

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
(Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96
Version No:4
Page 1 of 21

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]

PROPER SHIPPING NAME

FLAMMABLE LIQUID, N.O.S.(contains 2-methylpentane and heptane)

PRODUCT USE

■ 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 according to manufacturer's directions.
Printing industry use only.

SUPPLIER

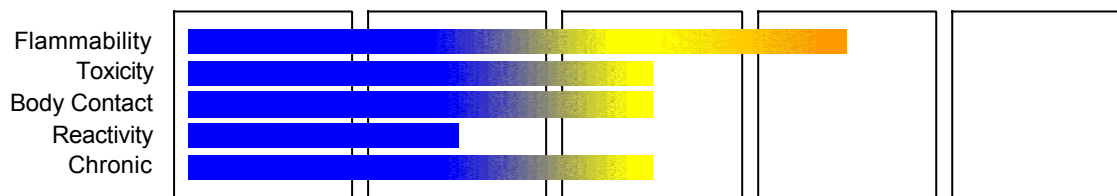
Company: Hurst Australia Pty Ltd
Address:
10 Bellona Avenue
Regents Park
NSW, 2143
Australia
Telephone: +61 2 9644 6888
Emergency Tel: **+61 2 9644 6888**
Fax: +61 2 9644 6534
Email: info@hurst.com.au

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

HAZARDOUS SUBSTANCE. DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.

CHEMWATCH HAZARD RATINGS



SCALE: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4



continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
(Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96

Version No:4

Page 2 of 21

Section 2 - HAZARDS IDENTIFICATION

RISK

- Highly flammable.
- Irritating to skin.
- Harmful: danger of serious damage to health by prolonged exposure through inhalation.
- Very toxic to aquatic organisms, may cause long- term adverse effects in the aquatic environment.
- Possible risk of harm to the unborn child.
- HARMFUL- May cause lung damage if swallowed.
- Vapours may cause drowsiness and dizziness.
- Inhalation, skin contact and/or ingestion may produce health damage*.
- Cumulative effects may result following exposure*.
- May produce discomfort of the eyes and respiratory tract*.
- Limited evidence of a carcinogenic effect*.
- Repeated exposure potentially causes skin dryness and cracking*.

* (limited evidence).

SAFETY

- Keep away from sources of ignition. No smoking.
- Do not breathe gas/fumes/vapour/spray.
- Avoid contact with skin.

- Avoid contact with eyes.

- Wear suitable protective clothing.
- Wear suitable gloves.
- Wear eye/face protection.
- Use only in well ventilated areas.

- Keep container in a well ventilated place.

- Avoid exposure - obtain special instructions before use.
- Do not empty into drains.
- To clean the floor and all objects contaminated by this material, use water and detergent.
- Keep container tightly closed.
- This material and its container must be disposed of in a safe way.
- Keep away from food, drink and animal feeding stuffs.
- In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.
- If swallowed, IMMEDIATELY contact Doctor or Poisons Information Centre. (show this container or label).
- Use appropriate container to avoid environmental contamination.
- Avoid release to the environment. Refer to special instructions/Safety data sheets.
- This material and its container must be disposed of as hazardous waste.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
2- methylpentane	107-83-5	>60
heptane	142-82-5	30-60
toluene	108-88-3	<10

Section 4 - FIRST AID MEASURES

SWALLOWED

- If swallowed do NOT induce vomiting.

continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
(Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96

Version No:4

Page 3 of 21

Section 4 - FIRST AID MEASURES

- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.
- Avoid giving milk or oils.
- Avoid giving alcohol.
- If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

EYE

- If this product comes in contact with the eyes:
 - Wash 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

- 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.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- 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.
- Transport to hospital, or doctor.

NOTES TO PHYSICIAN

■ 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.
- 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

continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
(Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96

Version No:4

Page 4 of 21

Section 4 - FIRST AID MEASURES

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].

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Do not use a water jet to fight fire.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- Fight fire from a safe distance, with adequate cover.
- If safe, switch off electrical equipment until vapour fire hazard removed.
- Use water delivered as a fine spray to control the fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- Do not approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 500 metres in all directions.

FIRE/EXPLOSION HAZARD

- Liquid and vapour are highly flammable.
- Severe fire hazard when exposed to heat, flame and/or oxidisers.
- Vapour may travel a considerable distance to source of ignition.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).

Combustion products include: carbon dioxide (CO₂), other pyrolysis products typical of burning organic material.

Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions.

May emit clouds of acrid smoke.

