1. IDENTIFICATION

Product Name	**Chlorinated Paraffin**
Other Names	ARYAFIN B1/65 HV; Chlorinated paraffins, C14-17; Chloroalkanes C14-17; Chloroparaffin C14-17; Medium-chain chlorinated paraffin (MCCP)
Uses	Use in the production of PVC - plastisol coating. Use in the production of PVC - extrusion/other. Use in the production of plastic/rubber. Formulation of paints and industrial application of paints. Formulation and use in metal cutting/working fluids Formulation and use in leather fat liquors. Recycling of carbonless copy paper.
Chemical Family	No Data Available
Chemical Formula	Unspecified
Chemical Name	Alkanes, C14-C17, chloro-
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Pty Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) No Data Available

Globally Harmonised System

Hazard Classification Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Hazard Categories

Toxic To Reproduction (Effects On or Via Lactation)

Acute Hazard To The Aquatic Environment - Category 1

Long-term Hazard To The Aquatic Environment - Category 1

Pictograms

Signal Word Warning

Hazard Statements	**H362**	May cause harm to breast-fed children.
	H410	Very toxic to aquatic life with long lasting effects.
	AUH066	Repeated exposure may cause skin dryness or cracking

Precautionary Statements	Prevention	**P201**	Obtain special instructions before use.
		P260	Do not breathe fume/gas/mist/vapours/spray.
		P263	Avoid contact during pregnancy/while nursing.
		P264	Wash with soap and water thoroughly after handling.
		P270	Do not eat, drink or smoke when using this product.
		P273	Avoid release to the environment.
	Response	**P308 + P313**	IF exposed or concerned: Get medical advice/ attention.
		P391	Collect spillage.
	Disposal	**P501**	Dispose of contents/container in accordance with local / regional / national / international regulations.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications	Health Hazards	**6.8C**	Substances that produce toxic human reproductive or developmental effects on or via lactation
	Environmental Hazards	**9.1A**	Substances that are very ecotoxic in the aquatic environment

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Alkanes, C14-17, chloro	Unspecified	85535-85-9	<=100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	Rinse mouth with water. Do not induce vomiting. Wash out mouth with water and give 200-300 ml of water to drink. If symptoms develop, seek medical attention.
Eye	Rinse immediately with plenty of luke-warm water also under the eyelids for at least 15 minutes. Seek medical attention .
Skin	Immediately remove contaminated clothing, and any extraneous chemical. Wash off immediately with plenty of soapy water for at least 15 minutes. In case of any skin reaction or soreness seek medical advice.
Inhaled	Immediately remove from exposure into fresh air. Keep warm at rest. Seek medical advice immediately.
Advice to Doctor	Treat symptomatically based on judgement of doctor and individual reactions of patient.
Medical Conditions Aggravated by Exposure	No information available on medical conditions aggravated by exposure to this product.

5. FIRE FIGHTING MEASURES

General Measures	Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk.
Flammability Conditions	Non-flammable. Product is a combustible liquid. May decompose if heated above 200 Deg C with liberation of hydrogen chloride.
Extinguishing Media	CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Hazardous Products of Combustion	Decomposes on heating emitting toxic fumes. If safe to do so, remove containers from path of fire.
Special Fire Fighting Instructions	Do NOT allow fire fighting water to reach waterways, drains or sewers. Store fire fighting water for treatment.
Personal Protective Equipment	Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves) or chemical splash suit.
Flash Point	>210 °C
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Eliminate all sources of ignition. Increase ventilation. Work up wind. Avoid walking through spilled product as it may be slippery. Restrict access to contaminated area until completion of clean up as spillage may be slippery. Stop leak if safe to do so. Use clean, non-sparking tools and equipment. Avoid breathing in vapours.
Clean Up Procedures	Deactivating chemicals not required. Absorb any spillages with sand or earth or similar absorbent material. Collect and seal in properly labelled containers or drums for disposal.
Containment	Stop leak if safe to do so.
Decontamination	Wash area down with high pressure hot water jet.

