# **CTP Green Gum Washout**

**GSB Chemical Co.** 

Chemwatch: **5888155** Version No: **4.1.1.1** 

Safety Data Sheet according to WHS and ADG requirements

Chemwatch Hazard Alert Code: 2

Issue Date: 03/07/2014 Print Date: 10/11/2015 Initial Date: Not Available S.GHS.AUS.EN

#### SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

P	roc	luct	lden	tifier

Product name	CTP Green Gum Washout
Synonyms	Product Code: Jds Bk2 26 E
Other means of identification	Not Available

#### Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses

Use according to manufacturer's directions.

The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation.

Used for the cleaning of lithographic printing plates prior to storage.

#### Details of the supplier of the safety data sheet

Registered company name	GSB Chemical Co.
Address	84 Camp Road Broadmeadows 3047 VIC Australia
Telephone	+61 3 9457 1125 (8am-5pm, Monday - Friday)
Fax	+61 3 9459 7978
Website	Not Available
Email	info@gsbchem.com.au

#### **Emergency telephone number**

Association / Organisation	Not Available
Emergency telephone numbers	+61 3 9457 1125 (8am-5pm, Monday - Friday)
Other emergency telephone numbers	13 11 26 (After hours)

#### **SECTION 2 HAZARDS IDENTIFICATION**

# Classification of the substance or mixture

### HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the Model WHS Regulations and the ADG Code.

Poisons Schedule	Not Applicable	
GHS Classification <sup>[1]</sup>	Acute Toxicity (Oral) Category 4, Acute Toxicity (Dermal) Category 4, Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Eye Irritation Category 2A, Skin Sensitizer Category 1, STOT - SE (Narcosis) Category 3, Chronic Aquatic Hazard Category 3	
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HSIS; 3. Classification drawn from EC Directive 1272/2008 - Annex VI	

# Label elements

GHS label elements



SIGNAL WORD	WARNING	
Hazard statement(s)		
H302	Harmful if swallowed	
H312	Harmful in contact with skin	
H332	Harmful if inhaled	
H315	Causes skin irritation	
H319	Causes serious eye irritation	
H317	May cause an allergic skin reaction	
H336	May cause drowsiness or dizziness	

Chemwatch: **5888155** Version No: 4.1.1.1

# Page 2 of 11

Issue Date: 03/07/2014 Print Date: 10/11/2015 **CTP Green Gum Washout** 

H412	Harmful to aquatic life with long lasting effects	
Precautionary statement(s) Prevention		
P271	Use only outdoors or in a well-ventilated area.	
P280	Wear protective gloves/protective clothing/eye protection/face protection.	
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.	
P270	Do not eat, drink or smoke when using this product.	
P273	Avoid release to the environment.	
P272	Contaminated work clothing should not be allowed out of the workplace.	

# Precautionary statement(s) Response

P362	Take off contaminated clothing and wash before reuse.
P363	Wash contaminated clothing before reuse.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P330	Rinse mouth.

# Precautionary statement(s) Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

# Precautionary statement(s) Disposal

**P501** Dispose of contents/container in accordance with local regulations.

# SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

#### Substances

See section below for composition of Mixtures

# Mixtures

CAS No	%[weight]	Name
64742-48-9.	10-30	naphtha petroleum, heavy, hydrotreated
5989-27-5	10-30	<u>d-limonene</u>
7664-38-2	<10	phosphoric acid
26172-55-4	<10	5-chloro-2-methyl-4-isothiazolin-3-one
Not Available	<10	non-ionic surfactants & deodorisers
7732-18-5	30-60	water

# **SECTION 4 FIRST AID MEASURES**

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Description of first aid measures		
Eye Contact	If this product comes in contact with the eyes:  Vash out immediately with fresh running water.  Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.  Seek medical attention without delay; if pain persists or recurs seek medical attention.  Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.	
Skin Contact	If skin contact occurs:  ► Immediately remove all contaminated clothing, including footwear.  ► Flush skin and hair with running water (and soap if available).  ► Seek medical attention in event of irritation.	
Inhalation	<ul> <li>If fumes or combustion products are inhaled remove from contaminated area.</li> <li>Lay patient down. Keep warm and rested.</li> <li>Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>Transport to hospital, or doctor.</li> </ul>	
Ingestion	<ul> <li>If swallowed do NOT induce vomiting.</li> <li>If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>Observe the patient carefully.</li> <li>Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>Seek medical advice.</li> <li>Avoid giving milk or oils.</li> </ul>	

# Page 3 of 11 **CTP Green Gum Washout**

Issue Date: 03/07/2014 Print Date: 10/11/2015

▶ Avoid giving alcohol

#### Indication of any immediate medical attention and special treatment needed

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

For acute or short term repeated exposures to petroleum distillates or related hydrocarbons:

- ▶ Primary threat to life, from pure petroleum distillate ingestion and/or inhalation, is respiratory failure.
- 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) should be intubated.
- 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.
- A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- Figure 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.
- Lavage is indicated in patients who require decontamination, ensure use of cuffed endotracheal tube in adult patients. [Ellenhorn and Barceloux: Medical Toxicology] Treat symptomatically.