FIRE INCOMPATIBILITY

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

HAZCHEM

•3YE

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.

continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
 (Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96
Version No:4
Page 5 of 21

Section 6 - ACCIDENTAL RELEASE MEASURES

- Contain and absorb small quantities with vermiculite or other absorbent material.
- Wipe up.
- Collect residues in a flammable waste container.

MAJOR SPILLS

■ Chemical Class: aromatic hydrocarbons

For release onto land: recommended sorbents listed in order of priority.

SORBENT TYPE	RANK	APPLICATION	COLLECTION	LIMITATIONS
LAND SPILL - SMALL				
Feathers - pillow	1	throw	pitchfork	DGC, RT
cross- linked polymer - particulate	2	shovel	shovel	R, W, SS
cross- linked polymer- pillow sorbent clay - particulate	2	throw	pitchfork	R, DGC, RT
treated clay/ treated natural organic - particulate	3	shovel	shovel	R, I, P,
treated clay/ treated natural organic - particulate	3	shovel	shovel	R, I
wood fibre - pillow	4	throw	pitchfork	R, P, DGC, RT
LAND SPILL - MEDIUM				
cross- linked polymer - particulate	1	blower	skidloader	R, W, SS
treated clay/ treated natural organic - particulate	2	blower	skidloader	R, I
sorbent clay - particulate	3	blower	skidloader	R, I, P
polypropylene - particulate	3	blower	skidloader	W, SS, DGC
feathers - pillow	3	throw	skidloader	DGC, RT
expanded mineral - particulate	4	blower	skidloader	R, I, W, P, DGC

Legend
 DGC: Not effective where ground cover is dense
 R; Not reusable
 I: Not incinerable
 P: Effectiveness reduced when rainy

continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
(Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96
Version No:4
Page 6 of 21

Section 6 - ACCIDENTAL RELEASE MEASURES

RT: Not effective where terrain is rugged

SS: Not for use within environmentally sensitive sites

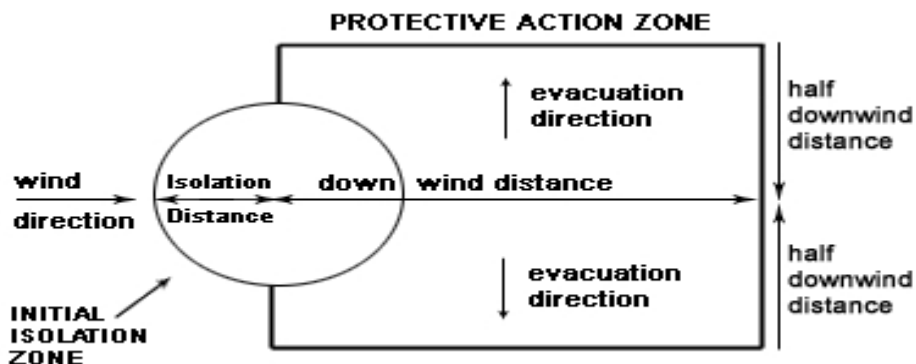
W: Effectiveness reduced when windy

Reference: Sorbents for Liquid Hazardous Substance Cleanup and Control;

R.W Melvold et al: Pollution Technology Review No. 150: Noyes Data Corporation 1988.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Water spray or fog may be used to disperse /absorb vapour.
- Contain spill with sand, earth or vermiculite.
- Use only spark-free shovels and explosion proof equipment.
- Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

PROTECTIVE ACTIONS FOR SPILL



From IERG (Canada/Australia)

Isolation Distance	25 metres
Downwind Protection Distance	300 metres
IERG Number	14

FOOTNOTES

1 PROTECTIVE ACTION ZONE is defined as the area in which people are at risk of harmful exposure. This zone assumes that random changes in wind direction confines the vapour plume to an area within 30 degrees on either side of the predominant wind direction, resulting in a crosswind protective action distance equal to the downwind protective action distance.

2 PROTECTIVE ACTIONS should be initiated to the extent possible, beginning with those closest to the spill and working away from the site in the downwind direction. Within the protective action zone a level of vapour concentration may exist resulting in nearly all unprotected persons becoming incapacitated and unable to take protective action and/or incurring serious or irreversible health effects.

3 INITIAL ISOLATION ZONE is determined as an area, including upwind of the incident, within which a high

continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
(Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96
Version No:4
Page 7 of 21

Section 6 - ACCIDENTAL RELEASE MEASURES

probability of localised wind reversal may expose nearly all persons without appropriate protection to life-threatening concentrations of the material.

