#J02260 JLM DPF Refill Fluid

GCG Turbochargers Australia Pty Ltd

Chemwatch Hazard Alert Code: 3

Chemwatch: **5662-98**
Version No: **2.1**
Safety Data Sheet according to Work Health and Safety Regulations (Hazardous Chemicals) 2023 and ADG requirements

Issue Date: **23/05/2024**
Print Date: **03/06/2024**
S.GHS.AUS.EN.E

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	#J02260 JLM DPF Refill Fluid
Chemical Name	Not Applicable
Synonyms	Not Available
Proper shipping name	CORROSIVE LIQUID, N.O.S. (contains 3,5,5-trimethylhexanoic acid and butylacid phosphate)
Chemical formula	Not Applicable
Other means of identification	Not Available

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

Relevant identified uses	Fuel additive. Use according to manufacturer's directions.

Details of the manufacturer or supplier of the safety data sheet

Registered company name	**GCG Turbochargers Australia Pty Ltd**
Address	117 Eldridge Road Condell Park NSW 2200 Australia
Telephone	+61291333855
Fax	Not Available
Website	www.jlmlubricants.com.au
Email	sales@jlmlubricants.com.au

Emergency telephone number

Association / Organisation	**GCG Turbochargers Australia Pty Ltd**	**CHEMWATCH EMERGENCY RESPONSE (24/7)**
Emergency telephone numbers	+61291333855	+61 1800 951 288
Other emergency telephone numbers	Not Available	+61 3 9573 3188

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 Hazards identification

Classification of the substance or mixture

COMBUSTIBLE LIQUID, regulated for storage purposes only

Poisons Schedule	Not Applicable
Classification [1]	Flammable Liquids Category 4, Corrosive to Metals Category 1, Aspiration Hazard Category 1, Skin Corrosion/Irritation Category 1B, Serious Eye Damage/Eye Irritation Category 1, Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, Germ Cell Mutagenicity Category 1A, Carcinogenicity Category 1A
Legend:	***1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI***

Label elements

Hazard pictogram(s)	
Signal word	**Danger**

Hazard statement(s)

H227	Combustible liquid.
H290	May be corrosive to metals.
H304	May be fatal if swallowed and enters airways.
H314	Causes severe skin burns and eye damage.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H350	May cause cancer.
AUH018	In use, may form flammable/explosive vapour/air mixture.

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Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe mist/vapours/spray.
P264	Wash all exposed external body areas thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P234	Keep only in original packaging.

Precautionary statement(s) Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/ attention.
P370+P378	In case of fire: Use alcohol resistant foam or fine spray/water fog to extinguish.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Precautionary statement(s) Storage

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

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
64742-48-9	25-50	hydrocarbons, C9-11, n-alkanes, isoalkanes, cyclics, <2% aromatics
19583-54-1	25-50	iron 2-ethylhexanoate
Not Available	10-25	hydrocarbons, C10-13- n-alkanes, isoalkanes, cyclics, < 2% aromatics
3302-10-1	5-10	3,5,5-trimethylhexanoic acid
12788-93-1	1-5	butylacid phosphate
108-31-6	<0.01	maleic anhydride
Legend:	***1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available***	

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	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 Contact	If skin or hair contact occurs: ▸ Immediately flush body and clothes with large amounts of water, using safety shower if available. ▸ Quickly remove all contaminated clothing, including footwear. ▸ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. ▸ Transport to hospital, or doctor.
Inhalation	▸ 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. ▸ Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema. ▸ Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs). ▸ As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested. ▸ Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered. **This must definitely be left to a doctor or person authorised by him/her.**

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	(ICSC13719)
Ingestion	▸ Avoid giving milk or oils. ▸ Avoid giving alcohol. ▸ For advice, contact a Poisons Information Centre or a doctor at once. ▸ Urgent hospital treatment is likely to be needed. ▸ 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. ▸ Transport to hospital or doctor without delay. ▸ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Firefighting measures

Extinguishing media

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

Special hazards arising from the substrate or mixture

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

Advice for firefighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear full body protective clothing with breathing apparatus. ▸ Prevent, by any means available, spillage from entering drains or water course. ▸ Use fire fighting procedures suitable for surrounding area. ▸ **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. ▸ Equipment should be thoroughly decontaminated after use.
Fire/Explosion Hazard	**WARNING:** In use may form flammable/ explosive vapour-air mixtures. ▸ Combustible. ▸ Slight fire hazard when exposed to heat or flame. ▸ Acids may react with metals to produce hydrogen, a highly flammable and explosive gas. ▸ Heating may cause expansion or decomposition leading to violent rupture of containers. ▸ May emit acrid smoke and corrosive fumes. Combustion products include: carbon monoxide (CO) carbon dioxide (CO2) phosphorus oxides (POx) metal oxides other pyrolysis products typical of burning organic material.
HAZCHEM	2X

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	▸ Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material. ▸ Check regularly for spills and leaks. ▸ Clean up all spills immediately. ▸ Avoid breathing vapours and contact with skin and eyes. ▸ Control personal contact with the substance, by using protective equipment. ▸ Contain and absorb spill with sand, earth, inert material or vermiculite. ▸ Wipe up. ▸ Place in a suitable, labelled container for waste disposal.
Major Spills	▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear full body protective clothing with breathing apparatus. ▸ Prevent, by all means available, spillage from entering drains or water courses. ▸ 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 or absorb spill with sand, earth or vermiculite. ▸ Collect recoverable product into labelled containers for recycling. ▸ Collect solid residues and seal in labelled drums for disposal. ▸ Wash area and prevent runoff into drains.

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	▸ After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. ▸ If contamination of drains or waterways occurs, advise emergency services.