Environmental Precautionary Measures	Do not allow product to reach drains, sewers or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Authority.
Evacuation Criteria	Evacuate all unnecessary personnel.
Personal Precautionary Measures	Personnel involved in the clean up should wear full protective clothing as listed in section 8.

7. HANDLING AND STORAGE

Handling

Ensure an eye bath and safety shower are available and ready for use.
Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling.
Take precautionary measures against static discharges by bonding and grounding equipment.
Avoid contact with eyes, skin and clothing.
Do not inhale product vapours.
Keep containers closed when not in use.
Keep away from incompatible materials.
People working with this chemical should be properly trained regarding its hazards and safe use.
Keep ignition sources away - Do not smoke.

Storage

Store in a cool, dry, well-ventilated area.
Keep containers tightly closed when not in use.
Inspect regularly for deficiencies such as damage or leaks.
Protect against physical damage.
Store away from incompatible materials as listed in section 10.
Store away from all sources of heat and direct sunlight.
Protect from damage.
Keep dry.
Avoid PVC and rubber gaskets and hoses.
Ideal Storage temperature: 10-27 deg C
Do not expose sealed containers to temperatures more than 40 deg C.
This product has a UN classification of 3082 and a Dangerous Goods Class 9 (Miscellaneous) according to The Australian Code for the Transport of Dangerous Goods By Road and Rail. NOTE: This product is subject to special provision AU01 according to The ADG7. SP No. AU01 Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 are not subject to this Code when transported by road or rail in; (a) packagings that do not incorporate a receptacle exceeding 500 kg(L); or (b) IBCs.

Container

Store in original packaging as approved by manufacturer.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General

DNELs (Derived No Effect Level)
1) DNELs for workers: Long-term - systemic effects:
Dermal: 47.9 mg/kg bw/day
Inhalation: 1.6 mg/m3

2) DNELs for general population: Long-term - systemic effects:
Dermal : 28.75 mg/kg bw/day
Inhalation : 2.0 mg/m3
Oral: 0.58 mg/kg bw/day

PNECs (Predicted No Effect Concentration)
1) PNEC water PNEC aqua (freshwater) :
1 ug/L PNEC aqua (marine water) : 0.2 ug/L

2) PNEC sediment
PNEC sediment (freshwater) : 13 mg/kg sediment dw
PNEC sediment (marine water) : 2.6 mg/kg sediment dw

3) PNEC sewage treatment plant
PNEC STP: 80 mg/L

4) PNEC soil
PNEC soil: 11.9 mg/kg soil dw

5) PNEC oral: 10 mg/kg food

Exposure Limits

No Data Available

Biological Limits	No information available on biological limit values for this product.
Engineering Measures	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Protection Equipment	RESPIRATOR: Half-face respirator equipped with a combination filter and cartridge for acid gas and a high efficiency filter. (AS1715/1716). EYES: Safety glasses with side shields. Face shield and chemical goggles should be worn where mist or spray may be generated or where the product is heated. (AS1336/1337). HANDS: Wear protecitve gloves. The following glove materials are recommended for use with this product: Nitrile: 0.36 mm Viton: 0.30 mm Neoprene: 0.56 mm. (AS2161). CLOTHING: Long-sleeved protective clothing and safety footwear (AS3765/2210).
Work Hygienic Practices	Keep away from foodstuffs, beverages and feed. Always provide readily accessible eye wash stations and safety showers. Wash at the end of each work shift and before eating, smoking or using the toilet.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Viscous Liquid.
Odour	Almost odourless, slightly characteristic odour
Colour	Clear, nearly colourless to light yellow.
pH	No Data Available
Vapour Pressure	0.00027 Pa Pa (@ 20 °C)
Relative Vapour Density	No Data Available
Boiling Point	>200 - decomposes below boiling point °C
Melting Point	-50 - 0 °C
Freezing Point	No Data Available
Solubility	0.027 mg/L 20°C
Specific Gravity	No Data Available
Flash Point	>210 °C
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	>200 °C
Density	1.095 g/cm3 (41% chlorination) Relative
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	at 20 deg C: 7 log POW (HPLC)
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	90-12.000 mm2/s (@ 20 °C)
Volatile Percent	No Data Available
VOC Volume	No Data Available