4 SMALL SPILLS involve a leaking package of 200 litres (55 US gallons) or less, such as a drum (jerrican or box with inner containers). Larger packages leaking less than 200 litres and compressed gas leaking from a small cylinder are also considered "small spills".

LARGE SPILLS involve many small leaking packages or a leaking package of greater than 200 litres, such as a cargo tank, portable tank or a "one-tonne" compressed gas cylinder.

5 Guide 128 is taken from the US DOT emergency response guide book.

6 IERG information is derived from CANUTEC - Transport Canada.

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

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR 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.
 - 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.
 - Avoid smoking, naked lights, heat or ignition sources.
 - When handling, DO NOT eat, drink or smoke.
 - Vapour may ignite on pumping or pouring due to static electricity.
 - DO NOT use plastic buckets.
 - Earth and secure metal containers when dispensing or pouring product.
 - Use spark-free tools when handling.
 - Avoid contact with incompatible materials.
 - Keep containers securely sealed.
 - Avoid physical damage to containers.
 - Always wash hands with soap and water after handling.
 - Work clothes should be laundered separately.
 - Use good occupational work practice.
 - Observe manufacturer's storing and handling recommendations.
 - Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
 (Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96
Version No:4
Page 8 of 21

Section 7 - HANDLING AND STORAGE

SUITABLE CONTAINER

- Packing as supplied by manufacturer.
- Plastic containers may only be used if approved for flammable liquid.
- Check that containers are clearly labelled and free from leaks.
- For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type. (ii) : Where a can is to be used as an inner package, the can must have a screwed enclosure.
- For materials with a viscosity of at least 2680 cSt. (23 deg. C)
- For manufactured product having a viscosity of at least 250 cSt. (23 deg. C)
- Manufactured product that requires stirring before use and having a viscosity of at least 20 cSt (25 deg. C)
- (i) : Removable head packaging;
- (ii) : Cans with friction closures and
- (iii) : low pressure tubes and cartridges may be used.
- Where combination packages are used, and the inner packages are of glass, there must be sufficient inert cushioning material in contact with inner and outer packages
- In addition, where inner packagings are glass and contain liquids of packing group I there must be sufficient inert absorbent to absorb any spillage, unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.

STORAGE INCOMPATIBILITY

- Avoid reaction with oxidising agents.

STORAGE REQUIREMENTS

- Store in original containers in approved flame-proof area.
- No smoking, naked lights, heat or ignition sources.
- DO NOT store in pits, depressions, basements or areas where vapours may be trapped.
- Keep containers securely sealed.
- Store away from incompatible materials in a cool, dry well ventilated area.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



- +: *May be stored together*
- O: *May be stored together with specific preventions*
- X: *Must not be stored together*

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	TWA F/CC	Notes
Australia Exposure Standards	Hurst 150 Film and Scanner Drum Cleaner (Hexane, other isomers)	500	1760	1000	3500				

continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
 (Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96
Version No:4
Page 9 of 21

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	TWA F/CC	Notes
Australia Exposure Standards	heptane (Heptane (n- Heptane))	400	1640	500	2050				
Australia Exposure Standards	toluene (Toluene)	50	191	150	574				Sk

EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m ³)	Revised IDLH Value (ppm)
heptane	137	750
toluene	84	500

MATERIAL DATA

HEPTANE:

HURST 150 FILM AND SCANNER DRUM CLEANER:

- for heptane (all isomers)

The TLV-TWA is protective against narcotic and irritant effects which are greater than those of pentane or n-hexane but less than those of octane. The TLV-TWA applies to all isomers.

Inhalation by humans of 1000 ppm for 6 minutes produced slight dizziness. Higher concentrations for shorter periods produce marked vertigo, incoordination and hilarity. Signs of central nervous system depression occur in the absence of mucous membrane irritation. Brief exposures to high levels (5000 ppm for 4 minutes) produce nausea, loss of appetite and a "gasoline-like" taste in the mouth that persists for many hours after exposure ceases.

2-METHYLPENTANE:

HURST 150 FILM AND SCANNER DRUM CLEANER:

- for: hexane, isomers (excluding n-hexane)

The TLV-TWA is thought to be protective against nausea, headache, upper respiratory tract irritation and CNS depression. The STEL is added to prevent objective depression of the CNS. The lower value ascribed to n-hexane is due to the neurotoxicity of its metabolites, principally 5-hydroxy-2-hexanone and 2,5-hexanedione. It is considered unlikely that other hexanes follow the same metabolic route. It should be noted however that the n-hexane TLV-TWA also applies to commercial hexane having a concentration of greater than 5% n-hexane.

