

# Hurst DC410 Vegetal

Chemwatch Material Safety Data Sheet  
Issue Date: 21-Jan-2011  
A317LP

Hazard Alert Code: HIGH

CHEMWATCH 6557-30  
Version No:3  
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## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NAME

Hurst DC410 Vegetal

### PROPER SHIPPING NAME

FLAMMABLE LIQUID, N.O.S.(contains solvent naphtha)

### PRODUCT USE

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

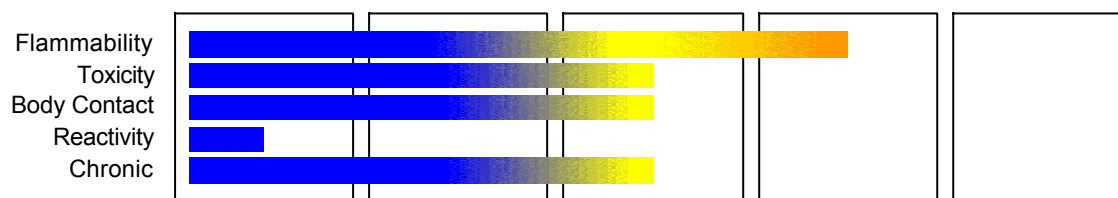
Email: info@hurst.com.au

## 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



RISK

SAFETY

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## Section 2 - HAZARDS IDENTIFICATION

- Highly flammable.
  - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
  - HARMFUL- May cause lung damage if swallowed.
  - Repeated exposure may cause skin dryness and cracking.
  - Vapours may cause drowsiness and dizziness.
  - Inhalation and/or skin contact may produce health damage\*.
  - Ingestion may produce serious health damage\*.
  - Cumulative effects may result following exposure\*.
  - May produce discomfort of the eyes, respiratory tract and skin\*.
  - May be harmful to the foetus/ embryo\*.
- \* (limited evidence).
- 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.
  - Take off immediately all contaminated clothing.
  - 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	%
naphtha petroleum, heavy, hydrodesulfurised	64742-82-1.	>80
naphtha petroleum, light aromatic solvent	64742-95-6.	<15
emulsifying agents		NotSpec
oxidation inhibitors		NotSpec
vegetable oil derivatives		NotSpec

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## Section 4 - FIRST AID MEASURES

### SWALLOWED

- For advice, contact a Poisons Information Centre or a doctor.
- If swallowed do NOT induce vomiting.
- 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.

### EYE

- If this product comes in contact with the eyes:
  - Immediately hold eyelids apart and flush the eye continuously with 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.
  - Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
  - Transport to hospital or doctor without delay.
  - 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

- 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 (pO<sub>2</sub> 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 preferred agents, with aminophylline a second choice.

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Section 4 - FIRST AID MEASURES

- 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

- Alcohol stable foam.
- Dry chemical powder.
- Carbon dioxide.
- Water spray or fog - Large fires only.

### 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 forms an explosive mixture with air.
  - Severe explosion hazard, in the form of vapour, when exposed to flame or spark.
  - Vapour may travel a considerable distance to source of ignition.
  - Heating may cause expansion / decomposition with violent rupture of containers.
  - On combustion, may emit toxic fumes of carbon monoxide (CO).
- May emit clouds of acrid smoke.

### FIRE INCOMPATIBILITY

- Avoid contamination with strong oxidising agents 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.

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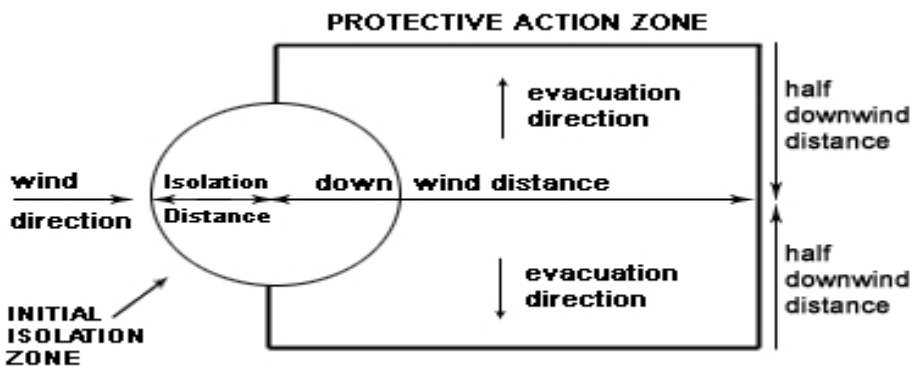
## Section 6 - ACCIDENTAL RELEASE MEASURES

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

### MAJOR SPILLS

- 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

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## 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

- 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.
- DO NOT allow clothing wet with material to stay in contact with skin.