Additional Characteristics	Self-igniting: In accordance with column 2 of REACH Annex VII, the study does not need to be conducted for liquids non flammable in air (e.g. no flash point up to 200 deg C). According to the final RAR (EU, 2005),MCCPs have a flash point greater then 210 deg C and "[d] ecomposition starts to occur above 200 deg C with liberation of hydrogen chloride". Danger of explosion: In accordance with column 2 of REACH Annex VII, the study does not need to be conducted if there are no chemical groups associated with explosive properties present in the molecule. According to the final RAR (EU, 2005), "[o] n the basis of chemical structure the substance is not explosive". 1) Oxidising properties: In accordance with column 2 of REACH Annex VII, the study does not need to be conducted if the substance is incapable of reacting exothermically with combustible materials, for example on the basis of the chemical structure (e. g. organic substances not containing oxygen or halogen atoms and these elements are not chemically bonded to nitrogen or oxygen). According to the final RAR (EU, 2005), "[o] n the basis of chemical structure the substance has no oxidising properties". 2) Surface tension: In accordance with column 2 of REACH Annex VII, the study does not need to be conducted as the water solubility of MCCPs is below 1 mg/L at 20 deg C. 3) Granulometry; In accordance with column 2 of REACH Annex VII, the study does not need to be conducted as the substance is marketed and used as a liquid. 4) Stability in organic solvents and identity of relevant degradation products: In accordance with column 1 of REACH Annex IX, the study is not required as the stability of the substance is not considered to be critical. 5) Dissociation constant: In accordance with section 2 of REACH Annex XI, the study does not need to be conducted as the substance cannot dissociate in water. I t is an organochlorine compound containing only strong covalent C-H and C-Cl bonds. 6)Melting Point : The pour point of C14 -17 chlorinated paraffins (degree of chlorination not stated) has been reported to vary from -50 deg C to 0 deg C. A high- chlorine content material (62-63% chlorination) has a pour point of approximately +25 deg C.
Potential for Dust Explosion	Product is a liquid.
Fast or Intensely Burning Characteristics	No Data Available
Flame Propagation or Burning Rate of Solid Materials	No Data Available
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No Data Available
Properties That May Initiate or Contribute to Fire Intensity	No Data Available
Reactions That Release Gases or Vapours	No Data Available
Release of Invisible Flammable Vapours and Gases	No Data Available

10. STABILITY AND REACTIVITY

General Information	Non-flammable. Product is a combustible liquid. Reactivity: Can react with alkali materials and alkaline earth metals which have a strong affinity for chlorine. Can react with iron, zinc, aluminium at high temperatures leading to decomposition.
Chemical Stability	The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Conditions to Avoid	Strong oxidising agents, heat and hot surfaces. Mid Chain Chlorinated Paraffins tend to soften or swell most rubbers. Do not expose sealed containers to temperatures more than 40 deg C
Materials to Avoid	Strong oxidizing and reducing agents. Strong alkalines. Alkali metals and alkaline earth metals (those with a strong affinity for chlorine). Iron, aluminium and zinc at high temperatures (which will catalyze decomposition).
Hazardous Decomposition Products	Hydrogen chloride (HCl). Chlorine compounds

Hazardous Polymerisation No Data Available

11. TOXICOLOGICAL INFORMATION

General Information

LD/LC50 values relevant for classification:
Oral LD50 > 10 mL/kg bw (rat (Wistar)). > 4000 mg/kg bw (rat(Wistar)male/female)
Inhalative LC50 (1 h) > 48170 mg/m3 (rat)

85535-84-8 alkanes, C10-13, chloro: Dermal LD50
> 10 mL/kg bw (rabbit) (Coverage: occlusive)
> 13.5 g/kg bw (rabbit) (Coverage: occlusive)
> 2.5 mL/kg bw (rat) (Coverage: occlusive)

Skin Irritation
1) Method: OECD Guideline 404(Acute Dermal Irritation /Corrosion) Species: rabbit
Results: Erythema score:
1.5 of max. 4 (mean) (Time point: 24-72 h) (C14-17 chlorinated paraffin (40% chlorinated)) Edema score:
0.6 of max. 4 (mean) (Time point: 24-72 h) (C14-17 chlorinated paraffin (40% chlorinated))
Inference: The substance alkanes, C14-17, chloro was found to be slightly irritating to the rabbit skin.

