning or reconditioning.

**FIRE AND EXPLOSION HAZARD**

Severe fire hazard when exposed to heat, flame and/or oxidisers. Severe explosion hazard, in the form of vapour, when exposed to flame or spark. Formation of hydrogen chloride and/or chlorine in case of fire. Firemen have to wear self-contained breathing apparatus. Do not store or mix with strong oxidants, mineral acids, strong bases and reactive metals. Leaks of gas or spills of liquid can readily form flammable/explosive mixtures at temperatures at or above flash point which may ignite explosively and flashback a considerable distance along the vapor trail to source of ignition. Heating may cause expansion or decomposition leading to violent rupture of containers. In the case of incomplete combustion, may form toxic materials such as carbon monoxide (CO, carbon dioxide (CO2), various hydrocarbons, hydrogen chloride, chlorine, fumes and smoke. Water spray may be used to flush spills away from exposures. Dry paint will not burn, but will evolve toxic materials such as carbon monoxide, carbon dioxide, chlorine, fumes and smoke. Because of the release of hydrogen chloride and/or chlorine fumes on strong heating, can be considered to be self-extinguishing.

**FIRE EXTINGUISHING PROCEDURES**

Shut off any leak if safe to do so and remove sources of re-ignition. If safe to do so, remove containers from the path of the fire and keep cool with water spray. If a leak or spill has not ignited, use water spray to disperse the vapours and to protect personnel attempting to stop leak. Use water spray to cool fire-exposed surfaces and to protect personnel. Firefighters to approach from downwind side and to wear self-contained breathing apparatus with a full face piece operated in positive pressure mode if risk of exposure to vapour or products of combustion. Either allow fire to burn under controlled conditions or extinguish with foam or dry chemical. Try to cover liquid spills with foam. Prevent run off from fire control or dilution from entering waterways, sewers or drinking water supply. Material may produce a floating fire hazard.

**FIRE EXTINGUISHING MEDIA**

For small fires use water fog in large quantities, foam, dry agent (carbon dioxide, dry chemical powder). For large fires use foam or water fog (or if unavailable fine water spray). Water spray may be ineffective, but should be used to keep fire-exposed containers cool. Fire-men have to wear self-contained breathing apparatus.
5. OTHER INFORMATION

TOXICITY
This product may contain some of the components of a material which caused kidney cancer in male rats. This effect is not considered relevant to humans.
Prolonged, repeated skin contact with petroleum hydrocarbons may defat the skin resulting in possible irritation and dermatitis.

No information for this specific product. However for some of the components:

**TOLUENE**
- Oral LD50 (rat): 5,000 mg/kg - considered to be no more than slightly toxic
- Dermal LD50 (rabbit): > 2,000 mg/kg - considered to be no more than slightly toxic
- Inhalation LC50 (rat): 8,000 ppm / 4 hours. Practically non-toxic.
- Inhalation LC50 (mouse): 5,320 ppm / 8 hours
- Inhalation Toxicity (rat): Slightly toxic
- Inhalation TCLO (human): 100 ppm Irritant (CNS recording changes, hallucinations)
- Skin Irritation (rabbit): Moderate irritant on prolonged or repeated contact.
- Eye Irritation (rabbits): Moderate irritant on prolonged or repeated contact.
- OTHER: Do NOT induce vomiting if swallowed

Evidence from animal tests is available to indicate that repeated or prolonged exposure to hydrocarbon solvents could result in liver, kidney and central nervous disorders as well as anaemia and leucopenia (lowered white cell count).

Aromatic hydrocarbons, such as Toluene, irritate the skin and mucous membranes and are narcotic if inhaled in high concentrations.
The oral LD50 in the rat, suggests that Toluene would not be acutely toxic to terrestrial animals unless present in very high concentrations.

**CHLORINATED RUBBER RESIN**
- Oral LD50 (rat): > 4,000 mg/kg

**CHLORINATED PARAFFIN**

TOXICITY
- Oral LD50 (rat): > 21.5 mg/kg

Chlorinated paraffins, as a group of chemicals, are not genotoxic. Their lack of genotoxic activity, together with the results of other studies, leads to the conclusion that chlorinated paraffins are unlikely to present a carcinogenic hazard to humans under normal conditions of handling and use.

SPECIAL PROPERTIES / EFFECTS
Over-exposure, especially during spraying operations, without the necessary precautions entails the risk of concentration-dependent irritating effects on eyes, nose, throat, and respiratory tract.
Delayed appearance of the complaints and development of hyper-sensitivity (difficult breathing, coughing, asthma) are possible.
Hypersensitive persons may suffer from these effects even at low concentrations below the control limit.

GENETIC TOXICOLOGY (SUMMARY)
Toluene has been extensively tested in a variety of genotoxicity tests.
Toluene has been shown to be negative for gene mutations in bacteria, in yeast, and in the fruit fly.
Negative Ames test. Mouse lymphoma (L5178Y/TK ±) assay.