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

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	The conductivity of this material may make it a static accumulator., A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-conductive if its conductivity is below 10 000 pS/m., Whether a liquid is nonconductive or semi-conductive, the precautions are the same., A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid. ▸ 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. ▸ **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. · Wait 2 minutes after tank filling (for tanks such as those on · road tanker vehicles) before opening hatches or manholes. · Wait 30 minutes after tank filling (for large storage tanks) · before opening hatches or manholes. Even with proper · grounding and bonding, this material can still accumulate an · electrostatic charge. If sufficient charge is allowed to · accumulate, electrostatic discharge and ignition of flammable · air-vapour mixtures can occur. Be aware of handling · operations that may give rise to additional hazards that result · from the accumulation of static charges. These include but are · not limited to pumping (especially turbulent flow), mixing, · filtering, splash filling, cleaning and filling of tanks and · containers, sampling, switch loading, gauging, vacuum truck · operations, and mechanical movements. These activities may · lead to static discharge e.g. spark formation. Restrict line · velocity during pumping in order to avoid generation of · electrostatic discharge (= 1 m/s until fill pipe submerged to · twice its diameter, then = 7 m/s). 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. ▸ Avoid contact with moisture. ▸ Avoid contact with incompatible materials. ▸ When handling, **DO NOT** eat, drink or smoke. ▸ Keep containers securely sealed when not in use. ▸ Avoid physical damage to containers. ▸ Always wash hands with soap and water after handling. ▸ Work clothes should be laundered separately. Launder contaminated clothing before re-use. ▸ Use good occupational work practice. ▸ Observe manufacturer's storage and handling recommendations contained within this SDS. ▸ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
Other information	▸ Store in original containers. ▸ Keep containers securely sealed. ▸ No smoking, naked lights or ignition sources. ▸ Store in a cool, dry, well-ventilated area. ▸ Store away from incompatible materials and foodstuff containers. ▸ Protect containers against physical damage and check regularly for leaks. ▸ Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ **DO NOT** use aluminium or galvanised containers ▸ Check regularly for spills and leaks ▸ Lined metal can, lined metal pail/ can. ▸ Plastic pail. ▸ Polyliner drum. ▸ Packing as recommended by manufacturer. ▸ Check all containers are clearly labelled and free from leaks. For low viscosity materials ▸ Drums and jerricans must be of the non-removable head type. ▸ 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) and solids (between 15 C deg. and 40 deg C.): ▸ Removable head packaging; ▸ Cans with friction closures and ▸ low pressure tubes and cartridges may be used. - Where combination packages are used, and the inner packages are of glass, porcelain or stoneware, there must be sufficient inert cushioning material in contact with inner and outer packages unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.
Storage incompatibility	▸ Reacts with mild steel, galvanised steel / zinc producing hydrogen gas which may form an explosive mixture with air. ▸ Avoid strong bases. ▸ Segregate from alkalies, oxidising agents and chemicals readily decomposed by acids, i.e. cyanides, sulfides, carbonates.

SECTION 8 Exposure controls / personal protection

Control parameters

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Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	hydrocarbons, C9-11, n-alkanes, isoalkanes, cyclics, <2% aromatics	Oil mist, refined mineral	5 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	maleic anhydride	Maleic anhydride	0.25 ppm / 1 mg/m3	Not Available	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
hydrocarbons, C9-11, n-alkanes, isoalkanes, cyclics, <2% aromatics	350 mg/m3	1,800 mg/m3	40,000 mg/m3
maleic anhydride	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
hydrocarbons, C9-11, n-alkanes, isoalkanes, cyclics, <2% aromatics	2,500 mg/m3	Not Available
iron 2-ethylhexanoate	Not Available	Not Available
3,5,5-trimethylhexanoic acid	Not Available	Not Available
butylacid phosphate	Not Available	Not Available
maleic anhydride	10 mg/m3	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
3,5,5-trimethylhexanoic acid	C	> 1 to ≤ 10 parts per million (ppm)
butylacid phosphate	C	> 1 to ≤ 10 parts per million (ppm)
Notes:	***Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.***	

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure. ▸ Employees exposed to confirmed human carcinogens should be authorized to do so by the employer, and work in a regulated area. ▸ Work should be undertaken in an isolated system such as a "glove-box" . Employees should wash their hands and arms upon completion of the assigned task and before engaging in other activities not associated with the isolated system. ▸ Within regulated areas, the carcinogen should be stored in sealed containers, or enclosed in a closed system, including piping systems, with any sample ports or openings closed while the carcinogens are contained within. ▸ Open-vessel systems are prohibited. ▸ Each operation should be provided with continuous local exhaust ventilation so that air movement is always from ordinary work areas to the operation. ▸ Exhaust air should not be discharged to regulated areas, non-regulated areas or the external environment unless decontaminated. Clean make-up air should be introduced in sufficient volume to maintain correct operation of the local exhaust system. ▸ For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood. Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood. ▸ Except for outdoor systems, regulated areas should be maintained under negative pressure (with respect to non-regulated areas). ▸ Local exhaust ventilation requires make-up air be supplied in equal volumes to replaced air. ▸ Laboratory hoods must be designed and maintained so as to draw air inward at an average linear face velocity of 0.76 m/sec with a minimum of 0.64 m/sec. Design and construction of the fume hood requires that insertion of any portion of the employees body, other than hands and arms, be disallowed.
Individual protection measures, such as personal protective equipment	
Eye and face protection	▸ Chemical goggles. ▸ Full face shield may be required for supplementary but never for primary protection of eyes. ▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]
Skin protection	See Hand protection below
Hands/feet protection	▸ Wear chemical protective gloves, e.g. PVC. ▸ Wear safety footwear or safety gumboots, e.g. Rubber ▸ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots. The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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	The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care. 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. Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: · frequency and duration of contact, · chemical resistance of glove material, · glove thickness and · dexterity Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent). · When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. · Contaminated gloves should be replaced. As defined in ASTM F-739-96 in any application, gloves are rated as: · Excellent when breakthrough time > 480 min · Good when breakthrough time > 20 min · Fair when breakthrough time < 20 min · Poor when glove material degrades For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times. Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task. Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example: · Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of. · Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential 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.
Body protection	See Other protection below
Other protection	▸ Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZS ISO 6529:2006 or national equivalent] ▸ Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted. [AS/NZS 1715 or national equivalent] ▸ Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely. ▸ Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood. ▸ Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood. ▸ Overalls. ▸ PVC Apron. ▸ PVC protective suit may be required if exposure severe. ▸ Eyewash unit. ▸ Ensure there is ready access to a safety shower.

Respiratory protection

Type AB-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	AB-AUS P2	-	AB-PAPR-AUS / Class 1 P2
up to 50 x ES	-	AB-AUS / Class 1 P2	-
up to 100 x ES	-	AB-2 P2	AB-PAPR-2 P2 ^

^ - 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(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- 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.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

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SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Flammable brown liquid with characteristic odor. Brown

Physical state	Liquid	**Relative density (Water = 1)**	approx. 0.894
Odour	Characteristic	**Partition coefficient n-octanol / water**	Not Available

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Odour threshold	Not Available	**Auto-ignition temperature (°C)**	>200
pH (as supplied)	Not Available	**Decomposition temperature (°C)**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	< 6.99
Initial boiling point and boiling range (°C)	=>160	**Molecular weight (g/mol)**	Not Available
Flash point (°C)	>61	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Combustible.	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	7	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	0.6	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	<=1 @ 20 C	**Gas group**	Not Available
Solubility in water	Not Available	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▸ Contact with alkaline material liberates heat
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. 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. 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.
Ingestion	The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion. 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.
Skin Contact	The material can produce chemical burns following direct contact with the skin. 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. The liquid may be able to be mixed with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis. The material is unlikely to produce an irritant dermatitis as described in EC Directives. The material may accentuate any pre-existing dermatitis condition
Eye	The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating. If applied to the eyes, this material causes severe eye damage. Irritation of the eyes may produce a heavy secretion of tears (lachrymation).
Chronic	There is sufficient evidence to suggest that this material directly causes cancer in humans. There is ample evidence to presume that exposure to this material can cause genetic defects that can be inherited. Based on experiments and other information, there is ample evidence to presume that exposure to this material can cause genetic defects that can be inherited. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Based on experience with animal studies, there is a possibility that 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.