2) Method: OECD Guideline 404(Acute Dermal Irritation /Corrosion) Species: Rabbit
Coverage: occlusive (shaved) Results:
Erythema score: 1.3 of max. 4 (mean) (Time point: 24-72 h) (C14-17 chlorinated paraffin (52% chlorinated)) Edema score:0.3 of max. 4 (mean) (Time point: 24-72 h) (C14-17 chlorinated paraffin (52% chlorinated)) Inference: The substance alkanes, C14-17, chloro was found to be slightly irritating to the rabbit skin.

3) Method : Skin irritation potential of a C14-17 chlorinated paraffin (45% chlorinated) assessed in rats following single or repeated application under occlusive conditions (ICI Standard Operating Procedure CT20-098/03)
Species/strain: rat (Alderley Park albino (Wister-derived)) Coverage: occlusive
Results: slightly irritating

Eye irritation
Method: Rabbits were given a single application of a C14-17 chlorinated paraffin (chlorinated to either 40 or 45%) into the conjunctival sac of one eye and observed for up to 7 days. Species: Rabbit (New Zealand White)
Results: Maximum mean total score (MMTS): 3.3 of max. 110 (mean) (Time point: 1-2 hr) (Meflex DC024/Meflex DC029) Cornea score: 0 of max. 80 (mean) (Time point: 7 days) (Meflex DC024/Meflex DC029)
Iris score: 0 of max. 80 (mean) (Time point: 7 days) (Meflex DC024/Meflex DC029)
Conjunctivae score: 3.3 of max. 20 (mean) (Time point: 1-2 hr) (Meflex DC024/Meflex DC029)
Result: slightly irritating
Inference: The substance alkanes, C14-17, chloro was found to be slightly irritating to the eyes of rabbit.

Skin sensitization:
Method : Guinea pig maximisation test
Species : guinea pig
Induction: intradermal and topical Challenge: presumably topical Results: No. with positive reactions:
1st reading: 1 out of 20 (test group);48 h after chall.; dose: undiluted 9 C14-17 chlorinated paraffin (40%chlorination)
1st reading: 1 out of 10 (negative control); 48 h after chall.; dose:undiluted
Inference: No adverse effect observed (not sensitising)

Additional toxicological information: Material may accumulate in body tissues and fluids rich in lipid content hence may cause harm to breastfed babies.

Toxicokinetics (absorption, metabolism, distribution and elimination)
Method: OECD Guideline 417 (Toxicokinetics) Species: rat (Fischer 344) male Route : oral: gavage
Exposure regime: Single dose on Day 1;groups of 3 animals killed on days 2, 5, 12,26, 54 and 89 Doses/conc.: 525 mg/kg bw
Results: Main ADME results:
Absorption: Only about 30% of the orally administered dose of a C14 -17 chlorinated paraffin (52% chlorination) was absorbed by day 4 from the GI tract.
Distribution: Twenty-four hours after dosing, the liver, kidney, fat and skin/fur contained the highest concentrations of radioactivity.
Excretion: Approximately 50% of the administered dose was eliminated in the faeces in the first 24 hours. At day 4, about 71% of the administered dose was excreted via the faeces and 6% in the urine.
Metabolites identified: no
Evaluation of results: The test substance Alkanes,C14-17, chloro have low bioaccumulation potential based on study results.

