



Bike Shine Gloss Aerosol GRiTT by Leatt

Part Number:
Version No: **1.22**
Safety Data Sheet according to Work Health and Safety Regulations (Hazardous Chemicals) 2023 and ADG requirements

Chemwatch Hazard Alert Code: **4**

Initial Date: **27/02/2026**
Revision Date: **18/04/2026**
Print Date: **18/04/2026**
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SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	Bike Shine Gloss Aerosol GRiTT by Leatt
Synonyms	Not Available
Proper shipping name	AEROSOLS
Other means of identification	Not Available

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

Relevant identified uses	Shining agent
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Details of the manufacturer or importer of the safety data sheet

Registered company name	Bike Corp.
Address	Moorabin Airport, Victoria Australia 3194, AUSTRALIA
Telephone	+61 3 9518 5400
Fax	Not Available
Website	bikecorp.com.au
Email	sales@bikecorp.com.au

Emergency telephone number

Association / Organisation	Poisons Information Centre
Emergency telephone number(s)	131 126
Other emergency telephone number(s)	Chemwatch 1800 951 288

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	4	
Toxicity	2	
Body Contact	2	
Reactivity	1	
Chronic	0	

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

Poisons Schedule	Not Applicable
Classification ^[1]	Aerosols, Hazard Category 1, Aspiration Hazard Category 1, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2A, Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, Hazardous to the Aquatic Environment Long-Term Hazard Category 2
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)	
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SIGNAL WORD **DANGER**

Hazard statement(s)

H222+H229	Extremely flammable aerosol. Pressurized container: may burst if heated.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.
AUH044	Risk of explosion if heated under confinement.

Precautionary statement(s) Prevention	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P271	Use only outdoors or in a well-ventilated area.
P261	Avoid breathing mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P264	Wash all exposed external body areas thoroughly after handling.

Precautionary statement(s) Response	
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider.
P331	Do NOT induce vomiting.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.
P391	Collect spillage.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

Precautionary statement(s) Storage	
P405	Store locked up.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
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.
No further product hazard information.	

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances
See section below for composition of Mixtures

Mixtures		
CAS No	%[weight]	Name
106-97-8.	20-40	butane
74-98-6	< 10	propane
102782-92-3	< 3	dimethylsiloxane, 3-[(2-aminoethyl)propyl], methoxylated
110-82-7	< 2	cyclohexane
122-40-7	< 0.3	alpha-amylcinnamaldehyde
100-52-7	< 0.3	benzaldehyde
123-92-2	< 0.1	iso-amyl acetate
128-37-0	< 0.02	2,6-di-tert-butyl-4-methylphenol
64742-49-0	40-60	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics

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 aerosols come in contact with the eyes: • Immediately hold the eyelids apart and flush the eye continuously for at least 15 minutes with fresh running water. • Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. • Transport to hospital or doctor without delay. • Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

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Skin Contact	If solids or aerosol mists are deposited upon the skin: • Flush skin and hair with running water (and soap if available). • Remove any adhering solids with industrial skin cleansing cream. • DO NOT use solvents. • Seek medical attention in the event of irritation.
Inhalation	If aerosols, fumes or combustion products are inhaled: • Remove to fresh air. • 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. • If breathing is shallow or has stopped, ensure clear airway and apply resuscitation, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. • Transport to hospital, or doctor.
Ingestion	Not considered a normal route of entry. • 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.

For petroleum distillates

- In case of ingestion, gastric lavage with activated charcoal can be used promptly to prevent absorption - decontamination (induced emesis or lavage) is controversial and should be considered on the merits of each individual case; of course the usual precautions of an endotracheal tube should be considered prior to lavage, to prevent aspiration.
 - Individuals intoxicated by petroleum distillates should be hospitalized immediately, with acute and continuing attention to neurologic and cardiopulmonary function.
 - Positive pressure ventilation may be necessary.
 - Acute central nervous system signs and symptoms may result from large ingestions of aspiration-induced hypoxia.
 - After the initial episode, individuals should be followed for changes in blood variables and the delayed appearance of pulmonary oedema and chemical pneumonitis. Such patients should be followed for several days or weeks for delayed effects, including bone marrow toxicity, hepatic and renal impairment. Individuals with chronic pulmonary disease will be more seriously impaired, and recovery from inhalation exposure may be complicated.
 - Gastrointestinal symptoms are usually minor and pathological changes of the liver and kidneys are reported to be uncommon in acute intoxications.
 - Chlorinated and non-chlorinated hydrocarbons may sensitize the heart to epinephrine and other circulating catecholamines so that arrhythmias may occur. Careful consideration of this potential adverse effect should precede administration of epinephrine or other cardiac stimulants and the selection of bronchodilators.
- Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

SMALL FIRE:

- Water spray, dry chemical or CO2

LARGE FIRE:

- Water spray or fog.

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
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Advice for firefighters

Fire Fighting	• Alert Fire Brigade and tell them location and nature of hazard. • May be violently or explosively reactive. • Wear breathing apparatus plus protective gloves. • Prevent, by any means available, spillage from entering drains or water course. • If safe, switch off electrical equipment until vapour fire hazard removed. • Use water delivered as a fine spray to control fire and cool adjacent 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	• Liquid and vapour are flammable. • Moderate fire hazard when exposed to heat or flame. • Vapour forms an explosive mixture with air. • Moderate explosion hazard when exposed to heat or flame. • Vapour may travel a considerable distance to source of ignition. • Heating may cause expansion or decomposition leading to violent rupture of containers. • Aerosol cans may explode on exposure to naked flame. • Rupturing containers may rocket and scatter burning materials. • Hazards may not be restricted to pressure effects. • May emit acrid, poisonous or corrosive fumes. • On combustion, may emit toxic fumes of carbon monoxide (CO). Combustion products include: • carbon monoxide (CO) • carbon dioxide (CO2) • other pyrolysis products typical of burning organic material. Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions.
HAZCHEM	Not Applicable