NEUROTOXICOLOGY (SUMMARY)
Available information indicate that Toluene adversely affects the central nervous system of humans (by inhalation) and of laboratory animals (by oral and inhalation).
Nervous system effects including fatigue, muscular weakness, confusion, impaired coordination, slight exhilaration, enlarged pupils and accommodation disturbances were reported in humans chronically exposed to 200-800 ppm Toluene, 7-8 hours/day.
Exposure to 100 ppm for 6 hours resulted in fatigue, sleepiness, decreased manual dexterity, decreased color
discrimination, and decreased accuracy in visual perception.  
The concentration of 100 ppm is roughly equivalent to 40.39 mg/kg over the 6-hour period.
Prolonged abuse was reported to result in altered electroencephalogram, ataxia, tremors, CNS atrophy, and impaired speech, hearing, and vision.

DEVELOPMENTAL/REPRODUCTIVE TOXICITY
Exposures to high levels of Toluene can result in adverse effects in the developing human foetus.  
Several studies have indicated that high levels of Toluene can also adversely affect the developing offspring in laboratory animals.
Teratogenic studies (rats): Negative at 100 ppm.

CARCINOGENICITY
There is inadequate evidence for the carcinogenicity of Toluene in both human and animal studies.
No evidence of skin carcinogenic activity in laboratory tests. 2 -year inhalation toxicity (rats): 300 ppm resulted in tissue changes.

ACUTE TOXICITY
Humans exposed to intermediate to high levels of Toluene for short periods of time experience adverse central nervous system effects ranging from headaches to intoxication, convulsions, narcosis, and death.
Similar effects are observed in short-term animal studies.
The ingestion of about 60 ml resulted in fatal nervous system depression within 30 minutes in one reported case.
Constriction and necrosis of myocardial fibres, markedly swollen liver, congestion and haemorrhage of the lungs and acute tubular necrosis were found on autopsy.
Central nervous system effects (headaches, dizziness, intoxication) and eye irritation occurred following inhalation exposure to 100 ppm Toluene 6 hours/day for 4 days.
Exposure to 600 ppm for 8 hours resulted in the same and more serious symptoms including euphoria, dilated pupils, convulsions, and nausea.
Exposure to 10,000-30,000 ppm has been reported to cause narcosis and death.
Toluene can also strip the skin of lipids causing dermatitis.
The initial effects are instability and incoordination, lacrymation and sniffles (respiratory exposure), followed by narcosis.
Animals die of respiratory failure from severe nervous system depression.
Cloudy swelling of the kidneys was reported in rats following inhalation exposure to 1600 ppm, 18-20 hours/day for 3 days.

SUBCHRONIC / CHRONIC EFFECTS
Repeat doses of Toluene cause adverse central nervous system effects and can damage the upper respiratory system, the liver, and the kidney.
Adverse effects occur as a result from both oral and the inhalation exposures.
Chronic occupational exposure and incidences of Toluene abuse have resulted in haematomalgaly and liver function changes. It has also resulted in nephrotoxicity and, in one case, was a cardiac sensitizer and fatal cardiotoxin.
Neural and cerebellar dystrophy were reported in several cases of habitual "glue sniffing."
An epidemiological study in France on workers chronically exposed to Toluene fumes reported leucopenia and neutropenia.
In an inhalation study with Toluene, degeneration in the olfactory and respiratory epithelium of the nasal cavity was observed in Fisher 344 rats exposed 6.5 hours/day, 5 days/week for 103 weeks to 600 ppm Toluene.

PHARMACOKINETICS
Studies in humans and animals have demonstrated that Toluene is readily absorbed via the lungs and the gastrointestinal tract.
Absorption through the skin is estimated at about 1% of that absorbed by the lungs when exposed to Toluene vapour.
Dermal absorption is expected to be higher upon exposure to the liquid; however, exposure is limited by the rapid evaporation of Toluene.
In studies with mice exposed to radiolabeled Toluene by inhalation, high levels of radioactivity were present in body fat, bone marrow, spinal nerves, spinal cord, and brain white matter. Lower levels of radioactivity were present in blood, kidney, and liver.
Accumulation of Toluene has generally been found in adipose tissue, other tissues with high fat content, and in highly vascularized tissues.

The metabolites of inhaled or ingested Toluene include benzyl alcohol resulting from the hydroxylation of the methyl group. Further oxidation results in the formation of benzaldehyde and benzoic acid. The latter is conjugated with glycine to yield hippuric acid or reacted with glucuronic acid to form benzoyle glucuronide. o-cresol and p-cresol formed by ring hydroxylation are considered minor metabolites. Toluene is primarily (60-70%) excreted through the urine as hippuric acid. The excretion of benzoyle glucuronide accounts for 10-20%, and excretion of unchanged Toluene through the lungs also accounts for 10-20%. Excretion of hippuric acid is usually complete within 24 hours after exposure.

**BIOLOGICAL EXPOSURE INDEX - BEI**

**TOLUENE**

These represent the determinants observed in specimens collected from a healthy worker exposed at Exposure Standards (ES or TLV).