#J02260 JLM DPF Refill Fluid	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
hydrocarbons, C9-11, n-alkanes, isoalkanes, cyclics, <2% aromatics	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[1]	Eye: no adverse effect observed (not irritating)[1]
	Inhalation (Rat) LC50: >5.266 mg/L4h[1]	Skin: adverse effect observed (irritating)[1]
	Oral (Rat) LD50: >5000 mg/kg[1]	Skin: no adverse effect observed (not irritating)[1]
iron 2-ethylhexanoate	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[1]	Skin: no adverse effect observed (not irritating)[1]

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	Oral (Rat) LD50: 2043 mg/kg[1]	
3,5,5-trimethylhexanoic acid	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[2]	Eye: adverse effect observed (irreversible damage)[1]
	Oral (Rat) LD50: 1100 mg/kg[2]	Skin: adverse effect observed (irritating)[1]
butylacid phosphate	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: >2000 mg/kg[1]	Eye: adverse effect observed (irritating)[1]
	Oral (Rat) LD50: >2000 mg/kg[1]	Skin: adverse effect observed (corrosive)[1]
maleic anhydride	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: 2620 mg/kg[2]	Eye (rabbit): 1% - SEVERE
	Inhalation (Rat) LC50: >1.088 mg/l4h[1]	Eye: adverse effect observed (irreversible damage)[1]
	Oral (Rat) LD50: 400 mg/kg[2]	Eye: adverse effect observed (irritating)[1]
		Skin: adverse effect observed (corrosive)[1]
		Skin: adverse effect observed (irritating)[1]

Legend:	***1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances***

HYDROCARBONS, C9-11, N-ALKANES, ISOALKANES, CYCLICS, <2% AROMATICS

Animal studies indicate that normal, branched and cyclic paraffins are absorbed from the gastrointestinal tract and that the absorption of n-paraffins is inversely proportional to the carbon chain length, with little absorption above C30. With respect to the carbon chain lengths likely to be present in mineral oil, n-paraffins may be absorbed to a greater extent than iso- or cyclo-paraffins.
The major classes of hydrocarbons are well absorbed into the gastrointestinal tract in various species. In many cases, the hydrophobic hydrocarbons are ingested in association with fats in the diet. Some hydrocarbons may appear unchanged as in the lipoprotein particles in the gut lymph, but most hydrocarbons partly separate from fats and undergo metabolism in the gut cell. The gut cell may play a major role in determining the proportion of hydrocarbon that becomes available to be deposited unchanged in peripheral tissues such as in the body fat stores or the liver.
Animal testing showed exposure to high concentrations (over 3500 parts per million) of C9 to C13 alkanes in air caused inco-ordination, seizures and spasms. Cerebellar damage was found on autopsy in some animals. It appears that exposure may possibly damage the central nervous system.
For high molecular weight aliphatic hydrocarbons:
Acute toxicity:
Four studies were available for acute oral toxicity, dealing with the toxicity of C5-C20 normal paraffins, C14-C17 n-alkanes, C14-C16 paraffins and isohexadecane. All studies were conducted similarly to OECD guideline 401 without GLP compliance. All studies show no mortality at concentrations up to 5000 mg/kg bw.
Three studies were available for acute dermal toxicity, dealing with the toxicity of C5-C20 normal paraffins, C14-C17 n-alkanes and C14-C16 paraffins. All studies were conducted similarly to OECD guideline 402 without GLP compliance. All studies show no mortality at concentrations equal to or higher than 2000 mg/kg bw.
A reliable study and a non-reliable study were available for acute inhalation, dealing with the toxicity of hydrocarbons, C10-C12, isoalkanes, < 2% aromatics and C14-C16 n-paraffins, respectively. All studies were conducted similarly to OECD guideline 403. They all show no mortality at concentrations equal to or higher than 5000 mg/m3.
Sensitisation:
C9-C14 aliphatic, < 2% aromatic hydrocarbons fluids were determined not to be skin sensitizers using Magnusson and Kligman Guinea-Pig Maximization tests (OECD TG 406). C9-C14 aliphatic, <2% aromatic hydrocarbons fluids were determined not to be skin sensitizers in Human Repeated Insult Patch Tests (HRIPT)
C10-12 isoalkanes (<2% aromatics), C11-C14 n-alkanes (<2% aromatics) and C10-C13 (<2% aromatics) were not dermal sensitizers using a Magnusson and Kligman Guinea-Pig Maximization test (OECD TG 406).
However, skin sensitization studies utilizing C9-14 aliphatics (<2 % aromatics) found no indication of skin sensitization in guinea pigs.
Additional studies on C14-C20 aliphatics (<2% aromatics) in humans also found no indication of skin sensitization.
There are no reports of respiratory sensitization from C14-20 aliphatics (<2 % aromatics) in laboratory animals or humans.
Repeat dose toxicity:
Oral: C9-C14 aliphatic, < 2% aromatic hydrocarbon fluids are expected to have a low order of repeated dose toxicity by the oral route of exposure. All tests were performed in a manner similar or equivalent to currently established OECD guidelines. In a repeated dose study where C9-C14 aliphatic, < 2% aromatic hydrocarbon fluids were administered via oral gavage, no signs of toxicity were observed at the maximum experimental dose tested, 5000 mg/kg/day.
Inhalation: In a repeated dose study where C9-C14 aliphatic, < 2% aromatic hydrocarbon fluids were administered via inhalation, no signs of toxicity were observed at 10400 mg/m3. Based on these observations, the repeat inhalation concentration NOAEL is >=10400 mg/m3 (10.4 mg/L) for C9-C14 aliphatic, < 2% aromatic hydrocarbon fluids.
Two read-across studies from the structurally analogous test materials "hydrocarbons C12-C16, n-alkanes, isoalkanes, cyclics, <2% aromatics" and "hydrocarbons, C10 -C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics" were analysed. All tests were performed in a manner similar or equivalent to currently established OECD guidelines. The systemic NOAEL were determined to be higher than 1000 and 5000 mg/kg/day, respectively.
Inhalation: a repeated inhalation toxicity study was performed with "Hydrocarbons, C10 – C12, isoalkanes, < 2% aromatics" similarly to OECD guideline 413. Albino rats were exposed for 6 hours/day, 5 days/week for 13 weeks at nominal vapour concentrations of 10400 mg/m3, 5200 mg/m3, and 2600 mg/m3 to assess inhalation toxicity. As there were no pathologic changes, changes in organ weights were judged to have been compensatory rather than toxic effects. Based on these results, the No Observed Adverse Effect Concentration (NOAEC) was greater than or equal to 10400 mg/m3.
Oral: C9-C14 aliphatic, < 2% aromatic hydrocarbon fluids are expected to have a low order of repeated dose toxicity by the oral route of exposure. All tests were performed in a manner similar or equivalent to currently established OECD guidelines. In a repeated dose study where C9-C14 aliphatic, < 2% aromatic hydrocarbon fluids were administered via oral gavage, no signs of toxicity were observed at the maximum experimental dose tested, 5000 mg/kg/day.
Inhalation: In a repeated dose study where C9-C14 aliphatic, < 2% aromatic hydrocarbon fluids were administered via inhalation, no signs of toxicity were observed at 10400 mg/m3. Based on these observations, the repeat inhalation concentration NOAEL is >=10400 mg/m3 (10.4 mg/L) for C9-C14 aliphatic, < 2% aromatic hydrocarbon fluids.
Genetic toxicity:
C9-C14 aliphatic, < 2% aromatic hydrocarbons fluids are not mutagenic using in vitro or in vivo genotoxicity assays. In bacterial tests, C9-C14 aliphatic, < 2% aromatic hydrocarbons fluids were not mutagenic in Salmonella strains tested in the presence or absence of metabolic activation. C9 -C14 aliphatic, <2% aromatic hydrocarbon fluids were negative in a in vitro mammalian cell gene mutation assay. In sister chromatid exchange and in chromosomal aberration studies, C9-C14 aliphatic, < 2% aromatic hydrocarbons fluids did not produce an effect. C9-C14 aliphatic, < 2% aromatic hydrocarbons fluids were also non-mutagenic when tested in an in vivo mouse bone marrow micronucleus assay and when tested in dominant lethal studies utilizing an inhalation route of exposure. All studies were conducted in a manner similar or