### SUITABLE CONTAINER

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

### STORAGE INCOMPATIBILITY

- Avoid storage with oxidisers, strong alkalis, strong acids and amines.

### 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.

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## Section 7 - HANDLING AND STORAGE

- 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 <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>	TWA F/CC	Notes
Australia Exposure Standards	naphtha petroleum, heavy, hydrodesulfurised (White spirits)		790						(see Chapter 16)
Australia Exposure Standards	naphtha petroleum, heavy, hydrodesulfurised (Petrol (gasoline))		900						(see Chapter 16)

### EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m <sup>3</sup> )	Revised IDLH Value (ppm)
naphtha petroleum, heavy, hydrodesulfurised	36091	20,000
naphtha petroleum, heavy, hydrodesulfurised	16	1,000 [LEL]
naphtha petroleum, heavy, hydrodesulfurised	0	1,100 [LEL]

### NOTES

Values marked LEL indicate that the IDLH was based on 10% of the lower explosive limit for safety considerations even though the relevant toxicological data indicated that irreversible health effects or impairment of escape existed only at higher concentrations.

### ODOUR SAFETY FACTOR (OSF)

OSF=0.042 (naphtha petroleum, heavy, hydrodesulfurised)

- Exposed individuals are NOT reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odour Safety Factor (OSF) is determined to fall into either Class C, D or E.

The Odour Safety Factor (OSF) is defined as:

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

OSF= Exposure Standard (TWA) ppm/ Odour Threshold Value (OTV) ppm

Classification into classes follows:

Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV- TWA for example) is being reached, even when distracted by working activities
B	26- 550	As " A" for 50- 90% of persons being distracted
C	1- 26	As " A" for less than 50% of persons being distracted
D	0.18- 1	10- 50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As " D" for less than 10% of persons aware of being tested

### MATERIAL DATA

NAPHTHA PETROLEUM, HEAVY, HYDRODESULFURISED:

NAPHTHA PETROLEUM, LIGHT AROMATIC SOLVENT:

■ Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

OSHA (USA) concluded that exposure to sensory irritants can:

- cause inflammation
- cause increased susceptibility to other irritants and infectious agents
- lead to permanent injury or dysfunction
- permit greater absorption of hazardous substances and
- acclimate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

NAPHTHA PETROLEUM, HEAVY, HYDRODESULFURISED:

NAPHTHA PETROLEUM, LIGHT AROMATIC SOLVENT:

- Odour threshold: 0.25 ppm.

The TLV-TWA is protective against ocular and upper respiratory tract irritation and is recommended for bulk handling of gasoline based on calculations of hydrocarbon content of gasoline vapour. A STEL is recommended to prevent mucous membrane and ocular irritation and prevention of acute depression of the central nervous system. Because of the wide variation in molecular weights of its components, the conversion of ppm to mg/m<sup>3</sup> is approximate. Sweden recommends hexane type limits of 100 ppm and heptane and octane type limits of 300 ppm. Germany does not assign a value because of the widely differing compositions and resultant differences in toxic properties.

Odour Safety Factor (OSF)

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

OSF=0.042 (gasoline).

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OEL TWA: 250 ppm

NAPHTHA PETROLEUM, HEAVY, HYDRODESULFURISED:

■ For white spirit:

Low and high odour thresholds of 5.25 and 157.5 mg/m<sup>3</sup>, respectively, were considered to provide a rather useful index of odour as a warning property.

The TLV-TWA is calculated from data on the toxicities of the major ingredients and is intended to minimise the potential for irritative and narcotic effects, polyneuropathy and kidney damage produced by vapours.

The NIOSH (USA) REL-TWA of 60 ppm is the same for all refined petroleum solvents. NIOSH published an occupational "action level" of 350 mg/m<sup>3</sup> for exposure to Stoddard solvent, assuming a 10-hour work shift and a 40-hour work-week. The NIOSH-REL ceiling of 1800 mg/m<sup>3</sup> was established to protect workers from short-term effects that might produce vertigo or other adverse effects which might increase the risk of occupational accidents. Combined (gross) percutaneous absorption and inhalation exposure (at concentrations associated with nausea) are thought, by some, to be responsible for the development of frank hepatic toxicity and jaundice.