#### **SECTION 5 FIREFIGHTING MEASURES**

#### Extinguishing media

The product contains a substantial proportion of water, therefore there are no restrictions on the type of extinguishing media which may be used. Choice of extinguishing media should take into account surrounding areas.

Though the material is non-combustible, evaporation of water from the mixture, caused by the heat of nearby fire, may produce floating layers of combustible substances.

In such an event consider:

- foam.
- dry chemical powder.
- carbon dioxide.

Fire Incompatibility	None known.	
Advice for firefighters		
Fire Fighting	<ul> <li>Alert Fire Brigade and tell them location and nature of hazard.</li> <li>Wear full body protective clothing with breathing apparatus.</li> <li>Prevent, by any means available, spillage from entering drains or water course.</li> <li>Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>Avoid spraying water onto liquid pools.</li> <li>DO NOT approach containers suspected to be hot.</li> <li>Cool fire exposed containers with water spray from a protected location.</li> <li>If safe to do so, remove containers from path of fire.</li> </ul>	
Fire/Explosion Hazard	<ul> <li>▶ Combustible.</li> <li>▶ Slight fire hazard when exposed to heat or flame.</li> <li>▶ Acids may react with metals to produce hydrogen, a highly flammable and explosive gas.</li> <li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>▶ May emit acrid smoke and corrosive fumes.</li> <li>Combustion products include:3cv, carbon dioxide (CO2) other pyrolysis products typical of burning organic materialContains low boiling substance: Close containers may rupture due to pressure buildup under fire conditions. May emit poisonous fumes. May emit corrosive fumes.</li> </ul>	

#### **SECTION 6 ACCIDENTAL RELEASE MEASURES**

#### Personal precautions, protective equipment and emergency procedures

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Minor Spills	Environmental hazard - contain spillage.  Remove all ignition sources.  Clean up all spills immediately.  Avoid breathing vapours and contact with skin and eyes.  Control personal contact with the substance, by using protective equipment.  Contain and absorb spill with sand, earth, inert material or vermiculite.  Wipe up.  Place in a suitable, labelled container for waste disposal.
Major Spills	<ul> <li>Environmental hazard - contain spillage.</li> <li>CARE: Absorbent materials wetted with occluded oil must be moistened with water as they may auto-oxidize, become self heating and ignite.</li> <li>Absorb or contain isothiazolinone liquid spills with sand, earth, inert material or vermiculite.</li> <li>The absorbent (and surface soil to a depth sufficient to remove all of the biocide) should be shovelled into a drum and treated with an 11% solution of sodium metabisulfite (Na2S2O5) or sodium bisulfite (NaHSO3), or 12% sodium sulfite (Na2SO3) and 8% hydrochloric acid (HCI).</li> <li>Glutathione has also been used to inactivate the isothiazolinones.</li> <li>Use 20 volumes of decontaminating solution for each volume of biocide, and let containers stand for at least 30 minutes to deactivate microbicide before disposal.</li> <li>If contamination of drains or waterways occurs, advise emergency services.</li> <li>After clean up operations, decontaminate and launder all protective clothing</li> <li>and equipment before storing and re-using.</li> <li>Some oils slowly oxidise when spread in a film and oil on cloths, mops, absorbents may autoxidise and generate heat, smoulder, ignite and burn. In the workplace oily rags should be collected and immersed in water.</li> </ul>

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

# **SECTION 7 HANDLING AND STORAGE**

Chemwatch: 5888155 Page 4 of 11

**CTP Green Gum Washout** 

Issue Date: 03/07/2014 Version No: 4.1.1.1 Print Date: 10/11/2015

#### Precautions for safe handling

Containers, even those that have been emptied, may contain explosive vapours.

▶ Do NOT cut, drill, grind, weld or perform similar operations on or near containers.

#### Contains low boiling substance:

Storage in sealed containers may result in pressure buildup causing violent rupture of containers not rated appropriately.