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equivalent to currently established OECD guidelines. C9-C14 aliphatic, < 2% aromatic hydrocarbons fluids are a non-genotoxic agent and classification is not warranted under the new Regulation (EC) 1272/2008 on classification, labeling and packaging of substances and mixtures (CLP) or under the Directive 67/518/EEC for dangerous substances and Directive 1999/45/EC for preparations.
All Ames tests on "hydrocarbons, C14-C20, n-alkanes, isoalkanes, cyclics,<2% aromatics" showed no mutagenic effect with and without metabolic activation. The chromosome aberration study in CHO cells on "hydrocarbons, C12-C16, n-alkanes, isoalkanes, cyclics,<2% aromatics" also showed no signs of mutagenicity. A mouse lymphoma forward mutation assay performed with hydrodesulfurised kerosene also showed no mutagenic properties.
The weight of evidence is derived from study records reported for the C9-C14 aliphatic, <2% aromatics. C9-C14 aliphatic, <2% aromatics are not genotoxic and are not classifiable as mutagens based upon the results of reliable in vitro and in vivo studies. In bacterial reverse mutation studies, the C9-C14 aliphatic, <2% aromatics were not mutagenic in the presence or absence of metabolic activation (IUCLID section 7.6.1). In mammalian cells in vitro, and in rats in vivo there were no mutagenic, clastenogenic or aneugenic effects reported in read-across from studies on C9-C14 aliphatic, <2% aromatics: a negative chromosome aberration (Human Peripheral Lymphocyte Chromosomal Aberration Test, Chinese Hamster Ovary Sister Chromatid Exchange Assay); and an in vivo inhalation exposure bone marrow chromosomal aberration study and micronucleus test (IUCLID sections 7.6.1 and 7.6.2).
Endpoint Conclusion: No adverse effect observed (negative)

Toxicity to reproduction:

C9-C14 aliphatic, <2% aromatic hydrocarbon fluids were examined for reproductive toxicity in a 28 day combined repeated dose toxicity study with the reproduction / developmental toxicity screening test (OECD TG 422). C9-C14 aliphatic, <2% aromatic hydrocarbon fluids were administered oral gavage at a dose of 0, 25, 150, or 1000 mg/kg/day to groups of Sprague-Dawley rats. It was concluded that C9-C14 aliphatic, <2% aromatic hydrocarbon fluids did not induce reproductive toxicity in the parental animals and no effects on the endocrine system were observed. Therefore, the NOAEL was determined to be >=1000 mg/kg bw/day.
C9-C14 aliphatic, <2% aromatic hydrocarbon fluids were examined in a reproduction / developmental toxicity screening test (OECD TG 421). C9-C14 aliphatic, <2% aromatic hydrocarbon fluids were administered by oral gavage at a dose of 0 (vehicle), 100, 300, 1000 mg/kg/day to groups of Sprague-Dawley rats. It was concluded that C9-C14 aliphatic, <2% aromatic hydrocarbon fluids did not induce reproductive toxicity in the parental animals and no effects on the endocrine system were observed. Therefore, the NOAEL was determined to be >=1000 mg/kg bw/day.
Based on this study and the lack of systemic toxicity, C9-C14 aliphatic, <2% aromatic hydrocarbon fluids, are not expected to be reproductive toxicants.
In bacterial reverse mutation studies, the C14-C20 aliphatic, <2% aromatics were not mutagenic in the presence or absence of metabolic activation (IUCLID section 7.6.1). In mammalian cells in vitro, and in rats in vivo there were no mutagenic, clastogenic or aneugenic effects reported in read-across from studies on hydrodesulfurized kerosene kerosene, and jet fuels that included: a negative chromosome aberration (Human Peripheral Lymphocyte Chromosomal Aberration Test, Chinese Hamster Ovary Sister Chromatid Exchange Assay); and an in vivo inhalation exposure bone marrow chromosomal aberration study and micronucleus test in rats and mice (IUCLID sections 7.6.1 and 7.6.2).
C9-C14 aliphatic, < 2% aromatic hydrocarbon fluids were examined for reproductive toxicity in a 28 day combined repeated dose toxicity study with the reproduction / developmental toxicity screening test (OECD TG 422). C9-C14 aliphatic, < 2% aromatic hydrocarbon fluids were administered oral gavage at a dose of 0, 25, 150, or 1000 mg/kg/day to groups of Sprague-Dawley rats. It was concluded that C9-C14 aliphatic, < 2% aromatic hydrocarbon fluids did not induce reproductive toxicity in the parental animals and no effects on the endocrine system were observed. Therefore, the NOAEL was determined to be >=1000 mg/kg bw/day.

Exposure in humans:

Seven studies were available on the irritation and/or sensitisation potential of several types of hydrocarbon solvents in volunteers. Clinical tests were conducted with populations ranging from 29 to 112 patients. None of the test substances elicited any sensitisation and/or irritation effects except C5-C20 paraffin, which showed a cumulative irritation effect at 75% . However, this substance was tested under occlusive patch, a condition which exacerbates the irritancy of hydrocarbon solvents.