Odour Safety Factor (OSF)

OSF=0.042 (white spirit).

ES TWA: 790 mg/m<sup>3</sup> (as white spirit)

TLV TWA: 100 ppm, 525 mg/m<sup>3</sup> (as Stoddard Solvent)

NAPHTHA PETROLEUM, LIGHT AROMATIC SOLVENT:

REL TWA: 25-100 ppm\*, 125 mg/m<sup>3</sup>\*

[Various Manufacturers]

CEL TWA: 50 ppm, 125 mg/m<sup>3</sup>

## PERSONAL PROTECTION



## EYE

- Safety glasses.
- 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].

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### HANDS/FEET

- Wear chemical protective gloves, eg. PVC.
- Wear safety footwear.
- DO NOT use this product to clean the skin.

### OTHER

- Overalls.
- Eyewash unit.
- Ensure there is ready access to an emergency shower.

### RESPIRATOR

- Type A Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)
- Respiratory protection may be required when ANY "Worst Case" vapour-phase concentration is exceeded (see Computer Prediction in "Exposure Standards").

Required Minimum Protection Factor	Half- Face Respirator	Full- Face Respirator
up to 10 xES	A- - AUS / Class 1 A- - PAPR- AUS / Class 1	-
up to 50 xES	Air- line*	-
up to 100 xES	-	A- - 3
100+ xES	-	Air- line**

\* - Continuous-flow;      \*\* - Continuous-flow or positive pressure demand

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC).

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

- Use in a well-ventilated area.
- Spraying to be carried out in conditions conforming to local state regulations Unprotected personnel must vacate the spraying area.
- DO NOT spray directly on humans, exposed food or food utensils.
- 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.

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in special circumstances. If risk of overexposure exists, wear approved respirator. Supplied-air type respirator

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

may be required in special circumstances. Correct fit is essential to ensure adequate protection. Provide adequate ventilation in warehouses and enclosed storage areas.

In confined spaces where there is inadequate ventilation, wear full-face air supplied breathing apparatus.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### APPEARANCE

Clear colourless flammable liquid with a specific odour; forms an emulsion with water.

### PHYSICAL PROPERTIES

Liquid.

Does not mix with water.

Floats on water.

State	Liquid	Molecular Weight	Not Applicable
Melting Range (°C)	<- 20	Viscosity	Not Available
Boiling Range (°C)	140- 215	Solubility in water (g/L)	Immiscible
Flash Point (°C)	<40 (PMCC)	pH (1% solution)	Not Applicable
Decomposition Temp (°C)	Not Available	pH (as supplied)	Not Applicable
Autoignition Temp (°C)	Not Available	Vapour Pressure (kPa)	0.35
Upper Explosive Limit (%)	6.5	Specific Gravity (water=1)	0.793
Lower Explosive Limit (%)	0.7	Relative Vapour Density (air=1)	Not Available
Volatile Component (%vol)	Not Available	Evaporation Rate	Not Available

## 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

■ Not a likely route of entry into the body in commercial or industrial environments. The liquid may produce considerable gastrointestinal discomfort and be harmful or toxic if swallowed. Ingestion may cause nausea, pain and vomiting. Vomit entering the lungs by aspiration can cause inflammation of the lungs, which can lead to death.

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Section 11 - TOXICOLOGICAL INFORMATION

## EYE

■ The liquid is highly discomforting to the eyes and is capable of causing a mild, temporary redness of the conjunctiva (similar to wind-burn), temporary impairment of vision and/ or other transient eye damage/ ulceration.

The vapour is discomforting to the eyes.

## SKIN

■ The material may be mildly discomforting to the skin and is capable of causing skin reactions which may lead to dermatitis from repeated exposures over long periods.

Toxic effects may result from skin absorption.

Open cuts, abraded or irritated skin should not be exposed to this material. The material may accentuate any pre-existing skin condition.

## INHALED

■ The vapour is discomforting to the upper respiratory tract and may be harmful if inhaled.

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.

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

## CHRONIC HEALTH EFFECTS

■ Principal routes of exposure are usually by inhalation of vapour and skin contact/absorption.