Repeated dose toxicity: oral
1) Method: OECD Guideline 408 (Repeated Dose 90- Day Oral Toxicity in Rodents) Species: rat (Fischer 344) male/female

subchronic (oral: feed) Doses:
0, 30, 100, 300 and 3000 ppm (nominal in diet)
0, 2.4, 9.3, 23, 222 mg/kg bw/day(actual ingested)
Exposure: 13 weeks (continuous)
Results: NOAEL: 300 ppm (male/female)
Effects: Significant effects on organ weights, clinical chemistry and liver histopathology at top dose only; C14- 17 chlorinatedparaffin (52% chlorinated))

2) Method: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) Species: Rat (Fischer 344) male/female subchronic (oral: feed)
Doses: 0, 10, 100 and 625 mg/kg bw/day (intended daily intake)
Exposure: 13 weeks (continuous)
Results: NOAEL: 100 mg/kg bw/day (nominal) (male/female)
(C14-17 chlorinated paraffin (52% chlorination) at 625 mg/kg bw/day (highest tested dose), caused effects on urinalysis, blood biochemistry, kidney, liver,adrenal and thyroid weights,and mild hepatocellular and mild to moderate thyroid hypertrophy, mild hyperplasia and chronic nephritis, and renal tubular pigment in females only.)

Repeated dose toxicity: dermal; In accordance with column 2 of REACH Annex VIII and IX, repeated dose toxicity testing by the dermal route is not considered appropriate as the physicochemical and toxicological properties of MCCPs do not suggest potential for a significant rate of absorption through the skin (a worst case of 1% absorption though human skin has been determined).

CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
Mutagenicity:
I) In vitro study:
1) Method: OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Type of study: Bacterial reverse mutation assay (e.g. Ames test) (gene mutation)
Species/strain:
S. typhimurium TA 1535, TA 1537, TA 98 and TA 100 (met.act.: with and without)
S. typhimurium TA 1538 (met.act.: with and without)
Doses: 1, 10, 100, 1000 and 5000 ug/plate.
Test results:
Negative for S. typhimurium TA 1535, TA 1537, TA 98 and TA 100(all strains/cell typestested); met. act.: with and without; cytotoxicity: no, but tested up to precipitating concentrations negative.
For S. typhimurium TA 1538 (strain/cell type: S.typhimurium TA 1538); met.act.: with and without; cytotoxicity: no, but tested upto precipitating concentrations.
Evaluation of results: Negative (C14-17 chlorinated paraffin; 42% chlorination)

2) Type of study: Bacterial reverse mutation assay (e.g. Ames test) (gene mutation)
Species/strain:
S. typhimurium TA 1535, TA 1537, TA 98 and TA 100 (met.act.: with and without)
S. typhimurium TA 1538 (met.act.: with and without)
Doses: 1.6, 8, 40, 200, 1000 and 5000 ug/plate
Test results:
Negative for S. typhimurium TA 1535, TA 1537, TA 98 and TA 100(all strains/cell typestested); met. act.: with and without
Negative for S. typhimurium TA 1538(strain/cell type:);met. act.: with and without
Evaluation of results: Negative (C14-17 chlorinated paraffin; 45% chlorination)

II) In vivo study
Method: OECD Guideline 475 (Mammalian Bone Marrow Chromosome Aberration Test) Type of study: Chromosome aberration assay (chromosome aberration)
Species/strain: Rat (Fischer 344) male
Route: oral: gavage
Doses: 500, 1500 and 5000 mg/kg bw/day (analytical conc. (472, 1560 and 4900 mg/kg bw/day))
Test results: Genotoxicity: Negative (male); toxicity: No effects
Evaluation of results: Negative (C14-17 chlorinated paraffin (52% chlorinated))
Interpretation of results: Based on the study it is indicated that C14-17 chlorinated paraffins would not be classified as mutagenic.

Carcinogenicity: oral
Method: OECD Guideline 451 (Carcinogenicity Studies)
Test material (Common name): short-chain chlorinated paraffins, (CASnumber): 108171-26-2 (Read Across)
Species/Strain: Rat (F344/N) male/female Route: oral: gavage
Doses: 0, 312, or 625 mg/kg bw/day (actual ingested) Exposure: 104 weeks (5 days per week)
Results: LOAEL (carcinogenicity): 312 mg/kg bw/day (actualdose received) (male/female)
(Hepatocellular neoplastic nodules and carcinomas (in both sexes), thyroid follicular cell adenomas/carcinomas (in females), kidney tubular cell adenomas/carcinomas (in males), and mononuclear cell leukemia in males; C12 chlorinated paraffin (60% chlorinated))
Neoplastic effects: yes
Inference: C14 -17 chlorinated paraffins would not be classified for human carcinogenicity based on the information described above.