Toxicokinetics:

If C9-C14 aliphatic, <2% aromatic hydrocarbon fluids are absorbed, they are typically metabolized by side chain oxidation to alcohol and carboxylic acid derivatives. These metabolites can be glucuronidated and excreted in the urine or further metabolized before being excreted. The majority of the metabolites are excreted in the urine and to a lower extent, in the faeces. Excretion is rapid with the majority of the elimination occurring within the first 24 hours of exposure. As a result of the lack of systemic toxicity and the ability of the parent material to undergo metabolism and rapid excretion, bioaccumulation of the test substance in the tissues is not likely to occur.
C9-C14 aliphatic, <2% aromatic hydrocarbon fluids are poorly absorbed dermally with an estimated overall percutaneous absorption rate of approximately 2ug/cm2/hr or 1% of the total applied fluid. Regardless of exposure route, C9-C14 aliphatic, <2% aromatic hydrocarbon fluids are rapidly metabolized and eliminated**.**
C14-C20 aliphatic, <2% aromatic hydrocarbon fluids are typically metabolized by side chain oxidation to alcohol and carboxylic acid derivatives. These metabolites can be glucuronidated and excreted in the urine or further metabolized before being excreted. The majority of the metabolites are excreted in the urine and to a lower extent, in the faeces. Excretion is rapid with the majority of the elimination occurring within the first 24 hours of exposure. As a result of the lack of systemic toxicity and the ability of the parent material to undergo metabolism and rapid excretion, bioaccumulation of the test substance in the tissues is not likely to occur.
Short description of key information on absorption rate:
C14-C20 aliphatic, <2% aromatic hydrocarbon fluids can be dermally absorbed, although they tend to partition into the stratum corneum. When dermally absorbed, C14-C20 aliphatic, <2% aromatic hydrocarbon fluids are rapidly metabolized and eliminated.
Approximately 34% of C14–C20 aliphatic, <2% aromatic hydrocarbon fluids are absorbed when ingested. C14–C20 aliphatic, <2% aromatic hydrocarbon fluids is poorly dermally absorbed. Absorption following inhalation is assumed to be similar to ingestion since exposures will be to aerosol. Regardless of exposure route, C14–C20 aliphatic, <2% aromatic hydrocarbon fluids are rapidly metabolized. Bioaccumulation of C14–C20 aliphatic, <2% aromatic hydrocarbon fluids is not expected.
C14-C20 aliphatic, <2% aromatic hydrocarbon fluids are absorbed if ingested. C14-C20 aliphatic, <2% aromatic hydrocarbon fluids undergo metabolism and rapid excretion and low deposition, bioaccumulation of the test substance in the tissues is not likely to occur.
The fate of pristane (2,6,10,14-tetramethylpentadecane) was studied in rats after a single per os administration of 3H-labeled pristane. The balance study showed extensive fecal excretion (66%) mainly as unchanged hydrocarbon, whereas about 14% of ingested pristane was excreted in urine as pristane metabolites and tritiated water. After one week, 8.3% of the ingested 3H still was stored in the carcass and the radioactive distribution in tissues and organs showed a preferential incorporation into adipose tissue and liver. Over 75% of the radioactivity stored in the carcass was associated with pristane metabolites and tritiated water. Tissue metabolites were characterized by thin layer chromatography, gas chromatography, and mass spectrometric analyses. Four metabolites were identified: pristan-1-ol, pristane-2-ol, pristanic acid and 4,8,12-trimethyltridecanoic acid. These results demonstrated that pristane undergoes subterminal hydroxylation or terminal oxidation followed by the classical beta-oxidation process.
Labeled paraffins with 8-18 C atoms prepared from unsaturated hydrocarbons by addition of deuterium have been added in oily solution to normal rats food. After six days an increase of deuterium content in the body fluid of all the rats was observed indicating that the labeled compounds had been metabolized. Deuterium was found in the fatty acids of the body fats and the liver lipids especially after feeding octadecane and hexadecane. Isolating oleic, stearic, and palmitic acids containing deuterium, indicated that methyl- and beta-oxidation of these hydrocarbons has occurred. Fatty acids resulting from the metabolism of hydrocarbons with shorter chains were not deposited but in these cases the urine contained fatty acids with higher deuterium content than after administration of octadecane and hexadecane.
According to the deuterium content of the neutral fractions from the liver and body lipids all the hydrocarbons tested were deposited only to a small extent, the largest depots occurring mainly after feeding with octadecane and hexadecane.

Discussion on absorption rate:

There have not been any in vivo dermal absorption studies of C14 – C20 aliphatic, <2% aromatic hydrocarbon fluids, but there have been in vitro studies of similar constituents, particularly hexadecane.
The percutaneous absorption and cutaneous disposition of topically applied neat Jet-A, JP-8, and JP-8(100) jet fuels (25 µL/5 cm2) was examined by monitoring the absorptive flux of the marker components 14C naphthalene and 4H dodecane simultaneously applied non-occluded to isolated perfused porcine skin flaps (a = 4). Absorption of 14C hexadecane was estimated from JP-8 fuel. Absorption and disposition of naphthalene and dodecane were also monitored using a nonvolatile JP-8 fraction reflecting exposure to residual fuel that might occur 24 h after a jet fuel spill. In all studies, perfusate, stratum corneum, and skin concentrations were measured over 5 h. Naphthalene absorption had a clear peak absorptive flux at less than 1 h, while dodecane and hexadecane had prolonged, albeit significantly lower, absorption flux profiles. Within JP-8, absorption was (mean +/- SEM; % dose) hexadecane (0.18 +/- 0.08). The area under the curve (AUC) was determined to be (mean +/- SEM; % dose-h/mL): hexadecane (0.0017 +/- 0.0003).