- ► Check for bulging containers.
- Vent periodically
- ▶ Always release caps or seals slowly to ensure slow dissipation of vapours
- ▶ DO NOT allow clothing wet with material to stay in contact with skin
- $\blacktriangleright \ \ \text{Electrostatic discharge may be generated during pumping this may result in fire. }$
- ▶ Ensure electrical continuity by bonding and grounding (earthing) all equipment.
- Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (<=1 m/sec until fill pipe submerged to twice its diameter, then <= 7 m/sec
- ► Avoid splash filling.
- Do NOT use compressed air for filling discharging or handling operations.
  - Avoid all personal contact, including inhalation.
  - Wear protective clothing when risk of exposure occurs.
  - Use in a well-ventilated area.
  - Prevent concentration in hollows and sumps.
  - ▶ DO NOT enter confined spaces until atmosphere has been checked.
  - **DO NOT** allow material to contact humans, exposed food or food utensils.
  - Avoid contact with incompatible materials.
  - When handling, DO NOT eat, drink or smoke
  - Keep containers securely sealed when not in use.
  - Avoid physical damage to containers.
  - Always wash hands with soap and water after handling.
  - Work clothes should be laundered separately. Launder contaminated clothing before re-use.
  - Use good occupational work practice.
  - Observe manufacturer's storage and handling recommendations contained within this SDS.
  - Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

# Other information

Safe handling

- Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.
- Store in a cool, dry, well-ventilated area.
- ▶ Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- ▶ Observe manufacturer's storage and handling recommendations contained within this SDS.

# Conditions for safe storage, including any incompatibilities

▶ Lined metal can, lined metal pail/ can. ▶ Plastic pail.

# Suitable container

- Polyliner drum.
- ▶ Packing as recommended by manufacturer.
- ▶ Check all containers are clearly labelled and free from leaks.
- ► Metal can or drum
- Packaging as recommended by manufacturer.
- ▶ Check all containers are clearly labelled and free from leaks

#### Storage incompatibility

- ▶ Avoid reaction with oxidising agents
- Avoid strong bases.

#### **SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION**

# **Control parameters**

# OCCUPATIONAL EXPOSURE LIMITS (OEL)

#### INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	phosphoric acid	Phosphoric acid	1 mg/m3	3 mg/m3	Not Available	Not Available

#### **EMERGENCY LIMITS**

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
naphtha petroleum, heavy, hydrotreated	Naphtha, hydrotreated heavy; (Isopar L-rev 2)	171 ppm	171 ppm	570 ppm
d-limonene	Limonene, d-	20 ppm	20 ppm	160 ppm
phosphoric acid	Phosphoric acid	Not Available	Not Available	Not Available
5-chloro-2-methyl- 4-isothiazolin-3-one	Chloro-2-methyl-4-isothiazolin-3-one, 5-	0.2 mg/m3	0.2 mg/m3	0.2 mg/m3

Ingredient	Original IDLH	Revised IDLH
naphtha petroleum, heavy, hydrotreated	Not Available	Not Available
d-limonene	Not Available	Not Available
phosphoric acid	10,000 mg/m3	1,000 mg/m3
5-chloro-2-methyl- 4-isothiazolin-3-one	Not Available	Not Available
non-ionic surfactants & deodorisers	Not Available	Not Available

Chemwatch: **5888155** Version No: **4.1.1.1**  Page 5 of 11

CTP Green Gum Washout

Issue Date: **03/07/2014**Print Date: **10/11/2015** 

water

Not Available

Not Available

#### **Exposure 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 effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.

An approved self contained breathing apparatus (SCBA) may be required in some situations.

Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

# Appropriate engineering controls

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min.)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 t/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

# Personal protection









# Eye and face protection

- ► Safety glasses with side shields
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of 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 chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

# Skin protection

### See Hand protection below

- ► Wear chemical protective gloves, e.g. PVC.
- ► Wear safety footwear or safety gumboots, e.g. Rubber

#### NOTE:

- ▶ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.
- ► Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.

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.

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.