Toxicity to Reproduction: Effects on fertility:
Method: OECD Guideline 421 (Reproduction/ Developmental Toxicity Screening Test) Species/strain: Rat (Crj: CD

(SD)) male/female one-generation study Route : oral: feed Doses:
0, 21, 44 and 84 mg/kg bw/day (actual ingested (Males - prepairing))
0, 23, 47 and 99 mg/kg bw/day (actual ingested (Females prepairing))
0, 25, 49 and 104 mg/kg bw/day (actual ingested (Females - gestation))
0, 64, 121 and 212 mg/kg bw/day (actual ingested (Females - during lactation))
Exposure: Males - 9 weeks; females approx 11-12 weeks (PND 21) (Continuous in diet) Results:
NOAEL (P): ca. 100 mg/kg bw/day (male/female) (No effects on fertility; C14-17 chlorinated paraffin (52% chlorinated))
NOAEL (F1): ca. 100 mg/kg bw/day (male/female) (No effects on survival and growth of offspring up to weaning; C14-17 chlorinated paraffin (52% chlorinated))

Developmental toxicity:
Method: OECD Guideline 414 (Prenatal Developmental Toxicity Study) Species/strain: Rat (Charles River CD)
Route: Oral: gavage
Doses: 0, 500, 2000 and 5000 mg/kg bw/day (nominal conc.) Exposure: from gestational days 6 to 19 (daily)
Results:
NOAEL (maternal toxicity):500 mg/kg bw/day (Wet and/or matted fur in the anogenital region (with red or yellow staining) and an increased incidence of soft stool prior to sacrifice at 2000 and 5000 mg/kg bw/day; C14- 17 chlorinated paraffin (52% chlorinated))
NOAEL (developmental toxicity): 5000 mg/kg bw/day (Highest tested dose; C14-17 chlorinated paraffin (52% chlorinated))
NOAEL (teratogenicity):5000 mg/kg bw/day (Highest tested dose;C14-17 chlorinated paraffin (52% chlorinated))
Lact.

SkinIrritant Repeated exposure may cause skin dryness and cracking.

Ingestion May cause harm to breastfed babies.

Carcinogen Category No Data Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

EC50 (48 h) (static) 0.0077 mg/L (Daphnia Magna (Water Flea)) (OECD Guideline 202)
EC50 (72 h) (static) > 3.2 mg/L (Selenastrum capricornutum (Algae)) (OECD Guideline 201)
EC50 (96 h) (static) > 3.2 mg/L (Selenastrum capricornutum (Algae)) (OECD Guideline 201)
LC50 (96 h) (static) > 5000 mg/L (Alburnus alburnus) (OECD Guideline 203 (Fish, Acute Toxicity)
LC50 (96hr) (static) > 10000 mg/L (Alburnus alburnus (estuary)) (OECD Guideline 203 (Fish, Acute Toxicity Test))
NOEC (60 d) 5.6 mg/L (Salmo gairdneri (Oncorhynchus mykiss)) (OECD Guideline 204)

Persistence/Degradability

Biodegradation in water:
1) Method: a) OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
b)ISO DIS9408 (Ultimate Aerobic Biodegradability - Method by Determining the Oxygen Demand in a Closed Respirometer)
c)EU Method C.4-E (Determination of the "Ready"Biodegradability - Closed Bottle Test) Test type: ready biodegradability
Species: secondary activated sludge,predominantly domestic wastewater,preconditioned to reduce the endogenous respiration rates.
% Degradation of test substance: ca. 64 after 28 d (O2 consumption) (Readily biodegradable;polychlorinated tetradecane (45% chlorinated))
Results : readily biodegradable, but failing 10-day window