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	• Clean up all spills immediately. • Avoid breathing vapours and contact with skin and eyes.
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	• Wear protective clothing, impervious gloves and safety glasses. • Shut off all possible sources of ignition and increase ventilation. • Wipe up. • If safe, damaged cans should be placed in a container outdoors, away from all ignition sources, until pressure has dissipated. • Undamaged cans should be gathered and stowed safely.
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. • 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. • Clear area of all unprotected personnel and move upwind. • Alert Emergency Authority and advise them of the location and nature of hazard. • May be violently or explosively reactive. • Wear full body clothing with breathing apparatus. • Prevent by any means available, spillage from entering drains and water-courses. • Consider evacuation. • Shut off all possible sources of ignition and increase ventilation. • No smoking or naked lights within area. • Use extreme caution to prevent violent reaction. • Stop leak only if safe to do so. • Water spray or fog may be used to disperse vapour. • DO NOT enter confined space where gas may have collected. • Keep area clear until gas has dispersed. • Remove leaking cylinders to a safe place. • Fit vent pipes. Release pressure under safe, controlled conditions • Burn issuing gas at vent pipes. • DO NOT exert excessive pressure on valve; DO NOT attempt to operate damaged valve. • Clear area of personnel and move upwind. • Alert Fire Brigade and tell them location and nature of hazard. • May be violently or explosively reactive. • Wear breathing apparatus plus protective gloves. • Prevent, by any means available, spillage from entering drains or water courses • 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. • Absorb or cover spill with sand, earth, inert materials or vermiculite. • If safe, damaged cans should be placed in a container outdoors, away from ignition sources, until pressure has dissipated. • Undamaged cans should be gathered and stowed safely. • Collect residues and seal in labelled drums for disposal.

Reference to other sections

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. Radon and its radioactive decay products are hazardous if inhaled or ingested • Avoid skin contact, including inhalation. • Wear protective clothing when risk of exposure occurs. • Use in a well-ventilated area. • Prevent concentration in hollows and sumps. • DO NOT enter confined spaces until atmosphere has been checked. • Avoid smoking, naked lights or ignition sources. • Avoid contact with incompatible materials. • When handling, DO NOT eat, drink or smoke. • DO NOT incinerate or puncture aerosol cans. • DO NOT spray directly on humans, exposed food or food utensils. • Avoid physical damage to containers. • Always wash hands with soap and water after handling. • Work clothes should be laundered separately. • Use good occupational work practice. • Observe manufacturer's storage and handling recommendations contained within this SDS. • Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained. • DO NOT allow clothing wet with material to stay in contact with skin
Other information	• Keep dry to avoid corrosion of cans. Corrosion may result in container perforation and internal pressure may eject contents of can • Store in original containers in approved flammable liquid storage area. • DO NOT store in pits, depressions, basements or areas where vapours may be trapped. • No smoking, naked lights, heat or ignition sources. • Keep containers securely sealed. Contents under pressure. • Store away from incompatible materials. • Store in a cool, dry, well ventilated area. • Avoid storage at temperatures higher than 40 deg C. • Store in an upright position. • Protect containers against physical damage. • Check regularly for spills and leaks.

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• Observe manufacturer’s storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container	- Glass container is suitable for laboratory quantities - Aerosol dispenser. - Check that containers are clearly labelled.
Storage incompatibility	Low molecular weight alkanes are a type of chemical compounds that can be found in gases or liquids. These alkanes: - Can cause a dangerous reaction with strong oxidizers, chlorine, chlorine dioxide, and dioxygenyl tetrafluoroborate when there is oxygen and heat present. - Are incompatible with halogens. - Can create static charges due to their low conductivity, leading to an accumulation of static charge. - Should be kept away from flames and ignition sources. Low molecular alkanes can cause explosions when combined with chlorine or ethanol over activated carbon at high temperatures. The risk of explosion can be reduced by adding carbon dioxide to the alkane. When liquid chlorine is injected into ethane at specific temperatures and pressures, the reaction becomes very violent if ethylene is also present. Mixtures of alkanes like methane or ethane prepared at extremely low temperatures (-196°C) exploded when the temperature was increased to -78°C. Additionally, the addition of nickel carbonyl to a mixture of n-butane and oxygen can cause an explosion at certain temperatures. Alkanes will react with steam in the presence of a nickel catalyst to give hydrogen. Butane / isobutane: - reacts violently with strong oxidisers, acetylene, halogens, and nitrous oxides - does not mix with chlorine dioxide, nitric acid and some plastics - may generate electrostatic charges, due to low conductivity, which may ignite vapours. Store butane well away from nickel carbonyl in the presence of oxygen between 20-40°C Propane: - reacts violently with strong oxidisers, barium peroxide, chlorine dioxide, dichlorine oxide, fluorine etc. - Dissolves some plastics, rubbers, and coatings - may accumulate static charges which may ignite its vapours - Avoid reaction with oxidising agents - Compressed gases may contain a large amount of kinetic energy over and above that potentially available from the energy of reaction produced by the gas in chemical reaction with other substances


+


X


+


X


+


+


+

X – Must not be stored together
O – May be stored together with specific preventions
+ – May be stored together