HURST 150 FILM AND SCANNER DRUM CLEANER:

TOLUENE:

- For toluene:

Odour Threshold Value: 0.16-6.7 (detection), 1.9-69 (recognition)

NOTE: Detector tubes measuring in excess of 5 ppm, are available.

High concentrations of toluene in the air produce depression of the central nervous system (CNS) in humans. Intentional toluene exposure (glue-sniffing) at maternally-intoxicating concentration has also produced birth defects. Foetotoxicity 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 reductions in cognitive responses reported amongst humans inhaling greater than 40 ppm, and the significant risks of hepatotoxic, 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.

continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
(Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96
Version No:4
Page 10 of 21

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Odour Safety Factor(OSF)
OSF=17 (TOLUENE).

TOLUENE:

■ Exposure limits with "skin" notation indicate that vapour and liquid may be absorbed through intact skin. 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.

PERSONAL PROTECTION



EYE

- 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 lens 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].

HANDS/FEET

- Wear chemical protective gloves, eg. PVC.
- Wear safety footwear or safety gumboots, eg. Rubber.

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.
- 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.

- Neoprene rubber gloves.

continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
(Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96
Version No:4
Page 11 of 21

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

OTHER

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.
- Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity.
- For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets), non sparking safety footwear.

RESPIRATOR

- Type AX Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)
 - Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content. The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required. For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

- CARE: Use of a quantity of this material in confined space or poorly ventilated area, where rapid build up of concentrated atmosphere may occur, could require increased ventilation and/or protective gear. 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.

For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion-resistant.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Clear liquid with a characteristic odour; not miscible with water.

PHYSICAL PROPERTIES

Does not mix with water.
Floats on water.

continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
(Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96
Version No:4
Page 12 of 21

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

State	LIQUID	Molecular Weight	Not applicable
Melting Range (°C)	Not available	Viscosity	Not Available
Boiling Range (°C)	60- 112	Solubility in water (g/L)	Immiscible
Flash Point (°C)	<- 10	pH (1% solution)	Not available
Decomposition Temp (°C)	Not Available	pH (as supplied)	Not available
Autoignition Temp (°C)	Not available	Vapour Pressure (kPa)	0.2 @20C
Upper Explosive Limit (%)	7.4	Specific Gravity (water=1)	0.7
Lower Explosive Limit (%)	1	Relative Vapour Density (air=1)	>1
Volatile Component (%vol)	100	Evaporation Rate	3 approx BuAc=1
heptane log Kow (Sangster 1997):		4.66	
toluene log Kow (Sangster 1997):		2.73	

Section 10 - STABILITY AND REACTIVITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ 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.

EYE

■ There is some evidence to suggest that this material can cause eye irritation and damage in some persons. Instillation of isoparaffins into rabbit eyes produces only slight irritation.

SKIN

■ This material can cause inflammation of the skin oncontact 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 absorption of 2-methylpentane from laboratory studies is slower compared to toluene.

Open cuts, abraded or irritated skin should not be exposed to this material.

Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
(Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96

Version No:4

Page 13 of 21

Section 11 - TOXICOLOGICAL INFORMATION

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.

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

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.

2-methylpentane has not shown to damage the nervous system (unlike n-hexane).

Inhalation hazard is increased at higher temperatures.

Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination.

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, by humans, of 1000 ppm heptane for 6 minutes was associated with slight dizziness; inhalation of higher concentrations for shorter periods, resulted in marked vertigo, incoordination, and hilarity. Signs of central nervous system (CNS) involvement occurred in the absence of noticeable mucous membrane irritation and were noticed promptly on entering such atmospheres.

Concentrations of 10,000-15,000 ppm, heptane produced narcosis on mice within 30-50 minutes. Exposure at higher concentrations (15,000-20,000 ppm) for 30-60 minutes caused convulsions and death in mice; inhalation of 48,000 ppm produced respiratory arrest in three of four head-exposed mice within 3 minutes. Brief exposure (4 minutes) to high levels (5000 ppm) produced nausea, loss of appetite and a "gasoline-taste" that persisted for several hours post-exposure.

Material is highly volatile and may quickly form a concentrated atmosphere in confined or unventilated areas. Vapour is heavier than air and may displace and replace air in breathing zone, acting as a simple asphyxiant. This may happen with little warning of overexposure.

CHRONIC HEALTH EFFECTS

■ Harmful: danger of serious damage to health by prolonged exposure through inhalation.

This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects. This has been demonstrated via both short- and long-term experimentation.

Based on experience with animal studies, exposure to the material may result in toxic effects to the development of the foetus, at levels which do not cause significant toxic effects to the mother.