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

Prolonged or continuous skin contact with the liquid may cause defatting with drying, cracking, irritation and dermatitis following.

As with any chemical product, contact with unprotected bare skin; inhalation of vapour, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.

## TOXICITY AND IRRITATION

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

■ for petroleum:

This product contains benzene which is known to cause acute myeloid leukaemia and n-hexane which has been shown to metabolize to compounds which are neuropathic.

This product contains toluene. There are indications from animal studies that prolonged exposure to high concentrations of toluene may lead to hearing loss.

This product contains ethyl benzene and naphthalene from which there is evidence of tumours in rodents

Carcinogenicity: Inhalation exposure to mice causes liver tumours, which are not considered relevant to humans. Inhalation exposure to rats causes kidney tumours which are not considered relevant to humans.

Mutagenicity: There is a large database of mutagenicity studies on gasoline and gasoline blending streams, which use a wide variety of endpoints and give predominantly negative results. All in vivo studies in animals and recent studies in exposed humans (e.g. petrol service station attendants) have shown negative results in mutagenicity assays.

Reproductive Toxicity: Repeated exposure of pregnant rats to high concentrations of toluene (around or exceeding 1000 ppm) can cause developmental effects, such as lower birth weight and developmental neurotoxicity, on the foetus. However, in a two-generation reproductive study in rats exposed to gasoline vapour condensate, no adverse effects on the foetus were observed.

Human Effects: Prolonged/ repeated contact may cause defatting of the skin which can lead to dermatitis and may make the skin more susceptible to irritation and penetration by other materials.

Lifetime exposure of rodents to gasoline produces carcinogenicity although the relevance to humans has been

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## Section 11 - TOXICOLOGICAL INFORMATION

questioned. Gasoline induces kidney cancer in male rats as a consequence of accumulation of the alpha2-microglobulin protein in hyaline droplets in the male (but not female) rat kidney. Such abnormal accumulation represents lysosomal overload and leads to chronic renal tubular cell degeneration, accumulation of cell debris, mineralisation of renal medullary tubules and necrosis. A sustained regenerative proliferation occurs in epithelial cells with subsequent neoplastic transformation with continued exposure. The alpha2-microglobulin is produced under the influence of hormonal controls in male rats but not in females and, more importantly, not in humans.

### HURST DC410 VEGETAL:

- Not available. Refer to individual constituents.

### NAPHTHA PETROLEUM, HEAVY, HYDRODESULFURISED:

- No data of toxicological significance identified in literature search.

### NAPHTHA PETROLEUM, LIGHT AROMATIC SOLVENT:

#### TOXICITY

Oral (rat) LD50: >5000 mg/kg \*

Inhalation (rat) LC50: >3670 ppm/8 h \*

Inhalation (rat) TCLo: 1320 ppm/6h/90D-I

\* [Devoe]

#### IRRITATION

Nil Reported

## Section 12 - ECOLOGICAL INFORMATION

### NAPHTHA PETROLEUM, LIGHT AROMATIC SOLVENT:

### NAPHTHA PETROLEUM, HEAVY, HYDRODESULFURISED:

- DO NOT discharge into sewer or waterways.
- 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.
- Toxic to aquatic organisms.

### NAPHTHA PETROLEUM, HEAVY, HYDRODESULFURISED:

- For Hydrocarbons: log Kow 1. BCF~10.

For Aromatics: log Kow 2-3.

BCF 20-200. For C5 and greater alkanes: log Kow 3-4.5. BCF 100-1,500.

For Alkanes, Benzene, Toluene, Ethylbenzene, Xylene (BTEX):

Environmental Fate: Microbes found in many natural settings (e.g., soils, groundwater, ponds) have been shown to be capable of degrading organic compounds. Some hydrocarbons will become associated with marine sediments likely to be spread over a fairly wide area of sea floor. Under aerobic conditions, hydrocarbons degrade to water and carbon dioxide, while under anaerobic processes, they produce water, methane and carbon dioxide. Anaerobic degradation is slower than aerobic. Biodegradation can eliminate the contaminants without dispersing them throughout the environment. The rate of hydrocarbon degradation depends on the chemical composition of the product released to the environment as well as site-specific environmental factors.