2) Method: OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
EU Method C.4-E (Determination of the "Ready" Biodegradability -Closed Bottle Test)
ISO 10707 Water quality-Evaluation in an aqueous medium of the ultimate aerobic biodegradabilityof organic compounds- Method by analysis of biological oxygen demand (closed bottle test) Test type: ready biodegradability
Species: Secondary activated sludge, obtained from a predominately domestic wastewater sewage treatment plant, preconditioned by aeration to reduce the endogenous respiration rate
% Degradation of test substance:
51 after 28 d (O2 consumption) (Rapidly biodegradable; C14-17 chlorinated paraffin (45.6%chlorination))
63 after 42 d (O2 consumption) (Rapidly biodegradable; C14-17 chlorinated paraffin (45.6% chlorination))
Result: rapidly biodegraded (non-persistent)

3) Method: OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
EU Method C.4-E (Determination of the "Ready" Biodegradability - Closed Bottle Test)
ISO 10707 Water quality- Evaluation in an aqueous medium of the ultimate aerobic biodegradability of organic compounds- Method by analysis of biological oxygen demand (closed bottle test)
Test type: ready biodegradability
Species: Secondary activated sludge, obtained from a predominately domestic wastewater sewage treatment plant, preconditioned by aeration to reduce the endogenous respiration rate
% Degradation of test substance:
5 after 28 d (O2 consumption) (Not readily biodegradable; C14-17 chlorinated paraffin (63.2% chlorination))
10 after 60 d (O2 consumption) (Not readily biodegradable; C14-17 chlorinated paraffin (63.2% chlorination))
Result: Not readily biodegradable

	Biodegradation in water and sediment: Method: The half lives of two C16 chlorinated paraffins (representing the extremes of the typical chlorine contents in commercial production) were determined in sediment (containing oligochaetes) natural water / sediment Results: Half-life (DT50): ca. 12 d in sediment (C16 chlorinated paraffin; 35% Cl) ca. 58 d in sediment (C16 chlorinated paraffin; 69% Cl) Metabolites: not measured Biodegradation in soil: Method: Test type: laboratory. The degradation of a C14.5 and a C15.4 chlorinated paraffin (43.5 and 50% Cl, respectively) was assessed by monitoring the release of the chloride ion using a mixed bacterial inoculum isolated from soil. Results: % Degradation of test substance: ca. 57 after 36 h (chloride released) (1) ca. 51 after 36 h (chloride released) (2) Metabolites: No data
Mobility	Mobility in soil Adsorption/desorption: 1) Method: Calculation of Koc value from QSAR equation Adsorption coefficient: Koc : ca. 588844 (QSAR estimation) 2) Method: OECD Guideline (Bioaccumulation of sediment dwelling benthic oligiochaetes) log Koc: 5.2 at 11.6 Deg C.(C16 chlorinated paraffin (69% chlorination)) Other adsorption coefficients: log Kp (sediment-water): 3.13(C16 chlorinated paraffin (34% chlorination)) log Kp (sediment-water): 3.42 (C16 chlorinated paraffin(69% chlorination))
Environmental Fate	Remark: Very toxic for fish. Also poisonous for fish and plankton in water bodies. Very toxic for aquatic organisms.
Bioaccumulation Potential	Aquatic Bioaccumulation: Details of method: BASIS FOR CALCULATION OF BCF - Estimation software: BCF calculated from ratio of uptake (k1) to depuration rate constant (k2) using graphical and Brixham ACCUM programme methods. Method: OECD Guideline 305 (Bioconcentration: Flow-through Fish Test) Species: Oncorhynchus mykiss Aqueous (freshwater) Flow-through Total uptake duration: 35 d Total depuration duration: 42 d Results: BCF: 1087 L/kg (whole body w.w.) (Time of plateau: 35 d)(kinetic) (steady state probably not reached; n-pentadecane-8-14C-labelled (51% chlorinated)) BCF: 349 L/kg (whole bodyw.w.) (Time of plateau: 35 d)(kinetic) (steady state probably not reached; n-pentadecane-8-14C-labelled (51% chlorinated)) Elimination: yes; DT50: 15 d yes; DT50: 17 d Inference: Based on the available information, there is no indication of a bioaccumulation potential of the substance.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of in accordance with all local, state and federal regulations. All empty packaging should be disposed of in accordance with Local, State, and Federal Regulations or recycled/reconditioned at an approved facility.
Special Precautions for Land Fill	Contact a specialist disposal company or the local waste regulator for advice.