#### Hands/feet protection

- Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

   frequency and duration of contact,
- ▶ chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- ► Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.
- ▶ Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Chemwatch: **5888155** Page **6** of **11**Version No: **4.1.1.1** 

#### **CTP Green Gum Washout**

Issue Date: **03/07/2014**Print Date: **10/11/2015** 

	▶ Butyl rubber gloves     ▶ Nitrile rubber gloves
Body protection	See Other protection below
Other protection	<ul> <li>Overalls.</li> <li>P.V.C. apron.</li> <li>Barrier cream.</li> <li>Skin cleansing cream.</li> <li>Eye wash unit.</li> </ul>
Thermal hazards	Not Available

#### Respiratory protection

Not Available

#### **SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

#### Information on basic physical and chemical properties

Appearance	Green viscous liquid with a pleasant odour; miscible with wate	er.	
Physical state	#00Liquid	Relative density (Water = 1)	1.0
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Applicable
pH (as supplied)	4 approx	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Not Applicable	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	>85
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water (g/L)	#01miscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	1	VOC g/L	Not Available

#### **SECTION 10 STABILITY AND REACTIVITY**

Reactivity	See section 7
Chemical stability	<ul> <li>Unstable in the presence of incompatible materials.</li> <li>Product is considered stable.</li> <li>Hazardous polymerisation will not occur.</li> </ul>
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**

#### Information on toxicological effects

Inhaled

Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.

There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.

Inhaling high concentrations of mixed hydrocarbons can cause narcosis, with nausea, vomiting and lightheadedness. Low molecular weight (C2-C12) hydrocarbons can irritate mucous membranes and cause incoordination, giddiness, nausea, vertigo, confusion, headache, appetite loss, drowsiness, tremors and stungr

Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal. Inhalation of the vapour may cause choking, coughing, headache, weakness and dizziness, and with long term exposure, fluid accumulation in the lungs and blueness, initially in the fingertips.

Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.

The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation.

#### Continued...

Page 7 of 11 Version No: 4.1.1.1

**CTP Green Gum Washout** 

Issue Date: 03/07/2014 Print Date: 10/11/2015

#### Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733) Accidental ingestion of the material may be damaging to the health of the individual. Taken by mouth, isothiazolinones have moderate to high toxicity. The major signs of toxicity are severe stomach irritation, lethargy, and inco-ordination. Ingestion of petroleum hydrocarbons can irritate the pharynx, oesophagus, stomach and small intestine, and cause swellings and ulcers of the mucous. Ingestion Symptoms include a burning mouth and throat; larger amounts can cause nausea and vomiting, narcosis, weakness, dizziness, slow and shallow breathing, abdominal swelling, unconsciousness and convulsions. Ingestion of large quantity of phosphoric acid may cause severe abdominal pains, thirst, acidaemia, difficult breathing, convulsions, collapse, shock and death. Although less hazardous than nitric and sulfuric acid, phosphoric acid has equal corrosive action upon ingestion. Death of an individual 19 days after ingestion of phosphoric acid was due to recurrent internal haemorrhage. Necrosis of the upper and lower digestive tract and pancreas was evident at autopsy. This material can cause inflammation of the skin on contact in some persons. The material may accentuate any pre-existing dermatitis condition Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. Skin Contact Solutions of isothiazolinones may be irritating or even damaging to the skin, depending on concentration. A concentration of over 0.1% can irritate, and over 0.5% can cause severe irritation. Open cuts, abraded or irritated skin should not be exposed to this material $\hbox{$d$-limonene causes moderate irritation to skin including redness and swelling. Sometimes there are delayed haemorrhagic lesions.}$ This material can cause eye irritation and damage in some persons.

Eye

Solutions containing isothiazolinones may damage the mucous membranes and cornea. Animal testing showed very low concentrations (under 0.1%) did not cause irritation, while higher levels (3-5.5%) produced severe irritation and damage to the eye.

Direct eye contact with petroleum hydrocarbons can be painful, and the corneal epithelium may be temporarily damaged. Aromatic species can cause irritation and excessive tear secretion.

Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Constant or exposure over long periods to mixed hydrocarbons may produce stupor with dizziness, weakness and visual disturbance, weight loss and anaemia,

and reduced liver and kidney function. Skin exposure may result in drying and cracking and redness of the skin. The isothiazolinones are known contact sensitisers. Sensitisation is more likely with the chlorinated species as opposed to the non-chlorinated species In the presence of air, a number of common flavour and fragrance chemicals can form peroxides surprisingly fast. Antioxidants can in most cases minimise the oxidation

# Chronic

Fragrance terpenes are generally easily oxidised in air. Non-oxidised limonene, linalool and caryophyllene turned out to be very weak sensitizers, however after oxidation limonene hydroperoxide and linalool hydroperoxide are strong sensitizers. Of the patients tested 2.6% showed positive reaction to oxidised limonene, 1.3% to oxidised linalool, 1.1% to linalool hydroperoxide, 0.5% to oxidised caryophyllene, while testing with caryophyllene oxide and oxidised myrcene resulted in few positive patch tests. 2/3 of the patients reacting positive to oxidised terpenes had fragrance related contact allergy and/or positive history for adverse reactions to fragrances.