Hydrocarbons with condensed ring structures, such as PAHs (polycyclic aromatic hydrocarbons) with four or more rings, have been shown to be relatively resistant to biodegradation. PAHs with only 2 or 3 rings (e.g., naphthalene, anthracene) are more easily biodegraded. In almost all cases, the presence of oxygen is essential for effective biodegradation. Straight chain hydrocarbons and aromatics degrade more readily than highly branched aliphatic compounds. The n-alkanes, n-alkyl aromatics, and the aromatics in the C10-C22 range are the most readily biodegradable; n-alkanes, n-alkyl aromatics, and aromatics in the C5-C9 range are biodegradable at low concentrations by some microorganisms, but are generally preferentially removed by

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## Section 12 - ECOLOGICAL INFORMATION

volatilization and thus are unavailable in most environments; n-alkanes in the C1-C4 ranges are biodegradable only by a narrow range of specialized hydrocarbon degraders; n-alkanes, n-alkyl aromatics, and aromatics above C22 are generally not available to degrading microorganisms. The ideal pH range to promote biodegradation is close to neutral (6-8). For most species, the optimal pH is slightly alkaline, that is, greater than 7. Generally, as the temperature increases, biological activity tends to increase up to a temperature where enzyme denaturation occurs.

**Atmospheric Fate:** Alkanes, isoalkanes, and cycloalkanes have half-lives on the order of 1-10 days, whereas alkenes, cycloalkenes, and substituted benzenes have half-lives of 1 day or less. Photochemical oxidation products include aldehydes, hydroxy compounds, nitro compounds, and peroxyacyl nitrates. Alkenes, certain substituted aromatics, and naphthalene are potentially susceptible to direct photolysis.

**Aquatic Fate:** Volatilization half-life predicted as 7 days (ponds), 1.5 days (rivers), 6 days (lakes).

Volatilization rate of naphthalene and its substituted derivatives estimated to be slower. The lower molecular weight hydrocarbons are expected to form a "slick" on the surface of waters after release in calm seas which is expected to evaporate and enter the atmosphere where it will be degraded through reaction with hydroxy radicals. **Ecotoxicity:** Effects on freshwater/saltwater organisms: Hydrocarbons are hydrophobic. Such substances produce toxicity in aquatic organisms by a mechanism referred to as "non-polar narcosis" or "baseline" toxicity. Toxic effects are often observed in species such as blue mussel, water fleas, freshwater green algae, marine copepods and amphipods.

**Drinking Water Standards:** hydrocarbon total: 10 ug/l (UK max.).

### NAPHTHA PETROLEUM, LIGHT AROMATIC SOLVENT:

#### ■ For Petroleum Derivatives:

**Environmental Fate:** Chemical analysis for all individual compounds in a petroleum bulk product released to the environment is generally unrealistic due to the complexity of these mixtures and the laboratory expense. This is further complicated by differences in behavior of the substances in water, and biological/non-biological processes.

**Atmospheric Fate:** Petroleum derivatives with high vapor pressures are expected to evaporate and become a vapor. The exact composition of these vapors depends on the composition of the original product. Compounds such as butane, propane, benzene, toluene, ethylbenzene and xylene are preferentially evaporated from gasoline.

**Terrestrial Fate:** Petroleum products migrate through soil as bulk flow or by the separation of individual compounds from the bulk flow. Bulk flow results in rapid soil infiltration. Factors affecting the rate of bulk oil infiltration include soil moisture content, vegetation, terrain, climate, rate of release, soil particle size, (e.g., sand versus clay), and oil viscosity, (e.g., gasoline versus motor oil). These substances can persist in soil for years, which can lead to contamination of groundwater. As the bulk product migrates through the soil column, individual compounds may separate from the mixture and migrate independently. Light-fraction hydrocarbons tend to migrate readily through soil and heavier weight petroleum is generally more persistent in soil. The presence of oil should increase soil temperature, particularly at the surface.

**Aquatic Fate:** Almost all motor and heating oils are less dense than water. Solubility of these substances generally decreases with increasing molecular weight. Many compounds that are insoluble/immobile in water are soluble in bulk oil and will migrate along with the bulk oil flow.

**Biodegradation:** Microbes found in many natural settings have been shown to degrade organic compounds; however, low rates of breakdown are expected and are limited by environmental factors and chemical composition of the product released. The final products of microbial degradation are carbon dioxide, water, and microbial biomass. In almost all cases, the presence of oxygen is essential for effective biodegradation of oil.