<table>
<thead>
<tr>
<th>Determinant</th>
<th>Index</th>
<th>Sampling Time</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hippuric acid in urine creatinine</td>
<td>2.5 gm/gm</td>
<td>End of shift</td>
<td>B, NS</td>
</tr>
<tr>
<td>2. Toluene in venous blood</td>
<td>1 mg/L</td>
<td>End of shift</td>
<td>SQ</td>
</tr>
<tr>
<td>3. Toluene in end-exhaled air</td>
<td></td>
<td>End of shift</td>
<td>SQ</td>
</tr>
</tbody>
</table>

NS : Non-specific determinant; also observed after exposure to other material.
SQ : Semi-quantitative determinant - Interpretation may be ambiguous; should be used as a screening test or confirmatory test.
B : Background levels occur in specimens collected from subjects NOT exposed.

**ECOLOGICAL INFORMATION**

Do not allow product to escape into waters, waste water or soil. It may enter the environment from industrial or municipal waste treatment plant discharges or spills.

**CHLORINATED RUBBER**

Acute bacterial toxicity EC50 : > 10,000 mg/l (OECD Guideline for Testing of Chemicals, No. 209 = ISO 8192)
Acute fish toxicity LC0 : > 10,000 mg/l
Test species : Brachydanio rerio (Zebra barbel) Duration of test : 96 h

No effects known to be harmful to the environment. Effect on Effluent Treatment : Unlikely to have any effect on biological treatment processes.

**ACUTE (SHORT-TERM) ECOLOGICAL EFFECTS**

Acute toxic effects may include the death of animals, birds, or fish, and death or low growth rate in plants. Acute effects are seen two to four days after animals or plants come in contact with a toxic chemical substance. Product has moderate acute toxicity to aquatic life. Toluene has caused leaf membrane damage in plants. Insufficient data are available to evaluate or predict the short-term effects of this product to birds or land animals.

**CHRONIC (LONG-TERM) ECOLOGICAL EFFECTS**

Chronic toxic effects may include shortened lifespan, reproductive problems, lower fertility, and changes in appearance or behaviour. Chronic effects can be seen long after first exposure(s) to a toxic chemical. Product has moderate chronic toxicity to aquatic life. Insufficient data are available to evaluate or predict the long-term effects of this product to plants, birds, or land animals.
WATER SOLUBILITY
The product is essentially insoluble in water.
Unlikely to have an ecotoxic or environmentally toxic effect.

DISTRIBUTION AND PERSISTENCE IN THE ENVIRONMENT
Toluene is a volatile liquid and is released into the atmosphere from industrial and consumer uses.
Most direct releases of Toluene to the environment are to air. Toluene evaporates when exposed to air.
Once in air, Toluene breaks down to other chemicals.
It dissolves only slightly when mixed with water.
About 99.5% of Toluene will eventually end up in air; the rest will end up in the water.
The main degradation pathway for Toluene in the atmosphere is reaction with photochemically produced hydroxyl radicals.
The estimated atmospheric half-life for Toluene is about 13 hours.
Toluene is also oxidized by reactions with atmospheric nitrogen dioxide, oxygen, and ozone, but these are minor degradation pathways. Photolysis is not considered a significant degradative pathway for Toluene

ABIOTIC EFFECTS
According to the definition provided in the U.S. Federal Register (1992), Toluene is a volatile organic compound (VOC) substance.
As a VOC, Toluene can contribute to the formation of photochemical smog in the presence of other VOCs.

REACTIVITY / COMPATIBILITY
Hazardous reactions (Chlorinated paraffins/resin) : Can react with alkali metals and alkaline earth metals which have a strong affinity for chlorine.
:Can react with iron, zinc and aluminium at high temperatures leading to decomposition.

Stability (Thermal, Light, etc.) : Stable
Conditions to Avoid : Heat and hot surfaces, sparks, flame and build up of static electricity.
Prolonged heating at temperatures in excess of 70 °C or heating above 200 °C for short periods of time will result in decomposition and liberation of hydrogen chloride.
Incompatibility (materials to avoid for purpose of transport, handling & storage only)
: Avoid contact with strong alkalis, mineral acids, halogens, strong oxidizers (liquid chlorine, bromine, fluorine, concentrated oxygen, sodium hypochlorite), chemically active metals, such as sodium, potassium, and magnesium, since violent reactions can occur.
Hazardous.
Hazardous decomposition products : No hazardous decomposition products when stored and handled correctly.
Hazardous Polymerisation : Will not occur.
Conditions To Avoid Hazardous Polymerization : Not Applicable

HAZARDOUS COMPONENTS OF MIXTURE :
The presence of < 0.10% of both Benzene and Carbon Tetrachloride in this product poses chronic toxic problems.
The most serious of the hazards is the gradual, undetectable destruction of various components of the blood-forming organs.
This occurs as a consequence of prolonged or repeated inhalation of Benzene vapour at concentrations greater than 10 ppm TLV.
If these excessive exposures continue and if diagnosis is delayed, death may occur.
Carbon Tetrachloride can damage the liver and kidneys enough to cause death.