As well as the hydroperoxides produced by linalol, limonene and delta-3-carene other oxidation and resinification effects progressively causes other fairly major changes in essential oil quality over time. Autoxidation of fragrance terpenes contributes greatly to fragrance allergy, which emphasizes the need of testing with compounds that patients are actually exposed to and not only with the ingredients originally applied in commercial formulations.  $\hbox{d-Limonene may cause damage to and growths in the kidney. These growths can progress to cancer.}\\$ 

Peroxidisable terpenes and terpenoids should only be used when the level of peroxides is kept to the lowest practicable level, for instance by adding antioxidants at the time of production. Such products should have a peroxide value of less than 10 millimoles peroxide per liter. This requirement is based on the published literature mentioning sensitising properties when containing peroxides.

Chronic solvent inhalation exposures may result in nervous system impairment and liver and blood changes. [PATTYS]

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	TOXICITY	IRRITATION	
CTP Green Gum Washout	Not Available	Not Available	
	TOXICITY	IRRITATION	
naphtha petroleum, heavy,	Dermal (rabbit) LD50: >1900 mg/kg <sup>[1]</sup>	[CCINFO-Shell]	
hydrotreated	Oral (rat) LD50: >4500 mg/kg <sup>[1]</sup>	[EXXON]	
		None reported	
	TOXICITY	IRRITATION	
d-limonene	Dermal (rabbit) LD50: >5000 mg/kg <sup>[2]</sup>	Nil reported	
	Oral (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Skin (rabbit): 500mg/24h moderate	
	TOXICITY	IRRITATION	
	Dermal (rabbit) LD50: >1260 mg/kg* <sup>[2]</sup>	[Monsanto]*	
phosphoric acid	Inhalation (rat) LC50: 0.0255 mg/L/4h <sup>[2]</sup>	Eye (rabbit): 119 mg - SEVERE	
	Oral (rat) LD50: 1.7 ml/100 g body weight <sup>[1]</sup>	Skin (rabbit):595 mg/24h - SEVERE	
5-chloro-2-methyl-	TOXICITY	IRRITATION	
4-isothiazolin-3-one	Not Available	Not Available	
non-ionic surfactants &	TOXICITY	IRRITATION	
deodorisers	Not Available	Not Available	
	TOXICITY	IRRITATION	
water	Oral (rat) LD50: >90000 mg/kg <sup>[2]</sup>	Not Available	
Legend:	Nalue 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		

Version No: 4.1.1.1 CTP Green Gum Washout

Issue Date: **03/07/2014**Print Date: **10/11/2015** 

Acute Toxicity	✓	Carcinogenicity	0
Skin Irritation/Corrosion	✓	Reproductivity	0
Serious Eye Damage/Irritation	<b>✓</b>	STOT - Single Exposure	✓
Respiratory or Skin sensitisation	<b>✓</b>	STOT - Repeated Exposure	0
Mutagenicity	0	Aspiration Hazard	0

Legend:

X – Data available but does not fill the criteria for classification

Data required to make classification available

Data Not Available to make classification

# **SECTION 12 ECOLOGICAL INFORMATION**

#### Toxicity

Ingredient	Endpoint	Test Duration	Species	Value	Source
naphtha petroleum, heavy, hydrotreated	EC50	96	Algae or other aquatic plants	640mg/L	2
d-limonene	LC50	96	Fish	0.199mg/L	3
d-limonene	EC50	48	Crustacea	0.36mg/L	2
d-limonene	EC50	96	Algae or other aquatic plants	0.212mg/L	3
phosphoric acid	LC50	96	Fish	75.10mg/L	2
phosphoric acid	EC50	48	Crustacea	>1000mg/L	2
phosphoric acid	EC50	72	Algae or other aquatic plants	77.90mg/L	2
5-chloro-2-methyl- 4-isothiazolin-3-one	LC50	96	Fish	0.19mg/L	4
5-chloro-2-methyl- 4-isothiazolin-3-one	EC50	48	Crustacea	0.028mg/L	4
5-chloro-2-methyl- 4-isothiazolin-3-one	EC50	72	Algae or other aquatic plants	0.021mg/L	4
5-chloro-2-methyl- 4-isothiazolin-3-one	EC0	48	Crustacea	2.5mg/L	1
5-chloro-2-methyl- 4-isothiazolin-3-one	EC100	504	Crustacea	7.47mg/L	1
water	LC50	96	Fish	897.5200mg/L	3
water	EC50	96	Algae or other aquatic plants	8768.8740mg/L	3

On the basis of available evidence concerning either toxicity, persistence, potential to accumulate and or observed environmental fate and behaviour, the material may present a danger, immediate or long-term and /or delayed, to the structure and/ or functioning of natural ecosystems.