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)
INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Workplace exposure limits for airborne contaminants (WEL list) (Effective from 1 Dec ember 2026) - Appendix A - Wo rkplace Exposure Limits	Hydrocarbons, C7, n-alka nes, isoalkanes, cyclics	Heptane (n-heptane)	400 ppm / 1640 m g/m3	2050 mg/m3 / 500 ppm	Not Available	Not Available
Australia Exposure Standards	Hydrocarbons, C7, n-alka nes, isoalkanes, cyclics	Heptane (n-Heptane)	400 ppm / 1640 m g/m3	2050 mg/m3 / 500 ppm	Not Available	Not Available
Australia Workplace exposure li mits for airborne contaminants (WEL list) (Effective from 1 Dec ember 2026) - Appendix A - Wo rkplace Exposure Limits	butane	Butane	800 ppm / 1900 m g/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	butane	Butane	800 ppm / 1900 m g/m3	Not Available	Not Available	Not Available
Australia Workplace exposure li mits for airborne contaminants (WEL list) (Effective from 1 Dec ember 2026) - Appendix A - Wo rkplace Exposure Limits	cyclohexane	Cyclohexane	100 ppm / 350 m g/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	cyclohexane	Cyclohexane	100 ppm / 350 m g/m3	1050 mg/m3 / 300 ppm	Not Available	Not Available
Australia Exposure Standards	iso-amyl acetate	Isoamyl acetate	50 ppm / 270 mg/ m3	541 mg/m3 / 100 ppm	Not Available	Not Available
Australia Workplace exposure li mits for airborne contaminants (WEL list) (Effective from 1 Dec ember 2026) - Appendix A - Wo rkplace Exposure Limits	iso-amyl acetate	Amyl acetate (iso-, n-, sec- isomers)	50 ppm / 270 mg/ m3	541 mg/m3 / 100 ppm	Not Available	Not Available
Australia Workplace exposure li mits for airborne contaminants (WEL list) (Effective from 1 Dec	2,6-di-tert-butyl-4-methylp henol	2,6-Di-tert-butyl-p-cre sol	10 mg/m3	Not Available	Not Available	Not Available

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ember 2026) - Appendix A - Workplace Exposure Limits						
Australia Exposure Standards	2,6-di-tert-butyl-4-methylphenol	2,6-Di-tert-butyl-p-cresol	10 mg/m3	Not Available	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	TEEL-1	TEEL-2	TEEL-3
Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	1,000 mg/m3	11,000 mg/m3	66,000 mg/m3
Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	500 ppm	830 ppm	5000* ppm
butane	Not Available	Not Available	Not Available
propane	Not Available	Not Available	Not Available
cyclohexane	300 ppm	1700* ppm	10000** ppm
benzaldehyde	4 ppm	9.9 ppm	59 ppm
iso-amyl acetate	100 ppm	500 ppm	3000* ppm

OCCUPATIONAL EXPOSURE BANDING

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
dimethylsiloxane, 3-[(2-aminoethyl)propyl], methoxylated	C	> 1 to ≤ 10 parts per million (ppm)
alpha-amylicinnamaldehyde	D	> 0.1 to ≤ 1 ppm
benzaldehyde	D	> 0.1 to ≤ 1 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	- Safety glasses with side shields. - Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent] - 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]. When handling very small quantities of the material eye protection may not be required. For laboratory, larger scale or bulk handling or where regular exposure in an occupational setting occurs: - Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent] - Face shield. 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]. - Close fitting gas tight goggles DO NOT wear contact lenses.

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	Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1337.1, EN166 or national equivalent]
Skin protection	See Hand protection below
Hands/feet protection	NOTE: - The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. - Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. - Rubber gloves (nitrile or low-protein, powder-free latex, latex/ nitrile). Employees allergic to latex gloves should use nitrile gloves in preference. - Double gloving should be considered. - PVC gloves. - Change gloves frequently and when contaminated, punctured or torn. - Wash hands immediately after removing gloves. - Protective shoe covers. [AS/NZS 2210] - Head covering. - No special equipment needed when handling small quantities. OTHERWISE: - For potentially moderate exposures: - Wear general protective gloves, eg. light weight rubber gloves. - For potentially heavy exposures: - Wear chemical protective gloves, eg. PVC. and safety footwear.
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. - For quantities up to 500 grams a laboratory coat may be suitable. - For quantities up to 1 kilogram a disposable laboratory coat or coverall of low permeability is recommended. Coveralls should be buttoned at collar and cuffs. - For quantities over 1 kilogram and manufacturing operations, wear disposable coverall of low permeability and disposable shoe covers. - For manufacturing operations, air-supplied full body suits may be required for the provision of advanced respiratory protection. - Eye wash unit. - Ensure there is ready access to an emergency shower. - For Emergencies: Vinyl suit - The clothing worn by process operators insulated from earth may develop static charges far higher (up to 100 times) than the minimum ignition energies for various flammable gas-air mixtures. This holds true for a wide range of clothing materials including cotton. - Avoid dangerous levels of charge by ensuring a low resistivity of the surface material worn outermost. - BREThERICK: Handbook of Reactive Chemical Hazards. No special equipment needed when handling small quantities. OTHERWISE: - Overalls. - Skin cleansing cream. - Eyewash unit. - Do not spray on hot surfaces.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the: **"Forsberg Clothing Performance Index"**.
The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:
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Material	CPI
BUTYL	C
BUTYL/NEOPRENE	C
HYPALON	C
NATURAL RUBBER	C
NEOPRENE	C
NITRILE	C
NITRILE+PVC	C
PE	C
PE/EVAL/PE	C
PVA	C
PVC	C
TEFLON	C
VITON	C

* CPI - Chemwatch Performance Index

Respiratory protection

Type AX-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	AX-AUS P2	-	AX-PAPR-AUS / Class 1 P2
up to 50 x ES	-	AX-AUS / Class 1 P2	-
up to 100 x ES	-	AX-2 P2	AX-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

A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

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
- Generally not applicable.

Aerosols, in common with most vapours/ mists, should never be used in confined spaces without adequate ventilation. Aerosols, containing agents designed to enhance or mask smell, have triggered allergic reactions in predisposed individuals.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Not Available		
Physical state	Spray Aerosol	Relative density (Water = 1)	Not Available
Odour	Characteristic	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	HIGHLY FLAMMABLE.	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	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
Heat of Combustion (kJ/g)	Not Available	Ignition Distance (cm)	Not Available
Flame Height (cm)	Not Available	Flame Duration (s)	Not Available
Enclosed Space Ignition Time Equivalent (s/m3)	Not Available	Enclosed Space Ignition Deflagration Density (g/m3)	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	• Elevated temperatures. • Presence of open flame. • Product is considered stable. • Hazardous polymerisation will not occur.
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

a) Acute Toxicity	Based on available data, the classification criteria are not met.
b) Skin Irritation/Corrosion	There is sufficient evidence to classify this material as skin corrosive or irritating.
c) Serious Eye Damage/Irritation	There is sufficient evidence to classify this material as eye damaging or irritating
d) Respiratory or Skin sensitisation	Based on available data, the classification criteria are not met.
e) Mutagenicity	Based on available data, the classification criteria are not met.
f) Carcinogenicity	Based on available data, the classification criteria are not met.
g) Reproductivity	Based on available data, the classification criteria are not met.
h) STOT - Single Exposure	There is sufficient evidence to classify this material as toxic to specific organs through single exposure
i) STOT - Repeated Exposure	Based on available data, the classification criteria are not met.
j) Aspiration Hazard	There is sufficient evidence to classify this material as an aspiration hazard
Inhaled	Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful. The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.