14. TRANSPORT INFORMATION

Land Transport (Australia)
ADG Code

Proper Shipping Name	Kanofin 522
Class	C2 Combustible Liquids - Flash Point >93°C, Closed Cup, Not Excluded Flammable
Subsidiary Risk(s)	No Data Available
EPG	47 Low To Moderate Hazard Substances
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	AU01

Land Transport (New Zealand)
NZS5433

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Alkanes, C14-17, chloro)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
EPG	47 Low To Moderate Hazard Substances
UN Number	3082
Hazchem	•3Z
Pack Group	III
Special Provision	No Data Available

Land Transport (United States of America)
US DOT

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Alkanes, C14-17, chloro)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
ERG	171 Substances (Low to Moderate Hazard)
UN Number	3082
Hazchem	3Z
Pack Group	III
Special Provision	No Data Available

Sea Transport
IMDG Code

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Alkanes, C14-17, chloro)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
UN Number	3082
Hazchem	3Z
Pack Group	III
Special Provision	No Data Available
EMS	FA,SF
Marine Pollutant	No

Air Transport
IATA DGR

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Alkanes, C14-17, chloro)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
UN Number	3082
Hazchem	3Z

Pack Group	III
Special Provision	No Data Available

National Transport Commission (Australia)
Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	No Data Available

Environmental Protection Authority (New Zealand)
Hazardous Substances and New Organisms Amendment Act 2015

Approval Code	HSR002503

National/Regional Inventories

Australia (AICS)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	Not Determined
Europe (REACh)	Not Determined
Japan (ENCS/METI)	Not Determined
Korea (KECI)	Not Determined
Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Not Determined
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSR)	Not Determined
USA (TSCA)	Not Determined

16. OTHER INFORMATION

Related Product Codes	CHPARA5200, CHPARA5201, CHPARA5202, CHPARA5203, CHPARA5220, CHPARA5236, CHPARA5250, CHPARA5300, CHPARA6521, CHPARA6522, CHPARA6523, CHPARA6525, CHPARA6526, CHPARA6531
Revision	1
Revision Date	19 Jun 2014
Key/Legend	**<** Less Than **>** Greater Than **AICS** Australian Inventory of Chemical Substances **atm** Atmosphere **CAS** Chemical Abstracts Service (Registry Number) **cm²** Square Centimetres **CO2** Carbon Dioxide **COD** Chemical Oxygen Demand **deg C (°C)** Degrees Celcius **EPA (New Zealand)** Environmental Protection Authority of New Zealand **deg F (°F)** Degrees Farenheit **g** Grams **g/cm³** Grams per Cubic Centimetre **g/l** Grams per Litre **HSNO** Hazardous Substance and New Organism **IDLH** Immediately Dangerous to Life and Health **immiscible** Liquids are insoluable in each other. **inHg** Inch of Mercury **inH2O** Inch of Water **K** Kelvin **kg** Kilogram **kg/m³** Kilograms per Cubic Metre **lb** Pound **LC50** LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours. **LD50** LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals. **ltr** or **L** Litre **m³** Cubic Metre **mbar** Millibar **mg** Milligram **mg/24H** Milligrams per 24 Hours **mg/kg** Milligrams per Kilogram **mg/m³** Milligrams per Cubic Metre **Misc** or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present. **mm** Millimetre **mmH2O** Millimetres of Water **mPa.s** Millipascals per Second **N/A** Not Applicable **NIOSH** National Institute for Occupational Safety and Health **NOHSC** National Occupational Heath and Safety Commission **OECD** Organisation for Economic Co-operation and Development **Oz** Ounce **PEL** Permissible Exposure Limit **Pa** Pascal **ppb** Parts per Billion **ppm** Parts per Million **ppm/2h** Parts per Million per 2 Hours **ppm/6h** Parts per Million per 6 Hours **psi** Pounds per Square Inch **R** Rankine **RCP** Reciprocal Calculation Procedure **STEL** Short Term Exposure Limit **TLV** Threshold Limit Value **tne** Tonne **TWA** Time Weighted Average **ug/24H** Micrograms per 24 Hours **UN** United Nations **wt** Weight