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

For Terpenes such as Limonene and Isoprene:

Atmospheric Fate: Contribute to aerosol and photochemical smog formation. When terpenes are introduced to the atmosphere, may either decrease ozone concentrations when oxides of nitrogen are low or, if emissions take place in polluted air (i.e. containing high concentrations of nitrogen oxides), leads to an increase in ozone concentrations. Lower terpenoids can react with unstable reactive gases and may act as precursors of photochemical smog therefore indirectly influencing community and ecosystem properties. The reactions of ozone with larger unsaturated compounds, such as the terpenes can give rise to oxygenated species with low vapour pressures that subsequently condense to form secondary organic aerosol.

Aquatic Fate: Complex chlorinated terpenes such as toxaphene (a persistent, mobile and toxic insecticide) and its degradation products were produced by photoinitiated reactions in an aqueous system, initially containing limonene and other monoterpenes, simulating pulp bleach conditions.

Substances containing unsaturated carbons are ubiquitous in indoor environments. They result from many sources (see below). Most are reactive with environmental ozone and many produce stable products which are thought to adversely affect human health. The potential for surfaces in an enclosed space to facilitate reactions should be considered.

siable products writer are thought to ad	versely affect numan nealth. I he potential for surfaces in an e	enciosea space to iacilitate reactions snoula de considerea.
Source of unsaturated substances	Unsaturated substances (Reactive Emissions)	Major Stable Products produced following reaction with ozone.
Occupants (exhaled breath, ski oils, personal care products)	Isoprene, nitric oxide, squalene, unsaturated sterols, oleic acid and other unsaturated fatty acids, unsaturated oxidation products	Methacrolein, methyl vinyl ketone, nitrogen dioxide, acetone, 6MHQ, geranyl acetone, 4OPA, formaldehyde, nonanol, decanal, 9-oxo-nonanoic acid, azelaic acid, nonanoic acid.
Soft woods, wood flooring, including cypress, cedar and silver fir boards, houseplants	Isoprene, limonene, alpha-pinene, other terpenes and sesquiterpenes	Formaldehyde, 4-AMC, pinoaldehyde, pinic acid, pinonic acid, formic acid, methacrolein, methyl vinyl ketone, SOAs including ultrafine particles
Carpets and carpet backing	4-Phenylcyclohexene, 4-vinylcyclohexene, styrene, 2-ethylhexyl acrylate, unsaturated fatty acids and esters	Formaldehyde, acetaldehyde, benzaldehyde, hexanal, nonanal, 2-nonenal
Linoleum and paints/polishes containing linseed oil	Linoleic acid, linolenic acid	Propanal, hexanal, nonanal, 2-heptenal, 2-nonenal, 2-decenal, 1-pentene-3-one, propionic acid, n-butyric acid
Latex paint	Residual monomers	Formaldehyde
Certain cleaning products, polishes, waxes, air fresheners	Limonene, alpha-pinene, terpinolene, alpha-terpineol, linalool, linalyl acetate and other terpenoids, longifolene and other sesquiterpenes	Formaldehyde, acetaldehyde, glycoaldehyde, formic acid, acetic acid, hydrogen and organic peroxides, acetone, benzaldehyde, 4-hydroxy-4-methyl-5-hexen-1-al, 5-ethenyl-dihydro-5-methyl-2(3H)-furanone, 4-AMC, SOAs including ultrafine particles
Natural rubber adhesive	Isoprene, terpenes	Formaldehyde, methacrolein, methyl vinyl ketone
Photocopier toner, printed paper, styrene polymers	Styrene	Formaldehyde, benzaldehyde
Environmental tobacco smoke	Styrene, acrolein, nicotine	Formaldehyde, benzaldehyde, hexanal, glyoxal, N-methylformamide, nicotinaldehyde, cotinine