Bike Shine Gloss Aerosol GRITT by Leatt

	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. Isobutane produces a dose dependent action and at high concentrations may cause numbness, suffocation, exhilaration, dizziness, headache, nausea, confusion, incoordination and unconsciousness in severe cases. The paraffin gases are practically not harmful at low doses. Higher doses may produce reversible brain and nerve depression and irritation. Inhalation of toxic gases may cause: • Central Nervous System effects including depression, headache, confusion, dizziness, stupor, coma and seizures; • respiratory: acute lung swellings, shortness of breath, wheezing, rapid breathing, other symptoms and respiratory arrest; • heart: collapse, irregular heartbeats and cardiac arrest; • gastrointestinal: irritation, ulcers, nausea and vomiting (may be bloody), and abdominal pain. Inhalation, by humans, of 1000 parts per million (0.1%) heptanes for 6 minutes was associated with slight dizziness; inhalation of higher concentrations for shorter periods, resulted in vertigo and inco-ordination, and hilarity. Central nervous system involvement occurs very early, even before mucous membrane irritation. Animal testing showed exposure to 1.5-2% for 30 minutes may be fatal. Brief exposure (4 minutes) to 0.5% caused nausea, loss of appetite, and a "gasoline taste" that persisted for several hours after exposure ended. Nerve damage can be caused by some non-ring hydrocarbons. Symptoms are temporary, and include weakness, tremors, increased saliva, some convulsions, excessive tears with discolouration and inco-ordination lasting up to 24 hours. Material is highly volatile and may quickly form a concentrated atmosphere in confined or unventilated areas. The vapour may displace and replace air in breathing zone, acting as a simple asphyxiant. This may happen with little warning of overexposure. 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. WARNING: Intentional misuse by concentrating/inhaling contents may be lethal. Exposure to hydrocarbons may result in irregularity of heart beat. Symptoms of moderate poisoning may include dizziness, headache, nausea.
Ingestion	Accidental ingestion of the material may be damaging to the health of the individual. Not normally a hazard due to physical form of product. Considered an unlikely route of entry in commercial/industrial environments Isoparaffinic hydrocarbons cause temporary lethargy, weakness, inco-ordination and diarrhoea. Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733) Chronic inhalation or skin exposure to n-hexane may cause damage to nerve ends in extremities, e.g. finger, toes with loss of sensation.
Skin Contact	This material can cause inflammation of the skin on contact in some persons. The material may accentuate any pre-existing dermatitis condition Skin exposure to isoparaffins may produce slight to moderate irritation in animals and humans. Rare sensitisation reactions in humans have occurred. Spray mist may produce discomfort 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. 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.
Eye	This material causes serious eye irritation. Instillation of isoparaffins into rabbit eyes produces only slight irritation. Not considered to be a risk because of the extreme volatility of the gas.
Chronic	Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. There is ample evidence that this material can be regarded as being able to cause cancer in humans based on experiments and other information. 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. Constant or exposure over long periods to mixed hydrocarbons may produce stupor with dizziness, weakness and visual disturbance, weight loss and anaemia, and reduced liver and kidney function. Skin exposure may result in drying and cracking and redness of the skin. Main route of exposure to the gas in the workplace is by inhalation. Chronic inhalation or skin exposure to n-hexane may cause damage to nerve ends in extremities, e.g. finger, toes with loss of sensation.

Bike Shine Gloss Aerosol GRITT by Leatt	TOXICITY	IRRITATION
	Not Available	Not Available
Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	TOXICITY	IRRITATION
	dermal (rat) LD50: 3.35 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1]
	Inhalation (Rat) LC50: 0.26 mg/L4h ^[2]	Skin: adverse effect observed (irritating) ^[1]
butane	TOXICITY	IRRITATION
	Oral (Rat) LD50: 16.75 mg/kg ^[2]	Skin: no adverse effect observed (not irritating) ^[1]
	Inhalation (Rat) LC50: 658 mg/l4h ^[2]	Eye: no adverse effect observed (not irritating) ^[1]
propane	TOXICITY	IRRITATION
	Inhalation (Rat) LC50: 364726.819 ppm4h ^[2]	Skin: no adverse effect observed (not irritating) ^[1]
dimethylsiloxane, 3-[(2-aminoethyl)propyl], methoxylated	TOXICITY	IRRITATION
	Inhalation (Rat) LC50: 364726.819 ppm4h ^[2]	Not Available
cyclohexane	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[2]	Eye (Rodent - rabbit): 0.1mL
	Oral (Rat) LD50: >2000 mg/kg ^[2]	Eye (Rodent - rabbit): 0.1mL - Severe
		Eye: no adverse effect observed (not irritating) ^[1]
		Skin (Rodent - rabbit): 1548mg/2D (intermittent)
		Skin: adverse effect observed (irritating) ^[1]