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.

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

Intentional abuse (glue sniffing) or occupational exposure to toluene can result in chronic habituation.

Chronic abuse has caused inco-ordination, tremors of the extremities (due to widespread cerebrum withering), headache, abnormal speech, temporary memory loss, convulsions, coma, drowsiness, reduced colour perception, blindness, nystagmus (rapid, involuntary eye movements), hearing loss leading to deafness and mild dementia.

Toluene addicts often display a range of disease phenomena in their nervous systems. Toluene abuse can cause kidney disease but occupational toluene exposures usually do not cause it. Chronic exposure to toluene can damage the heart and the blood, especially causing heartbeat irregularities. High concentrations of toluene can harm the unborn baby and the developing infant.

TOXICITY AND IRRITATION

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
(Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96

Version No:4

Page 14 of 21

Section 11 - TOXICOLOGICAL INFORMATION

HURST 150 FILM AND SCANNER DRUM CLEANER:

- Not available for mixture or identified for ingredient(s).

2-METHYLPENTANE:

- No significant acute toxicological data identified in literature search.

HEPTANE:

TOXICITY

Inhalation (human) TCLo: 1000 ppm/6m

IRRITATION

Nil Reported

TOLUENE:

TOXICITY

Oral (human) LDLo: 50 mg/kg

Oral (rat) LD50: 636 mg/kg

Inhalation (human) TCLo: 100 ppm

Inhalation (man) TCLo: 200 ppm

Inhalation (rat) LC50: >26700 ppm/1h

Dermal (rabbit) LD50: 12124 mg/kg

IRRITATION

Skin (rabbit):20 mg/24h- Moderate

Skin (rabbit):500 mg - Moderate

Eye (rabbit):0.87 mg - Mild

Eye (rabbit): 2mg/24h - SEVERE

Eye (rabbit):100 mg/30sec - Mild

- The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

For toluene:

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.

Humans - Toluene ingestion or inhalation can result in severe central nervous system depression, and in large doses, can act as a narcotic. The ingestion of about 60 mL resulted in fatal nervous system depression within 30 minutes in one reported case.

Constriction and necrosis of myocardial fibers, 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

Animals - The initial effects are instability and incoordination, lachrymation and snuffles (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. A reported lowest-observed-effect level in humans for adverse neurobehavioral effects is 88 ppm.

Humans - Chronic occupational exposure and incidences of toluene abuse have resulted in hepatomegaly and liver function changes. It has also resulted in nephrotoxicity and, in one case, was a cardiac sensitiser 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 leukopenia and neutropenia. Exposure levels were not given in the secondary reference; however, the average urinary excretion of hippuric acid, a metabolite of toluene, was given as 4 g/L compared to a normal level of 0.6 g/L

Animals - The major target organs for the subchronic/chronic toxicity of toluene are the nervous system, liver, and kidney. Depressed immune response has been reported in male mice given doses of 105 mg/kg/day for 28 days. Toluene in corn oil administered to F344 male and female rats by gavage 5 days/week for 13 weeks, induced prostration, hypoactivity, ataxia, piloerection, lachrymation, excess salivation, and body tremors at

continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
(Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96
Version No:4
Page 15 of 21

Section 11 - TOXICOLOGICAL INFORMATION

doses 2500 mg/kg. Liver, kidney, and heart weights were also increased at this dose and histopathologic lesions were seen in the liver, kidneys, brain and urinary bladder. The no-observed-adverse effect level (NOAEL) for the study was 312 mg/kg (223 mg/kg/day) and the lowest-observed-adverse effect level (LOAEL) for the study was 625 mg/kg (446 mg/kg/day) .

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 effect the developing offspring in laboratory animals.

Humans - Variable growth, microcephaly, CNS dysfunction, attentional deficits, minor craniofacial and limb abnormalities, and developmental delay were seen in three children exposed to toluene in utero as a result of maternal solvent abuse before and during pregnancy

Animals - Sternebral alterations, extra ribs, and missing tails were reported following treatment of rats with 1500 mg/m³ toluene 24 hours/day during days 9-14 of gestation. Two of the dams died during the exposure. Another group of rats received 1000 mg/m³ 8 hours/day during days 1-21 of gestation. No maternal deaths or toxicity occurred, however, minor skeletal retardation was present in the exposed fetuses. CFLP Mice were exposed to 500 or 1500 mg/m³ toluene continuously during days 6-13 of pregnancy. All dams died at the high dose during the first 24 hours of exposure, however none died at 500 mg/m³. Decreased foetal weight was reported, but there were no differences in the incidences of skeletal malformations or anomalies between the treated and control offspring.