Chemwatch: **5888155** Page **9** of **11**Version No: **4.1.1.1** 

#### CTP Green Gum Washout

Issue Date: **03/07/2014**Print Date: **10/11/2015** 

Soiled clothing, fabrics, bedding	Squalene, unsaturated sterols, oleic acid and other saturated fatty acids	Acetone, geranyl acetone, 6MHO, 40PA, formaldehyde, nonanal, decanal, 9-oxo-nonanoic acid, azelaic acid, nonanoic acid
Soiled particle filters	Unsaturated fatty acids from plant waxes, leaf litter, and other vegetative debris; soot; diesel particles	Formaldehyde, nonanal, and other aldehydes; azelaic acid; nonanoic acid; 9-oxo-nonanoic acid and other oxo-acids; compounds with mixed functional groups (=O, -OH, and -COOH)
Ventilation ducts and duct liners	Unsaturated fatty acids and esters, unsaturated oils, neoprene	C5 to C10 aldehydes
"Urban grime"	Polycyclic aromatic hydrocarbons	Oxidized polycyclic aromatic hydrocarbons
Perfumes, colognes, essential oils (e.g. lavender, eucalyptus, tea tree)	Limonene, alpha-pinene, linalool, linalyl acetate, terpinene-4-ol, gamma-terpinene	Formaldehyde, 4-AMC, acetone, 4-hydroxy-4-methyl-5-hexen-1-al, 5-ethenyl-dihydro-5-methyl-2(3H) furanone, SOAs including ultrafine particles
Overall home emissions	Limonene, alpha-pinene, styrene	Formaldehyde, 4-AMC, pinonaldehyde, acetone, pinic acid, pinonic acid, formic acid, benzaldehyde, SOAs including ultrafine particles

Abbreviations: 4-AMC, 4-acetyl-1-methylcyclohexene; 6MHQ, 6-methyl-5-heptene-2-one, 4OPA, 4-oxopentanal, SOA, Secondary Organic Aerosols Reference: Charles J Weschler: Environmental Helath Perspectives. Vol 114. October 2006

Environmental Fate: Isothiazolinones are antimicrobials used to control bacteria, fungi, and for wood preservation and antifouling agents. They are frequently used in personal care products such as shampoos and other hair care products, as well as certain paint formulations. The most common isothiazolinone combinations are 5-chloro-2-methyl-4-isothiazolin-3-one, (CMI), and 2-methyl-4-isothiazolin-3-one, (MI).

Aquatic Fate: 5-chloro-2-methyl-4-isothiazolin-3-one, (CMI), and 2-methyl-4-isothiazolin-3-one, (MI), undergo primary biological breakdown with half-lives of less than 24 hours in both oxygenated and low oxygen sediments with >55% breakdown occurring within 29 days.

Ecotoxicity: The isothiazolinones are very toxic to marine organisms, (fish, Daphnia magna water fleas, and algae), and have low potential for accumulation in aquatic species. The proposed metabolites of MI and CMI are considered to have a low aquatic toxicity, based partially on data for the structurally related N-(n-octyl) malonamic acid.

#### For Limonenes:

Atmospheric Fate: Due to the high volatility of limonene, the atmosphere is expected to be the major environmental sink for this chemical. The oxidation of limonene may contribute to aerosol and photochemical smog formation. The daytime atmospheric lifetime of d-limonene is estimated to range from 12 to 48 minutes depending upon local hydroxyl rate and ozone concentrations. Ozonolysis of limonene may also lead to the formation of hydrogen peroxide and organic peroxides, which have various toxic effects on plant cells and may damage forests. Reactions with nitrogen oxides produce aerosol formation as well as lower molecular weight products such as formaldehyde, acetaldehyde, formic acid, acetone and peroxyacetyl nitrate.

Terrestrial fate: When released to the ground, limonene is expected to have low to very low mobility in soil based on its physicochemical properties. It is expected that limonene will rapidly volatilize from both dry and moist soil, however, its absorption to soil may slow the process.

Aquatic fate: In the aquatic environment, limonene is expected to evaporate to a significant extent owing to its high volatility. The estimated half-life for volatilisation of limonene from a model river 1 m deep is 3.4 h. Some limonene is expected to absorb to sediment and suspended organic matter. Hydrolysis of limonene is not expected in terrestrial or in aquatic environments. The hydrolytic half-life of d-limonene is estimated to be >1000 days.

Ecotoxicity: Biotic degradation of limonene has been shown with some species of microorganisms such as Penicillium digitatum, Corynespora cassiicola, Diplodia gossyppina and a soil strain of Pseudomonans sp (SL strain). Limonene is readily biodegradable under aerobic conditions. Biodegradation has been assessed under anaerobic conditions; there was no indication of any metabolisms, possibly because of the toxicity to micro-organisms. Limonene may bioaccumulate in fish and other aquatic species. Technical limonene is practically nontoxic to birds and is slightly toxic to freshwater fish and invertebrates on an acute basis. Limonene has low subacute toxicity to bobwhite quail.