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		Skin: no adverse effect observed (not irritating) ^[1]
alpha-amylicinnamaldehyde	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >2000 mg/kg ^[1]	Eye: no adverse effect observed (not irritating) ^[1]
	Oral (Rat) LD50: 3730 mg/kg ^[2]	Skin (Human): 1%/2D
		Skin (Rodent - guinea pig): 100mg/24H - Moderate
		Skin (Rodent - guinea pig): 5%/2W - Mild
		Skin (Rodent - rabbit): 100mg/24H - Severe
		Skin: no adverse effect observed (not irritating) ^[1]
benzaldehyde	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >1250 mg/kg ^[1]	Eye: adverse effect observed (irritating) ^[1]
	Oral (Mouse) LD50: 28 mg/kg ^[2]	Skin (Rodent - rabbit): 500mg/24H - Moderate
		Skin: adverse effect observed (irritating) ^[1]
iso-amyl acetate	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >5000 mg/kg ^[1]	Eye: no adverse effect observed (not irritating) ^[1]
	Oral (Rat) LD50: 16600 mg/kg ^[2]	Skin (Rodent - rabbit): 10mg/24H - Mild
		Skin: no adverse effect observed (not irritating) ^[1]
2,6-di-tert-butyl-4-methylphenol	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[1]	Eye (Rodent - rabbit): 100mg/24H - Moderate
	Oral (Rat) LD50: 890 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1]
		Skin (Human): 500mg/48H - Mild
		Skin (Rodent - rabbit): 500mg/48H - Moderate
		Skin: no adverse effect observed (not 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	
propane	No significant acute toxicological data identified in literature search.	
cyclohexane	Bacteria mutagen	
dimethylsiloxane, 3-[(2-aminoethyl)propyl], methoxylated	Irritating to rabbits on cutaneous application * By analogy with other product, this material is considered to be irritating to the eyes * Rhone-Poulenc MSDS Siloxanes may impair liver and hormonal function, as well as the lung and kidney. They have not been found to be irritating to the skin and eyes. They may potentially cause cancer (tumours of the womb in females) and may cause impaired fertility or infertility.	
alpha-amylicinnamaldehyde	Animal testing suggests that the toxicity through swallowing cinnamyl aldehyde derivatives is very low. The potential for toxicity through skin exposure is similarly low. Cinnamaldehyde and its alkyl-substituted derivatives do not directly cause mutations or genetic damage. However, animal testing suggests that they may result in poor development of the skull and kidney in the foetus.	
	The material may cause severe 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. Repeated exposures may produce severe ulceration. These substances are generally regarded as safe. Cinnamyl derivatives are natural components of certain foods, and are found in greater amounts there than in flavouring substances. They are rapidly absorbed, broken down and eliminated in the human body, and do not have significant potential to cause genetic toxicity and mutations.	
benzaldehyde	Somnolence , tremor, coma, ulceration of the small intestine, increased urine volume recorded. For certain benzyl derivatives: The members of this group are rapidly absorbed through the gastrointestinal tract, metabolised primarily in the liver, and excreted primarily in the urine either unchanged or as conjugates of benzoic acid derivatives. At high dose levels, gut micro-organisms may act to produce minor amounts of breakdown products. However, no adverse effects have been reported even at repeated high doses. Similarly, no effects were observed on reproduction, foetal development and tumour potential. This is a member or analogue of a group of benzyl derivatives generally regarded as safe (GRAS), based partly on their self-limiting properties as flavouring substances in food. In humans and other animals, they are rapidly absorbed, broken down and excreted, with a wide safety margin. They also lack significant potential to cause genetic toxicity and mutations. The intake of benzyl derivatives as natural components of traditional foods is actually higher than the intake as intentionally added flavouring substances.	
	* Degussa SDS Effects such as behavioral changes, reduction in body weight gain, and decrement in body weight have been observed after long-term administration of BHT to mice and rats. Toxic effects may be attributed more to BHT metabolites than to their parent compound, only a few studies have focused on their carcinogenicity and toxicity, and not only on that of BHT. The metabolite BHT-QM (syn: 2,6-di-tert-butyl-1,4-methylene-2,5-cyclohexadien-1-one, CAS RN: 2607-52-5) is a very reactive compound which is considered to play a significant role in hepatotoxicity, pneumotoxicity, and skin tumor promotion in mice. In addition, it was reported that another quinone derivative, BHT-OH(t)QM (syn 2-tert-butyl-6-(2-hydroxy-tert-butyl-4-methylene-2,5-cyclohexadien-1-one, CAS RN: 124755-19-7), is chemically more reactive than BHT-QM, and it has been recognized as the principal metabolite responsible for lung tumor promotion activity of BHT in mice. BHT has been reported to exert prooxidant effects under certain conditions. Thus, when BHT was added in excess to a wheat seedling medium in aerobic conditions, an enhancement of the generation rate of superoxide anion was observed. This is a reactive particle that may damage cellular structures at high concentrations In addition, an increase in hepatic microsomal lipid peroxidation was observed in rats fed with diets containing 0.2% of BHT for 30 days. Due to this ability of BHT to exert prooxidant effects at high concentrations, it has been used to induce experimental models of oxidative stress in several animals and fungi in order to study the protective effects of other compounds. Quinone methide derivatives form adducts with several proteins, including enzymes that protect cells from oxidative stress; this prooxidant state can also lead to cell oxidative damage. It must be noted that relationships between chronic oxidative stress and tumor promotion are well known Some authors have reported that at high aeration rate, BHT can react with molecular oxygen rather than with the reactive oxygen species present, yielding BHT-phenoxyl radical and superoxide anion. In addition, the phenolic radical itself may undergo redox recycling which can be a critical factor depending on the reductant involved However, it has to be noted that BHT-phenoxyl radical has been reported to be relatively stable. Furthermore, the potential reactivity of BHT-derived metabolites should be taken into account; some studies reported that not only BHT but also its metabolites, such as BHT-Q and BHT-QM, can act as prooxidant. As BHT undergoes several reactions during biotransformation, a large number of intermediate metabolites have been identified. However, their nature and concentration depend on the environmental conditions and on the animal species. Although the changes undergone by BHT during in vivo digestion processes have not been studied, after submission of a fluid deep-frying fat containing BHT and BHT-QM to an in vitro gastrointestinal digestion model, both these were detected in the digested samples. These results indicate that BHT and its toxic metabolite could remain bioaccessible for intestinal absorption. Studies concerning BHT metabolism have shown that, unlike other synthetic antioxidants, BHT is a potent inducer of	