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	The flux, permeability coefficient (Kp), and binding of hexadecane for porcine skin was determined to be 8.80 +/- 0.00 (nmol/cm2/h) x 10E-3. The permeability coefficient (Kp), and binding of hexadecane for human skin were determined to be 7.02 +/- 0.00 (nmol/cm2/h) x 10E-3. Factor of difference (FOD) in the permeability of pig and human skin was 1.28 for hexadecane. The FOD in binding of hexadecane to pig and human skin was found to be 0.76. **Over view of percutaneous absorption of hydrocarbon solvents** There are no studies of repeated dose toxicity of hydrocarbon solvents using the dermal route of administration. Accordingly, where it is necessary to calculate dermal DNELs, systemic data from studies utilizing other routes of administration, normally inhalation but also oral data, can be used in some situations. In accordance with ECHA guidance, read across from oral or inhalation data to dermal should account for differences in absorption where these exist. In fact, hydrocarbon solvents are poorly absorbed in most situations, in part because some are volatile and do not remain in contact with the skin for long periods of time and also because, due to their hydrophobic natures, do not partition well into aqueous environments and are poorly absorbed into the blood. If these differences in relative absorption are introduced into the DNEL calculations to calculate external doses, the DNELs based on systemic effects are highly inflated. This seems potentially misleading as it implies that substances have different intrinsic hazards when encountered by different routes whereas in fact the differences are due ultimately to differences in absorbed dose. . Several authors have assessed the percutaneous absorption of higher molecular weight aliphatic constituents. Using porcine skin models the percutaneous absorption values for aliphatic constituents ranging from nonane to tetradecane were well below 1 µg/cm2/hr. Rat and human skin are considered to be more permeable than human skin (so these numbers can be considered conservative. Results of percutaneous absorption studies with human skin under in vivo conditions produced values ranging from 1 – 2 µg/kg/day for decane, undecane and dodecane. With respect to aromatic hydrocarbons, most of the reported percutaneous absorption values) are less than 2 µg/cm2/day. After considering all of the above, it seems reasonable to assume apparent that across the entire range of hydrocarbon solvent constituents, percutaneous absorption values are less than 2 µg/cm2/day. Accordingly, when systemic dermal DNELs are calculated using route to route extrapolations, the values will not be corrected for differences in absorption. Rather, 2 µg/cm2/hr should be used as a common percutaneous absorption rate for all hydrocarbon solvents for which dermal exposure estimates are provided.
3,5,5-TRIMETHYLHEXANOIC ACID	For acid mists, aerosols, vapours Test results suggest that eukaryotic cells are susceptible to genetic damage when the pH falls to about 6.5. Cells from the respiratory tract have not been examined in this respect. Mucous secretion may protect the cells of the airway from direct exposure to inhaled acidic mists (which also protects the stomach lining from the hydrochloric acid secreted there). A neo acid or its derivative: A neo acids exhibit highly branched structures in which the carboxylic group is attached to a quaternary carbon atom where R1, R2 and R3 are alkyl groups. The high steric hindrance provided by the neo acid structure imparts excellent thermal and hydrolytic stability in derivatives and also helps make neo acids a superior building block for coatings derivatives. The production of neoacid products involves the reaction between a branched olefin with carbon monoxide and water at elevated temperatures and pressures in the presence of an acid catalyst. The neoacids C5-28 are structurally similar and create a predictable pattern of physiochemical properties, environmental fate and effects and human health effects. Neoacids are trialkylacetic acids in which each hydrogen on the non carboxyl carbon of acetic acid has been replaced by an alkyl group. The structural features of members of the category are as follows: · A common structure - a quaternary carbon with the general structure R3CCOOH, · An incremental and constant change across the category where R can be a branched alkyl group ranging from CH3 to C6H13 as the main constituent, · A likelihood of common precursors and breakdown products that can result in structurally similar metabolites (e.g carboxylic acids). The existing data suggest that products in the Neoacids (C5-C28) Category exhibit relatively low toxicity for human health endpoints and moderate toxicity for the environmental health endpoints. Due to the stability conferred by the quaternary carbon, neoacids C5-C28 are relatively resistant to biotransformation and do not readily form bioactive metabolites. Enzymatic removal of the alkyl groups at the quaternary carbon would allow for other metabolic processes to occur. These would likely be mitochondrial beta-oxidation or by cytochrome P450 mediated omega and omega-minus-one oxidation (may be followed by beta-oxidation) to produce acetate. However, since Neoacids C5-C28 are not readily metabolised, they would primarily be eliminated in the urine as glucuronic acid conjugates or by dealkylation **Acute toxicity**: All of the neoacids C5-C28 have a low order of toxicity to rats via the oral route of exposure The LD50 values for 2,2-dimethylpropanoic acid, and 2,2- dimethyloctanoic acid were 2000 mg/kg. In addition, the LD50 for Carboxylic acid, C6-8 neo was 1860 mg/kg. These results demonstrate that members of the Neoacids C5- C28 Category have a consistent, low order of acute oral toxicity. The neoacids C5-C28 have a low order of toxicity via the dermal route of exposure The rabbit dermal LD50 for all members of the category was equal to or greater than 3160 mg/kg. This indicates that the members of this category have a consistent pattern of acute toxicity via the dermal route of exposure. **Repeat dose toxicity:** The subchronic toxicity of neoacids C5-C28 has been assessed by conducting repeat dermal exposure studies. Dermal exposure is the primary route of exposure for Neoacids C5-C28, particularly in an industrial setting. An evaluation of the repeated dose studies indicates that Neoacids C5-C28 have a low order of subchronic toxicity. 2,2-Dimethylpropanoic acid, in isopropyl alcohol solution, was repeatedly applied to the shaved intact skin of albino rabbits 5 days/week for two weeks (for a total of 10 applications) at doses of 30 or 300 mg/kg/day. Slight to moderate irritation at the low dose and moderate to marked irritation at the high dose was observed. Slight or moderate erythema, atonia, and desquamation were seen at the low dose. At the high dose, skin irritation consisted of moderate erythema, slight to marked edema, moderate or marked atonia and desquamation. Some dermal necrosis at the site of application was seen in three rabbits and persisted throughout the study. Control animals that received only the solvent (isopropyl alcohol) showed slight irritation. There were no signs of systemic toxicity attributable to dermal absorption of 2,2-dimethylpropanoic acid. The NOAEL for systemic toxicity in this study was 300 mg/kg . In a similar study, carboxylic acid, C6-8 neo was applied at 55.4 mg/kg and 553.7 mg/kg for 10 applications. No treatment related effects were observed on behavior of clinical signs during the in-life phase of the study. Gross pathology of the animals in all dose groups did not reveal any abnormalities Repeated application of carboxylic acid C6-8 neo did produce marked skin irritation with some dermal necrosis at the site of application in the high dose group. Since no systemic effects were observed in this study, the NOAEL for systemic effects following subchronic dermal application of carboxylic acid, C6-8 neo was 553.7 mg/kg. Repeated dermal application (400 or 2800 mg/kg daily for a total of 10 applications) of undiluted 2,2-dimethyloctanoic acid generally produced irritation at the low dose and fissuring at the high dose. Slight to moderate erythema, atonia and desquamation were seen at the low dose. At the high dose, skin irritation consisted of moderate erythema, moderate to severe atonia, and desquamation with fissuring. No signs of systemic toxicity were attributed to 2,2-dimethyloctanoic acid. Therefore, the NOAEL for systemic toxicity following subchronic dermal application of 2,2-dimethyloctanoic acid was 2280 mg/kg. In summary, Neoacids C5-C28 have a low order of subchronic toxicity. In addition, they display a consistent pattern of subchronic toxicity in that the NOAEL for systemic toxicity increases in a predictable pattern from the low to the high molecular weight end of the category. **Developmental toxicity:** The available developmental toxicity data on neoacids indicate that they are not selective developmental toxicants. A developmental toxicity study conducted on Carboxylic acid, C6-8 neo produced a NOAEL of 250 mg/kg for both maternal and fetal effects Carboxylic acid, C6-8 neo was not a selective developmental toxicant in this study. In a 3-generation reproduction study with 2,2-dimethyloctanoic acid, developmental effects were not observed in either the F1 or F2 offspring . This study produced a NOAEL of 1500 ppm (in diet) for the maternal, F1, and F2 generations. Additional developmental toxicology data are available for isoacids, which are isomers of the neoacids. The isoacids are aliphatic carboxylic acids that have saturated branching structures. Isooctanoic acid was tested for developmental toxicity in female rats at doses of 0, 200, 400, and 800 mg/kg/day during gestation days 6 - 15 . At 800 mg/kg/day, maternal toxicity was observed; however, there were no effects at 400 mglkglday. There were no biologically significant developmental effects in this study. The no-observable-adverse-effect level (NOAEL) for maternal toxicity was 400 mglkglday and for developmental toxicity was 800 mg/kg/day. In a one-generation reproductive toxicity range-finding study, rats were exposed to isooctanoic acid at dietary levels of 1000, 5000, 75000, or 10,000 ppm . In the parental generation, there were no treatment-related effects on survival, organ weights, or reproductive function. In the offspring, there were no treatment-related effects on survival, developmental landmarks, or any significant findings in postmortem evaluations. Statistically significant decreases in the mean offspring body weights of males and females were observed at 10,000 ppm. The high dose also resulted in a suppression of body weight gain in the adult females. Thus, the NOAEL for both parental and offspring effects was 7500 ppm.