Petroleum hydrocarbons in low oxygen environments have extremely low rates of degradation. The ideal pH range to promote biodegradation is close to neutral, (6-8). Soil moisture content will affect biodegradation of oils. Biodegradation rates in soils are also affected by the volume of product released to the environment.

All biological transformations are affected by temperature. Generally, as the temperature increases, biological activity tends to increase up to a temperature where enzyme denaturation occurs. The optimal temperature for biodegradation to occur ranges from 18 C to 30C.

**Ecotoxicity:** Large amounts of petroleum derivatives that enter the environment are expected to cause serious long-term damage. Each oil spill will have a different impact on wildlife and the surrounding environment,

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## Section 12 - ECOLOGICAL INFORMATION

depending on type of substance released, location, species affected, weather, etc. These substances can coat the bodies of wildlife with a thick layer which inhibits their activities. Ingestion of these substances by wildlife will lead to movement up the food chain.

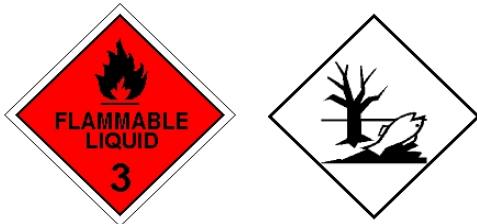
### Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
naphtha petroleum, heavy, hydrodesulfurised	No Data Available	No Data Available		
naphtha petroleum, light aromatic solvent	No Data Available	No Data Available		

## Section 13 - DISPOSAL CONSIDERATIONS

- Consult manufacturer for recycling options and recycle where possible .
- Consult State Land Waste Management Authority for disposal.
- Incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

## Section 14 - TRANSPORTATION INFORMATION



Labels Required: FLAMMABLE LIQUID

### HAZCHEM:

•3YE (ADG7)

### 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 solvent naphtha)

### 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 solvent naphtha)

### 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

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## Section 14 - TRANSPORTATION INFORMATION

Shipping name:FLAMMABLE LIQUID, N.O.S.(contains solvent naphtha)

## Section 15 - REGULATORY INFORMATION

### POISONS SCHEDULE

S5

### REGULATIONS

#### Regulations for ingredients

**naphtha petroleum, heavy, hydrodesulfurised (CAS: 64742-82-1,8052-41-3) is found on the following regulatory lists;**

"Australia Hazardous Substances","Australia Inventory of Chemical Substances (AICS)","International Council of Chemical Associations (ICCA) - High Production Volume List"

**naphtha petroleum, light aromatic solvent (CAS: 64742-95-6) is found on the following regulatory lists;**

"Australia Hazardous Substances","Australia High Volume Industrial Chemical List (HVICL)","Australia Inventory of Chemical Substances (AICS)","International Council of Chemical Associations (ICCA) - High Production Volume List"

**No data for Hurst DC410 Vegetal (CW: 6557-30)**

## Section 16 - OTHER INFORMATION

### INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
naphtha petroleum, heavy, hydrodesulfurised	64742-82-1, 8052-41-3

### 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
naphtha petroleum, light aromatic solvent	12 mg/m <sup>3</sup>	100	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

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American Industrial Hygiene Association Journal 57: 641-649 (1996).

## EXPOSURE STANDARD FOR MIXTURES

- "Worst Case" computer-aided prediction of vapour components/concentrations:
  - Composite Exposure Standard for Mixture (TWA) (mg/m<sup>3</sup>): 354.3839 mg/m<sup>3</sup>
  - If the breathing zone concentration of ANY of the components listed below is exceeded, "Worst Case" considerations deem the individual to be overexposed.
- Component Breathing Zone ppm Breathing Zone mg/m<sup>3</sup> Mixture Conc: (%)

Component	Breathing zone (ppm)	Breathing zone (mg/m <sup>3</sup> )	Mixture Conc (%)
naphtha petroleum, light aromatic solvent	21.33		53.3175
naphtha petroleum, heavy, hydrodesulfurised	15.0	57.35	
301.0664	0.00 0.0	84.7	0.0000

- Operations which produce a spray/mist or fume/dust, introduce particulates to the breathing zone. If the breathing zone concentration of ANY of the components listed below is exceeded, "Worst Case" considerations deem the individual to be overexposed.
- At the "Composite Exposure Standard for Mixture" (TWA) (mg/m<sup>3</sup>): 354.3839 mg/m<sup>3</sup>
- 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](http://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.

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*This is the end of the MSDS.*