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the microsomal monooxygenase system and its major route of degradation is oxidation catalyzed by cytochrome . Studies have reported potential toxicity derived from the ingestion or administration of BHT. As for acute oral toxicity, although this is considered low in animals, it must be noted that 2 clinical cases were reported in patients who suffered acute neurotoxicity and gastritis after ingesting a high dose of BHT (4 and 80 g without medical prescription) to cure recurrent genital herpes. Regarding short-term subchronic toxicity studies, it has been reported that BHT causes dose-related increase in the incidence and severity of toxic nephrosis in mice, nephrotoxicity and pneumotoxicity in rats, and in chicken a marked congestion of the liver and kidney, as well as diffuse enlargement of the liver with rounded borders and rupture with hemorrhaging . It has to be noted that the EFSA Panel (2012) pointed out certain inconsistencies in the findings obtained from the short-term and subchronic toxicity studies. Several genotoxicity studies on BHT concluded that BHT does not represent a genotoxic risk, because most of the studies carried out to that date had shown BHT was not able to induce mutations or to damage deoxyribonucleic acid (DNA). Nevertheless, it must be mentioned that other studies reported contrary results. The effect of BHT and 7 of its metabolites on *in vitro* DNA cleavage was studied and the metabolites BHT-Q (syn: 2,6-di-tert-butyl-2,5-cyclohexadiene-1,4-dione, CAS RN: 719-22-2), BHT-CHO (syn: 3,5-di-tert-butyl-4-hydroxybenzaldehyde, CAS RN: 1620-98-0 and BHT-OOH (syn: 2,6-di-tert-butyl-4-methyl-4-hydroperoxy-2,5-cyclohexadien-1-one, CAS RN: 6485-57-0) were able to cleave DNA.. The Panel on Food Additives and Nutrient Sources Added to Food of the European Food Safety Authority (EFSA) recognized that these positive genotoxicity results may be due to the prooxidative chemistry of BHT, which gives rise to reactive metabolites. Some studies addressed the carcinogenicity and chronic toxicity of BHT and its metabolites in rodents with contradictory results. Thus, mice-fed dietary BHT for a year developed marked hyperplasia of the hepatic bile ducts with an associated subacute cholangitis. Moreover, after 104 wk of administration of BHT, the formation of hepatocellular tumors in male mice was observed. After 10 months of feeding mice with a diet containing different amounts of BHT, an increased incidence of liver tumors in male, but not female, animals was also reported . However, in a similar study no evidence of the carcinogenicity of BHT administered to mice was observed. Studies performed in rats also reported dose-related increases in hepatocellular adenomas and carcinomas; nevertheless, other studies carried out with rats showed no consistent carcinogenic effects. Several studies have demonstrated the potential of BHT to act either as a tumor promotor or as a tumor suppressor, modulating the carcinogenicity of some well-known carcinogens. Barbara Nieva-Echevarria et al: Comprehensive reviews in Food Science and Food Safety, Vol 14, Dec 2014 <https://onlinelibrary.wiley.com/doi/10.1111/1541-4337.12121/pdf>

Laboratory (in vitro) and animal studies show, exposure to the material may result in a possible risk of irreversible effects, with the possibility of producing mutation.

for bridged alkyl phenols:

Acute toxicity: Acute oral and dermal toxicity data are available for all but two of the substances in the group. The data show that acute toxicity of these substances is low. The testing for acute toxicity spans five decades

Repeat dose toxicity: Repeat dose studies on the members of this category include both subchronic and chronic exposures. The liver is identified as the target organ in rats for all of the substances tested. NOAEL s or NOEL s in rats for 13- week studies ranged from 100 ppm (approximately 5 mg/kg/day) to 500 ppm (approximately 25 mg/kg/day) while NOAEL s or NOEL s in rats for chronic studies were the same, 25 mg/kg/day (500 ppm).

Reproductive toxicity: Evaluation of effects on reproduction for the bridged alkyl phenols is supplemented by histopathological data on male and female reproductive organs in repeated dose studies. The data on the effects of bridged alkyl phenols on reproduction and reproductive organs span the range of structures and molecular weights. While not all of the data for reproductive effects are from reproduction studies, microscopic evaluations of reproductive organs along with other short-term tests for reproductive effects provide adequate data to evaluate the effects of these bridged alkyl phenols on reproduction. It can be concluded that reproductive toxicity is low. Typically a two-year chronic feeding study provides data for 4,4'-thiobis-6-(t-butyl-m-cresol) (96-69-5). No adverse effects were noted on reproductive organs

Genotoxicity: Data from bacterial reverse mutation assays and *in vitro* and *in vivo* chromosome aberration studies were reviewed. Adequate bacterial gene mutation assays have been conducted with all of the category chemicals except two. Chromosome aberration studies, *in vitro* and/or *in vivo*, are available for all but two substances. The mutagenicity data span the range of structures and molecular weights and data can be bridged from other members of the group to meet any outstanding requirements. The weight of evidence for mutagenic potential for this category indicates these substances are not mutagenic.

Carcinogenicity: The mutagenicity data combined with the animal data plus the long historical use of BHT (128-37-0) indicate that the chemicals in this class are not expected to exhibit any significant potential to cause cancer. The weight of the evidence indicates that these chemicals are not genotoxic.

The Bridged Alkyl Phenols Category consists of a group of chemicals in which two molecules of mono or di-substituted alkyl (C1, C4, and/or C9) phenols are "bridged" or linked by a single atom (carbon or sulfur). The carbon atom linking the alkyl phenol groups contains hydrogen, propyl, or methyl substitutions. CAS No. 128-37-0 (BHT) is included in this category for data purposes because it is an alkyl phenol with a single carbon group such as the ones that link the phenol groups

The substance is classified by IARC as Group 3:

NOT classifiable as to its carcinogenicity to humans.