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	A one-generation reproduction study was conducted on isononanoic acid . Rats were administered the test material in the diet at doses of 0, 600, 1200, 2500, and 5000 ppm. There were no treatment-related effects observed on mating, fertility, fecundity, or gestation indices or during sperm analysis. Evidence of maternal toxicity included decreased body weights and increased liver weights in the 2500 and 5000 ppm dose groups. In the offspring, reduced survival indices were noted in the 5000 ppm dose group, and reduced body weights were noted in the 2500 and 5000 ppm dose groups. The NOAEL for both maternal and offspring effects in this study was 1200 ppm. Further support for the evaluation of the potential of neoacids to be developmental toxicants comes from an analysis of the structure activity relationships that affect teratogenicity. A structure-teratogenicity analysis of carboxylic acids concluded that aliphatic acids, which have a dimethyl substitution at the C-2 position, are not developmental toxicants. Furthermore, the structural requirements for carboxylic acid teratogenicity require an alpha hydrogen and a free carboxylic group. Since the neoacids are defined by their trialkyl substitution at the alpha carbon, there is no alpha hydrogen. In addition, steric hindrance of the carbonyl group by the quaternary center of the alpha carbon inhibits reactions. In conclusion, the available test data on neoacids and their isomers, as well as the structure-teratogenicity relationship for aliphatic acids, provide sufficient information for a screening-level assessment of the developmental toxicity of neoacids. **Reproductive toxicity:** The available data support the conclusion that the neoacids C5-C28 are not selective reproductive toxicants. In a modified three-generation reproduction study, rats were exposed to 100, 500, or 1500 ppm 2,2-dimethyloctanoic acid in the diet (approximately 5, 25 and 75 mg/kg/day, respectively). No significant effects were observed in survival, appearance, behavior, or reproductive performance of the parents. No adverse effects were demonstrated in offspring on growth, appearance, or behavior. No treatment related effects were observed at gross or microscopic pathology. The NOAEL in this study was greater than 1500 ppm. The data indicate that 2,2-dimethyloctanoic acid is not a reproductive toxicant. In a one-generation reproductive toxicity range-finding study, rats were exposed to isooctanoic acid at dietary levels of 1000, 5000, 75000, or 10,000 ppm. In the parental generation, there were no treatment-related effects on survival, organ weights, reproductive function, or sperm indices. In the offspring, there were no treatment-related effects on survival, developmental landmarks, or any significant findings in postmortem evaluations. Statistically significant decreases in the mean offspring body weights of males and females were observed at 10,000 ppm. The high dose also resulted in a suppression of body weight gain in the adult females. Thus, the NOAEL for both parental and offspring effects was 7500 ppm. A one-generation reproduction study was also conducted on isononanoic acid. Rats were administered the test material in the diet at doses of 0, 600, 1200, 2500, and 5000 ppm. There were no treatment-related effects observed on mating, fertility, fecundity, or gestation indices or during sperm analysis. Evidence of maternal toxicity included decreased body weights and increased liver weights in the 2500 and 5000 ppm dose groups. In the offspring, reduced survival indices were noted in the 5000 ppm dose group, and reduced body weights were noted in the 2500 and 5000 ppm dose groups. The NOAEL for both maternal and offspring effects in this study was 1200 ppm. In summary, these data prove adequate to support a screening level assessment of the reproductive toxicity of neoacids C5-C28. Furthermore, these data indicate that neoacids C5-C28 have a low order of reproductive toxicity. **Genotoxicity:** There are no structural alerts to suggest that neoacids C5-C28 are likely to be genotoxic. The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
BUTYLACID PHOSPHATE	The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function. Alkyl esters of phosphoric acid exhibit a low to moderate acute toxicity and metabolised. From studies done on mice, they are not likely to cause gene damage or affect reproduction. However, 2-ethylhexanoic acid produced an effect on newborn rats at high doses to the pregnant female.
MALEIC ANHYDRIDE	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested. Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Some people may be genetically more prone than others, and exposure to other irritants may aggravate symptoms. Allergy causing activity is due to interactions with proteins. Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema. Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure.
HYDROCARBONS, C9-11, N-ALKANES, ISOALKANES, CYCLICS, <2% AROMATICS & IRON 2-ETHYLHEXANOATE & 3,5,5-TRIMETHYLHEXANOIC ACID & BUTYLACID PHOSPHATE	No significant acute toxicological data identified in literature search.
3,5,5-TRIMETHYLHEXANOIC ACID & BUTYLACID PHOSPHATE	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.
3,5,5-TRIMETHYLHEXANOIC ACID & BUTYLACID PHOSPHATE & MALEIC ANHYDRIDE	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.

Acute Toxicity	✗	**Carcinogenicity**	✓
Skin Irritation/Corrosion	✓	**Reproductivity**	✗
Serious Eye Damage/Irritation	✓	**STOT - Single Exposure**	✓
Respiratory or Skin sensitisation	✗	**STOT - Repeated Exposure**	✗
Mutagenicity	✓	**Aspiration Hazard**	✓

Legend: ✗ ***– Data either not available or does not fill the criteria for classification***
✓ ***– Data available to make classification***

Continued...