DO NOT discharge into sewer or waterways

#### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
d-limonene	HIGH	HIGH
phosphoric acid	HIGH	HIGH
5-chloro-2-methyl- 4-isothiazolin-3-one	HIGH	HIGH
water	LOW	LOW

### **Bioaccumulative potential**

Ingredient	Bioaccumulation
d-limonene	HIGH (LogKOW = 4.8275)
phosphoric acid	LOW (LogKOW = -0.7699)
5-chloro-2-methyl- 4-isothiazolin-3-one	LOW (LogKOW = 0.0444)
water	LOW (LogKOW = -1.38)

#### Mobility in soil

Ingredient	Mobility
d-limonene	LOW (KOC = 1324)
phosphoric acid	HIGH (KOC = 1)
5-chloro-2-methyl- 4-isothiazolin-3-one	LOW (KOC = 45.15)
water	LOW (KOC = 14.3)

#### **SECTION 13 DISPOSAL CONSIDERATIONS**

Otherwise:

#### Waste treatment methods

- ► Containers may still present a chemical hazard/ danger when empty.
- ▶ Return to supplier for reuse/ recycling if possible.

# Product / Packaging disposal

- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
  - Where possible retain label warnings and SDS and observe all notices pertaining to the product.

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.

Version No: 4.1.1.1 CTP Green Gum Washout

Issue Date: **03/07/2014**Print Date: **10/11/2015** 

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- ▶ Reuse
- ▶ Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

- ▶ **DO NOT** allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Authority for disposal.
- ▶ Bury or incinerate residue at an approved site.
- ▶ Recycle containers if possible, or dispose of in an authorised landfill.

#### **SECTION 14 TRANSPORT INFORMATION**

#### **Labels Required**

Marine Pollutant	NO
HAZCHEM	Not Applicable

#### Land transport (ADG): 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 73 / 78 and the IBC code

Source	Ingredient	Pollution Category
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	d-limonene	Υ
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	phosphoric acid	Z

# **SECTION 15 REGULATORY INFORMATION**

#### Safety, health and environmental regulations / legislation specific for the substance or mixture

#### NAPHTHA PETROLEUM, HEAVY, HYDROTREATED(64742-48-9.) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Substances Information System - Consolidated Lists

Australia Inventory of Chemical Substances (AICS)

D-LIMONENE(5989-27-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Substances Information System - Consolidated Lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC

Australia Inventory of Chemical Substances (AICS)

Monographs

PHOSPHORIC ACID(7664-38-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards Australia Inventory of Chemical Substances (AICS)

Australia Hazardous Substances Information System - Consolidated Lists

#### 5-CHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE(26172-55-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

# Not Applicable

#### WATER(7732-18-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

National Inventory	Status
Australia - AICS	Υ
Canada - DSL	Y
Canada - NDSL	N (5-chloro-2-methyl-4-isothiazolin-3-one; phosphoric acid; water; d-limonene; naphtha petroleum, heavy, hydrotreated)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Υ
Japan - ENCS	N (water; naphtha petroleum, heavy, hydrotreated)
Korea - KECI	Υ
New Zealand - NZIoC	Y
Philippines - PICCS	Υ
USA - TSCA	Y
Legend:	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

Chemwatch: **5888155** Page **11** of **11** 

Version No: 4.1.1.1

**CTP Green Gum Washout** 

Issue Date: **03/07/2014**Print Date: **10/11/2015** 

#### **SECTION 16 OTHER INFORMATION**

#### Other information

#### Ingredients with multiple cas numbers

Name	CAS No
naphtha petroleum, heavy, hydrotreated	101795-02-2., 64742-48-9.
d-limonene	138-86-3, 5989-27-5
phosphoric acid	16271-20-8, 7664-38-2

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.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net

The (M)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**

 ${\sf PC-TWA: Permissible \ Concentration-Time \ Weighted \ Average}$ 

 ${\sf PC-STEL} : {\sf Permissible Concentration-Short Term Exposure Limit}$ 

IARC: International Agency for Research on Cancer

ACGIH: American Conference of Governmental Industrial Hygienists

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit $_{\circ}$ 

IDLH: Immediately Dangerous to Life or Health Concentrations

OSF: Odour Safety Factor

NOAEL: No Observed Adverse Effect Level LOAEL: Lowest Observed Adverse Effect Level

LOAEL: Lowest Observed Adverse E TLV: Threshold Limit Value

LOD: Limit Of Detection OTV: Odour Threshold Value BCF: BioConcentration Factors BEI: Biological Exposure Index