Evidence of carcinogenicity may be inadequate or limited in animal testing.

Data show that acute toxicity following oral and topical use of hindered phenols is low. They are not proven to cause mutations. However, long term use may affect the liver, thyroid, kidney and lymph nodes. Liver tumours have been reported.

Bike Shine Gloss Aerosol GRITT by Leatt & Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	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.
Bike Shine Gloss Aerosol GRITT by Leatt & 2,6-di-tert-butyl-4-methylphenol	ferroptosis inhibitors are currently being treated systemically rather than specifically, which may have multiple side effects. For example, Desferoxamin (DFO), an iron chelating agent, is known to have a short half-life, need long-term subcutaneous infusions, and provoke ototoxicity and neurotoxicity. Deferasirox (DFX), an iron chelator, is associated with gastrointestinal and renal toxicity .
benzaldehyde & 2,6-di-tert-butyl-4-methylphenol	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.
Bike Shine Gloss Aerosol GRITT by Leatt & alpha-amylcinnamaldehyde & benzaldehyde & 2,6-di-tert-butyl-4-methylphenol	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.
Bike Shine Gloss Aerosol GRITT by Leatt & Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics & alpha-amylcinnamaldehyde & benzaldehyde & 2,6-di-tert-butyl-4-methylphenol	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.
Bike Shine Gloss Aerosol GRITT by Leatt & alpha-amylcinnamaldehyde & benzaldehyde	Adverse reactions to fragrances in perfumes and fragranced cosmetic products include allergic contact dermatitis, irritant contact dermatitis, sensitivity to light, immediate contact reactions, and pigmented contact dermatitis. Airborne and conjugal contact dermatitis occurs. Contact allergy is a lifelong condition, so symptoms may occur on re-exposure. Allergic contact dermatitis can be severe and widespread, with significant impairment of quality of life and potential consequences for fitness for work.

If the perfume contains a sensitizing component, intolerance to perfumes by inhalation may occur. Symptoms may include general unwellness, coughing, phlegm, wheezing, chest tightness, headache, shortness of breath with exertion, acute respiratory illness, hayfever, asthma and other respiratory diseases. Perfumes can induce excess reactivity of the airway without producing allergy or airway obstruction. Breathing through a carbon filter mask had no protective effect.

Occupational asthma caused by perfume substances, such as isoamyl acetate, limonene, cinnamaldehyde and benzaldehyde, tend to give persistent symptoms, even though the exposure is below occupational exposure limits. Prevention of contact sensitization to fragrances is an important objective of public health risk management.

Hands: Contact sensitization may be the primary cause of hand eczema or a complication of irritant or atopic hand eczema. However hand eczema is a disease involving many factors, and the clinical significance of fragrance contact allergy in severe, chronic hand eczema may not be clear.

Underarm: Skin inflammation of the armpits may be caused by perfume in deodorants and, if the reaction is severe, it may spread down the arms and to other areas of the body. In individuals who consulted a skin specialist, a history of such first-time symptoms was significantly related to the later diagnosis of perfume allergy.

Face: An important manifestation of fragrance allergy from the use of cosmetic products is eczema of the face. In men, after-shave products can cause eczema around the beard area and the adjacent part of the neck. Men using wet shaving as opposed to dry have been shown to have an increased risk of allergic to fragrances.

Irritant reactions: Some individual fragrance ingredients, such as citral, are known to be irritant. Fragrances may cause a dose-related contact urticaria (hives) which is not allergic; cinnamal, cinnamic alcohol and Myroxylon pereirae are known to cause hives, but others, including menthol, vanillin and benzaldehyde have also been reported.

Pigmentary anomalies: Type IV allergy is responsible for "pigmented cosmetic dermatitis", referring to increased pigmentation on the face and neck. Testing showed a number of fragrance ingredients were associated, including jasmine absolute, ylang-ylang oil, cananga oil, benzyl salicylate, hydroxycitronellal, sandalwood oil, geraniol and geranium oil.

Light reactions: Musk ambrette produced a number of allergic reactions mediated by light and was later banned from use in Europe.

Furocoumarins (psoralens) in some plant-derived fragrances have caused phototoxic reactions, with redness. There are now limits for the amount of furocoumarins in fragrances. Phototoxic reactions still occur, but are rare.

General/respiratory: Fragrances are volatile, and therefore, in addition to skin exposure, a perfume also exposes the eyes and the nose / airway. It is estimated that 2-4% of the adult population is affected by respiratory or eye symptoms by such an exposure. It is known that exposure to fragrances may exacerbate pre-existing asthma. Asthma-like symptoms can be provoked by sensory mechanisms. A significant association was found between respiratory complaints related to fragrances and contact allergy to fragrance ingredients and hand eczema. Fragrance allergens act as haptens, low molecular weight chemicals that cause an immune response only when attached to a carrier protein. However, not all sensitizing fragrance chemicals are directly reactive, but require previous activation. A prehaptens is a chemical that itself causes little or no sensitization, but is transformed into a hapten in the skin (bioactivation), usually via enzyme catalysis. It is not always possible to know whether a particular allergen that is not directly reactive acts as a prehaptens or a prohaptens, or both.

Prohaptens: Compounds that are bioactivated in the skin and thereby form haptens are referred to prohaptens. The possibility of a prohaptens being activated cannot be avoided by outside measures. Activation processes increase the risk for cross-reactivity between fragrance substances. Various enzymes play roles in both activating and deactivating prohaptens. Skin-sensitizing prohaptens can be recognized and grouped into chemical classes based on knowledge of xenobiotic bioactivation reactions, clinical observations and/or studies of sensitization.

QSAR prediction: Prediction of sensitization activity of these substances is complex, especially for those substances that can act both as pre- and prohaptens.