Absorption - 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 vapor.

Dermal absorption is expected to be higher upon exposure to the liquid; however, exposure is limited by the rapid evaporation of toluene .

Distribution - 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 vascularised tissues .

Metabolism - 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 benzoyl glucuronide. o-cresol and p-cresol formed by ring hydroxylation are considered minor metabolites

Excretion - Toluene is primarily (60-70%) excreted through the urine as hippuric acid. The excretion of benzoyl 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.

CARCINOGEN

Toluene	International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs	Group	3
---------	---	-------	---

REPROTOXIN

toluene	ILO Chemicals in the electronics industry that have toxic effects on reproduction	Reduced fertility or sterility
---------	---	--------------------------------

SKIN

toluene	Australia Exposure Standards - Skin	Notes	Sk
---------	-------------------------------------	-------	----

continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
(Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96
Version No:4
Page 16 of 21

Section 12 - ECOLOGICAL INFORMATION

HEPTANE:

TOLUENE:

2-METHYLPENTANE:

■ DO NOT discharge into sewer or waterways.

HEPTANE:

2-METHYLPENTANE:

■ 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.

2-METHYLPENTANE:

■ May cause long-term adverse effects in the aquatic environment.

May cause long-term adverse effects in the aquatic environment.

For n-Hexane: Log Kow: 3.17-3.94; Henry's Law Constant: 1.69 atm-m³ mol; Vapor Pressure: 150 mm Hg @ 25 C; Log Koc: 2.90 to 3.61. BOD 5, (if unstated): 2.21; COD: 0.04; ThOD: 3.52.

Atmospheric Fate: n-Hexane is not expected to be directly broken down by sunlight. The main atmospheric removal mechanism is through reactions with hydroxyl radicals, with an approximant half-life of 2.9 days. The smog-producing potential of n-hexane is very low, compared to other alkanes, or chlorinated VOCs. Hydroxyl ion reactions in the upper troposphere, therefore, are probably the primary mechanisms for n-hexane degradation in the atmosphere.

Terrestrial Fate: Surface evaporation is expected to be the main fate process of this substance in soil. The substance has a moderate ability to sorb to soil particles but, is expected to have low potential for leaching into the lower soil depths. n-Hexane is expected to generally stay near the soil surface and, if not appreciably sorbed into the soil matrix, will eventually evaporate. Exceptions would involve locations with shallow groundwater tables where large spills occur - in such cases, n-hexane would spread out to contaminate a large volume of soil. Once introduced into groundwater, n-hexane may be fairly persistent, since its degradation by water is slow and opportunities for biodegradation may be limited, (due to low oxygen conditions), or, where nutrients, such as nitrogen or phosphorus, are in limited supply. Biological breakdown is probably the most significant degradation mechanism in groundwater. *Pseudomonas mendocina* bacteria have been shown to break the substance down in groundwater and mixed/pure bacterial cultures can utilize the substance, in the presence of oxygen. The most important biological breakdown process involves the conversion of n-hexane to primary alcohols, aldehydes and, ultimately, into fatty acids. In general, unless the n-hexane is buried at some depth within a soil or sediment, evaporation is generally assumed to occur at a much more rapid rate than chemical or biochemical degradation processes.

Aquatic Fate: The dominant transport process from water is evaporation, with an estimated half-life of <3 hours. For standing bodies of water, a half-life no longer than 6.8 days is estimated. The substance has very low water solubility and is resistant to breakdown by water. Few data exist for the biological breakdown of n-hexane in water, however; this process is not considered to be as rapid as evaporation. N-Hexane may be persistent if released to deep sediment.

Ecotoxicity: This substance is not expected to concentrate/accumulate in aquatic organisms or the food chain. These substances are considered to be the most readily biodegradable fractions in petroleum, particularly when oxygen is present in solution. The substance is moderately toxic to rainbow trout, fathead minnow, bluegill, and *Daphnia* water fleas.

HEPTANE:

■ Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

For n-Heptane: Log Kow: 4.66; Koc: 2400-8100; Half-life (hr) Air: 52.8; Half-life (hr) Surface Water: 2.9-312; Henry's atm m³ /mol: 2.06; BOD 5 (if unstated): 1.92; COD: 0.06; BCF: 340-2000; Log BCF: 2.53-3.31.