SECTION 12 Ecological information

Toxicity

#J02260 JLM DPF Refill Fluid	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	Not Available	Not Available	Not Available	Not Available	Not Available

hydrocarbons, C9-11, n-alkanes, isoalkanes, cyclics, <2% aromatics	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	EC50	72h	Algae or other aquatic plants	>100mg/l	2
	NOEC(ECx)	504h	Crustacea	0.011mg/l	2

iron 2-ethylhexanoate	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	LC50	96h	Fish	>100mg/l	2
	EC50	72h	Algae or other aquatic plants	49.3mg/l	2
	EC50	48h	Crustacea	85.4mg/l	2
	NOEC(ECx)	504h	Crustacea	18mg/l	2

3,5,5-trimethylhexanoic acid	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	EC50	72h	Algae or other aquatic plants	51mg/l	2
	LC50	96h	Fish	122mg/l	2
	NOEC(ECx)	24h	Fish	5mg/l	2
	EC50	48h	Crustacea	68mg/l	2

butylacid phosphate	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	LC50	96h	Fish	>100mg/l	2
	EC50	72h	Algae or other aquatic plants	64.6mg/l	2
	EC50	48h	Crustacea	>100mg/l	2
	EC10(ECx)	72h	Algae or other aquatic plants	38.1mg/l	2

maleic anhydride	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	ErC50	72h	Algae or other aquatic plants	29mg/l	1
	EC50	72h	Algae or other aquatic plants	29mg/l	1
	LC50	96h	Fish	75mg/l	2
	EC50	48h	Crustacea	42.81mg/l	2
	NOEC(ECx)	504h	Crustacea	10mg/l	1

Legend:	***Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data***

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
3,5,5-trimethylhexanoic acid	LOW	LOW
butylacid phosphate	HIGH	HIGH
maleic anhydride	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
3,5,5-trimethylhexanoic acid	LOW (LogKOW = 3.3399)
butylacid phosphate	LOW (LogKOW = 0.7595)
maleic anhydride	LOW (LogKOW = 1.6187)

Mobility in soil

Ingredient	Mobility
3,5,5-trimethylhexanoic acid	LOW (Log KOC = 26.92)
butylacid phosphate	LOW (Log KOC = 12.15)
maleic anhydride	HIGH (Log KOC = 1)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	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

Continued...

- 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.
- Treat and neutralise at an approved treatment plant. Treatment should involve: Neutralisation with soda-ash or soda-lime followed by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus
- Decontaminate empty containers with 5% aqueous sodium hydroxide or soda ash, followed by water. Observe all label safeguards until containers are cleaned and destroyed.

SECTION 14 Transport information

Labels Required



Marine Pollutant	NO
HAZCHEM	2X

Land transport (ADG)

14.1. **UN number or ID number**	1760
14.2. **UN proper shipping name**	CORROSIVE LIQUID, N.O.S. (contains 3,5,5-trimethylhexanoic acid and butylacid phosphate)
14.3. **Transport hazard class(es)**	Class: 8 Subsidiary Hazard: Not Applicable
14.4. **Packing group**	III
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Special provisions: 223 274 Limited quantity: 5 L

Air transport (ICAO-IATA / DGR)

14.1. **UN number**	1760
14.2. **UN proper shipping name**	Corrosive liquid, n.o.s. * (contains 3,5,5-trimethylhexanoic acid and butylacid phosphate)
14.3. **Transport hazard class(es)**	ICAO/IATA Class: 8 ICAO / IATA Subsidiary Hazard: Not Applicable ERG Code: 8L
14.4. **Packing group**	III
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Special provisions: A3 A803 Cargo Only Packing Instructions: 856 Cargo Only Maximum Qty / Pack: 60 L Passenger and Cargo Packing Instructions: 852 Passenger and Cargo Maximum Qty / Pack: 5 L Passenger and Cargo Limited Quantity Packing Instructions: Y841 Passenger and Cargo Limited Maximum Qty / Pack: 1 L

Sea transport (IMDG-Code / GGVSee)

14.1. **UN number**	1760
14.2. **UN proper shipping name**	CORROSIVE LIQUID, N.O.S. (contains 3,5,5-trimethylhexanoic acid and butylacid phosphate)
14.3. **Transport hazard class(es)**	IMDG Class: 8 IMDG Subsidiary Hazard: Not Applicable
14.4. **Packing group**	III
14.5 **Environmental hazard**	Not Applicable
	EMS Number: F-A , S-B

Continued...

14.6. **Special precautions for user**		
	Special provisions	223 274
	Limited Quantities	5 L

14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
hydrocarbons, C9-11, n-alkanes, isoalkanes, cyclics, <2% aromatics	Not Available
iron 2-ethylhexanoate	Not Available
3,5,5-trimethylhexanoic acid	Not Available
butylacid phosphate	Not Available
maleic anhydride	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
hydrocarbons, C9-11, n-alkanes, isoalkanes, cyclics, <2% aromatics	Not Available
iron 2-ethylhexanoate	Not Available
3,5,5-trimethylhexanoic acid	Not Available
butylacid phosphate	Not Available
maleic anhydride	Not Available

SECTION 15 Regulatory information

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

hydrocarbons, C9-11, n-alkanes, isoalkanes, cyclics, <2% aromatics is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)
Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1: Carcinogenic to humans
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

iron 2-ethylhexanoate is found on the following regulatory lists

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 2
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 4
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6
Australian Inventory of Industrial Chemicals (AIIC)

3,5,5-trimethylhexanoic acid is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)

butylacid phosphate is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)

maleic anhydride is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5
Australian Inventory of Industrial Chemicals (AIIC)

Additional Regulatory Information

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (hydrocarbons, C9-11, n-alkanes, isoalkanes, cyclics, <2% aromatics; 3,5,5-trimethylhexanoic acid; butylacid phosphate; maleic anhydride)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes

Continued...

National Inventory	Status
Philippines - PICCS	Yes
USA - TSCA	No (butylacid phosphate)
Taiwan - TCSI	Yes
Mexico - INSQ	No (iron 2-ethylhexanoate; 3,5,5-trimethylhexanoic acid; butylacid phosphate)
Vietnam - NCI	Yes
Russia - FBEPH	No (iron 2-ethylhexanoate; butylacid phosphate)
Legend:	***Yes = All CAS declared ingredients are on the inventory*** ***No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.***

SECTION 16 Other information

Revision Date	23/05/2024
Initial Date	23/05/2024

SDS Version Summary

Version	Date of Update	Sections Updated
2.1	23/05/2024	Physical and chemical properties - Appearance

Other information

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.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

- PC—TWA: Permissible Concentration-Time Weighted Average
- PC—STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit。
- IDLH: Immediately Dangerous to Life or Health Concentrations
- ES: Exposure Standard
- OSF: Odour Safety Factor
- NOAEL: No Observed Adverse Effect Level
- LOAEL: Lowest Observed Adverse Effect Level
- TLV: Threshold Limit Value
- LOD: Limit Of Detection
- OTV: Odour Threshold Value
- BCF: BioConcentration Factors
- BEI: Biological Exposure Index
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration

- AIIC: Australian Inventory of Industrial Chemicals
- DSL: Domestic Substances List
- NDSL: Non-Domestic Substances List
- IECSC: Inventory of Existing Chemical Substance in China
- EINECS: European INventory of Existing Commercial chemical Substances
- ELINCS: European List of Notified Chemical Substances
- NLP: No-Longer Polymers
- ENCS: Existing and New Chemical Substances Inventory
- KECI: Korea Existing Chemicals Inventory
- NZIoC: New Zealand Inventory of Chemicals
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- TSCA: Toxic Substances Control Act
- TCSI: Taiwan Chemical Substance Inventory
- INSQ: Inventario Nacional de Sustancias Químicas
- NCI: National Chemical Inventory
- FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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TEL (+61 3) 9572 4700.