Atmospheric Fate: Breakdown of n-heptane by sunlight is not expected to be an important fate process. If released to the atmosphere, n-heptane is expected to exist entirely in the vapor phase, in ambient air. Reactions hydroxyl radicals in the atmosphere have been shown to be important. Night-time reactions with

continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
(Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96

Version No:4

Page 17 of 21

Section 12 - ECOLOGICAL INFORMATION

nitrate radicals may contribute to the atmospheric transformation of n-heptane, especially in urban environments. n-Heptane is not expected to be susceptible to direct breakdown by sunlight
Terrestrial Fate: n-Heptane is expected to be broken down by biological processes in the soil; however, evaporation and adsorption from soil are expected to be a more important fate processes. n-Heptane will be slightly mobile to immobile in soil.

Aquatic Fate: Breakdown of n-heptane by water is not expected to be an important fate process. Biological breakdown may occur in water; however, evaporation is expected to be a more important fate process. The evaporation half-life for the substance from a model river is 2.9 hours and from a model pond is 13 days. In aquatic systems, n-heptane may partition from the water column to organic matter in sediments and suspended solids.

Ecotoxicity: Concentration of the substance in aquatic life may be important in aquatic environments. The substance is moderately toxic to goldfish; however n-heptane has low toxicity to golden orfe, western mosquitofish, Daphnia magna water fleas, and snail. The substance is toxic to opossum shrimp.

TOLUENE:

■ For Toluene:

log Kow : 2.1-3;

log Koc : 1.12-2.85;

Koc : 37-260;

log Kom : 1.39-2.89;

Half-life (hr) air : 2.4-104;

Half-life (hr) H₂O surface water : 5.55-528;

Half-life (hr) H₂O ground : 168-2628;

Half-life (hr) soil : <48-240;

Henry's Pa m³ /mol : 518-694;

Henry's atm m³ /mol : 5.94;

E-03BOD 5 0.86-2.12, 5%COD - 0.7-2.52,21-27%;

ThOD - 3.13 ; BCF - 1.67-380;

log BCF - 0.22-3.28.

Atmospheric Fate: The majority of toluene evaporates to the atmosphere from the water and soil. 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.

Terrestrial Fate: Toluene is moderately retarded by adsorption to soils rich in organic material, therefore, transport to ground water is dependent on soil composition. In unsaturated topsoil containing organic material, it has been estimated that 97% of the toluene is adsorbed to the soil and only about 2% is in the soil-water phase and transported with flowing groundwater. There is little retardation in sandy soils and 2-13% of the toluene was estimated to migrate with flowing water; the remainder was volatilized, biodegraded, or unaccounted for. In saturated deep soils with no soil-air phase, about 48% may be transported with flowing groundwater. In surface soil, volatilization to air is an important fate process for toluene. In the environment, biodegradation of toluene to carbon dioxide occurs with a typical half life of 1-7 days.

Aquatic Fate: An important fate process for toluene is volatilization, the rate of which depends on the amount of turbulence in the surface water. The volatilization of toluene from static water has a half life of 1-16 days, whereas from turbulent water the half life is 5-6 hours. Degradation of toluene in surface water occurs primarily by biodegradation with a half life of less than one day under favorable conditions (presence of microorganisms, microbial adaptation, and optimum temperature). Biodegradation also occurs in shallow groundwater and in salt water (at a reduced rate). No data are available on anaerobic degradation of toluene in deep ground water conditions where aerobic degradation would be minimal.

Ecotoxicity: Bioaccumulation in the food chain is predicted to be low. Toluene has moderate acute toxicity to aquatic organisms. Toluene is, on the average, slightly toxic to fathead minnow, guppies and goldfish and not acutely toxic to bluegill or channel catfish and crab. Toluene, on the average, is slightly toxic to crustaceans specifically, shrimp species including grass shrimp and daggerblade grass shrimp. Toluene has a negative effect on green algae during their growth phase.

continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
(Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96
Version No:4
Page 18 of 21

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
2- methylpentane	LOW	No Data Available	LOW	MED
heptane	HIGH	No Data Available	HIGH	MED
toluene	LOW	MED	LOW	MED

Section 13 - DISPOSAL CONSIDERATIONS

■ 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.

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.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible material).
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

Section 14 - TRANSPORTATION INFORMATION



Labels Required: FLAMMABLE LIQUID

HAZCHEM:

•3YE (ADG7)

continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
(Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96
Version No:4
Page 19 of 21

Section 14 - TRANSPORTATION INFORMATION

Land Transport UNDG:

Class or division:	3	Subsidiary risk:	None
UN No.:	1993	UN packing group:	II
Shipping Name:FLAMMABLE LIQUID, N.O.S. (contains 2-methylpentane and heptane)			

Air Transport IATA:

ICAO/IATA Class:	3	ICAO/IATA Subrisk:	None
UN/ID Number:	1993	Packing Group:	II
Special provisions:	A3		

Shipping name:FLAMMABLE LIQUID, N.O.S.(contains 2-methylpentane and heptane)

Maritime Transport IMDG:

IMDG Class:	3	IMDG Subrisk:	None
UN Number:	1993	Packing Group:	II
EMS Number:	F-E,S-E	Special provisions:	274
Limited Quantities:	1 L	Marine Pollutant:	Yes
Shipping name:FLAMMABLE LIQUID, N.O.S.(contains 2-methylpentane and heptane)			

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE

S5

REGULATIONS

Regulations for ingredients

2-methylpentane (CAS: 107-83-5) is found on the following regulatory lists;

"Australia Hazardous Substances","Australia Inventory of Chemical Substances (AICS)","GESAMP/EHS Composite List - GESAMP Hazard Profiles","IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances","International Council of Chemical Associations (ICCA) - High Production Volume List"

heptane (CAS: 142-82-5,31394-54-4) is found on the following regulatory lists;

"Australia Exposure Standards","Australia Hazardous Substances","Australia High Volume Industrial Chemical List (HVICL)","IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances"

toluene (CAS: 108-88-3) is found on the following regulatory lists;

"Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (AQUA/1 to 6 - non-pesticide anthropogenic organics)","Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (Domestic water supply - organic compounds)","Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (Aquatic habitat)","Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (Domestic water supply quality)","Australia Customs (Prohibited Exports) Regulations 1958 - Schedule 9 Precursor substances - Part 2","Australia Exposure Standards","Australia Hazardous Substances","Australia High Volume Industrial Chemical List (HVICL)","Australia Illicit Drug Reagents/Essential Chemicals - Category III","Australia Inventory of Chemical Substances (AICS)","Australia National Pollutant Inventory","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6","IMO IBC Code Chapter 17:

continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
(Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96
Version No:4
Page 20 of 21

Section 15 - REGULATORY INFORMATION

Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "IMO Provisional Categorization of Liquid Substances - List 3: (Trade-named) mixtures containing at least 99% by weight of components already assessed by IMO, presenting safety hazards", "International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs", "International Fragrance Association (IFRA) Standards Prohibited", "WHO Guidelines for Drinking-water Quality - Guideline values for chemicals that are of health significance in drinking-water"

No data for Hurst 150 Film and Scanner Drum Cleaner (CW: 4709-96)

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
heptane	142-82-5, 31394-54-4

REPRODUCTIVE HEALTH GUIDELINES

■ Established occupational exposure limits frequently do not take into consideration reproductive end points that are clearly below the thresholds for other toxic effects. Occupational reproductive guidelines (ORGs) have been suggested as an additional standard. These have been established after a literature search for reproductive no-observed-adverse effect-level (NOAEL) and the lowest-observed-adverse-effect-level (LOAEL). In addition the US EPA's procedures for risk assessment for hazard identification and dose-response assessment as applied by NIOSH were used in the creation of such limits. Uncertainty factors (UFs) have also been incorporated.

Ingredient	ORG	UF	Endpoint	CR	Adeq	TLV
toluene	9.6 mg/m ³	10	D	NA	-	

■ These exposure guidelines have been derived from a screening level of risk assessment and should not be construed as unequivocally safe limits. ORGS represent an 8-hour time-weighted average unless specified otherwise.

CR = Cancer Risk/10000; UF = Uncertainty factor:

TLV believed to be adequate to protect reproductive health:

LOD: Limit of detection

Toxic endpoints have also been identified as:

D = Developmental; R = Reproductive; TC = Transplacental carcinogen
Jankovic J., Drake F.: A Screening Method for Occupational Reproductive
American Industrial Hygiene Association Journal 57: 641-649 (1996).

■ 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/references.

■ 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.

This document is copyright. Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written

continued...

HURST 150 FILM SCANNER DRUM CLEANER[HURST 150 FILM AND SCANNER DRUM CLEANER]
(Chemwatch name: Hurst 150 Film and Scanner Drum Cleaner)

Hazard Alert Code: HIGH

Chemwatch Material Safety Data Sheet
Issue Date: 20-Feb-2010
A317LP

CHEMWATCH 4709-96
Version No:4
Page 21 of 21
Section 16 - OTHER INFORMATION

permission from CHEMWATCH. TEL (+61 3) 9572 4700.

Issue Date: 20-Feb-2010
Print Date: 8-Feb-2012

This is the end of the MSDS.