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

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Bike Shine Gloss Aerosol GRITT by Leatt	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	EC50	48h	Crustacea	0.64mg/l	2
	EC50	96h	Algae or other aquatic plants	64mg/l	2
	NOEC(ECx)	504h	Crustacea	0.17mg/l	2
	LC50	96h	Fish	0.11mg/l	2
butane	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	EC50(ECx)	96h	Algae or other aquatic plants	7.71mg/l	2
	EC50	96h	Algae or other aquatic plants	7.71mg/l	2
	LC50	96h	Fish	24.11mg/l	2
propane	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
dimethylsiloxane, 3-[(2-aminoethyl)propyl], methoxylated	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
cyclohexane	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	BCF	1344h	Fish	31-102	7
	EC50	72h	Algae or other aquatic plants	3.428mg/l	2
	EC50	48h	Crustacea	0.9mg/l	2
	EC50(ECx)	48h	Crustacea	0.9mg/l	2

Bike Shine Gloss Aerosol GRITT by Leatt

	EC50	96h	Algae or other aquatic plants	2.17mg/l	2
	LC50	96h	Fish	4.53mg/l	2
alpha-amylicinnamaldehyde	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	EC50	72h	Algae or other aquatic plants	1.18mg/l	2
	EC50	48h	Crustacea	0.28mg/l	2
	NOEC(ECx)	504h	Crustacea	0.041mg/l	2
	EC50	96h	Algae or other aquatic plants	1.715mg/l	2
	LC50	96h	Fish	0.91mg/l	2
benzaldehyde	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	EC50	72h	Algae or other aquatic plants	0.028mg/L	4
	EC50	48h	Crustacea	19.7mg/l	2
	EC10(ECx)	72h	Algae or other aquatic plants	0.021mg/l	2
	EC50	96h	Algae or other aquatic plants	23.065mg/l	2
	LC50	96h	Fish	0.8-1.44mg/L	4
	ErC50	72h	Algae or other aquatic plants	33.1mg/l	2
iso-amil acetate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	EC50	72h	Algae or other aquatic plants	156mg/l	2
	EC50	48h	Crustacea	26.3mg/l	2
	NOEC(ECx)	48h	Crustacea	3.77mg/l	2
	EC50	96h	Algae or other aquatic plants	235mg/l	2
2,6-di-tert-butyl-4-methylphenol	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	BCF	1344h	Fish	220-2800	7
	EC50	72h	Algae or other aquatic plants	>0.42mg/l	1
	EC50	48h	Crustacea	>0.17mg/l	2
	EC0(ECx)	48h	Crustacea	>=0.31mg/l	1
	EC50	96h	Algae or other aquatic plants	0.758mg/l	2
	LC50	96h	Fish	0.199mg/l	2
	ErC50	72h	Algae or other aquatic plants	>0.42mg/l	1
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. US EPA, Ecotox database - Aquatic Toxicity Data 4. ECETOC Aquatic Hazard Assessment Data 5. NITE (Japan) - Bioconcentration Data 6. METI (Japan) - Bioconcentration Data 7. Vendor Data				

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

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

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

When released in the environment, alkanes don't undergo rapid biodegradation, because they have no functional groups (like hydroxyl or carbonyl) that are needed by most organisms in order to metabolize the compound.

However, some bacteria can metabolise some alkanes (especially those linear and short), by oxidizing the terminal carbon atom. The product is an alcohol, that could be next oxidised to an aldehyde, and finally to a carboxylic acid. The resulting fatty acid could be metabolised through the fatty acid degradation pathway.

For petroleum distillates:

Environmental fate:

When petroleum substances are released into the environment, four major fate processes will take place: dissolution in water, volatilization, biodegradation and adsorption.

These processes will cause changes in the composition of these UVCB substances. In the case of spills on land or water surfaces, photodegradation-another fate process-can also be significant.

As noted previously, the solubility and vapour pressure of components within a mixture will differ from those of the component alone. These interactions are complex for complex UVCBs such as petroleum hydrocarbons.

Each of the fate processes affects hydrocarbon families differently. Aromatics tend to be more water-soluble than aliphatics of the same carbon number, whereas aliphatics tend to be more volatile. Thus, when a petroleum mixture is released into the environment, the principal water contaminants are likely to be aromatics, whereas aliphatics will be the principal air contaminants. The trend in volatility by component class is as follows: alkenes = alkanes > aromatics = cycloalkanes.

The most soluble and volatile components have the lowest molecular weight; thus there is a general shift to higher molecular weight components in residual materials.

Biodegradation:

Biodegradation is almost always operative when petroleum mixtures are released into the environment. It has been widely demonstrated that nearly all soils and sediments have populations of bacteria and other organisms capable of degrading petroleum hydrocarbons. Degradation occurs both in the presence and absence of oxygen. Two key factors that determine degradation rates are oxygen supply and molecular structure. In general, degradation is more rapid under aerobic conditions. Decreasing trends in degradation rates according to structure are as follows:

- (1) n-alkanes, especially in the C10–C25 range, which are degraded readily;
- (2) isoalkanes;
- (3) alkenes;
- (4) benzene, toluene, ethylbenzene, xylenes (BTEX) (when present in concentrations that are not toxic to microorganisms);
- (5) monoaromatics;
- (6) polynuclear (polycyclic) aromatic hydrocarbons (PAHs); and
- (7) higher molecular weight cycloalkanes (which may degrade very slowly).

Three weathering processes-dissolution in water, volatilization and biodegradation-typically result in the depletion of the more readily soluble, volatile and degradable compounds and the accumulation of those most resistant to these processes in residues.

When large quantities of a hydrocarbon mixture enter the soil compartment, soil organic matter and other sorption sites in soil are fully saturated and the hydrocarbons will begin to form a separate phase (a non-aqueous phase liquid, or NAPL) in the soil. At concentrations below the retention capacity for the hydrocarbon in the soil, the NAPL will be immobile this is referred to as residual NAPL. Above the retention capacity, the NAPL becomes mobile and will move within the soil.

Bioaccumulation:

Bioaccumulation potential was characterized based on empirical and/or modelled data for a suite of petroleum hydrocarbons expected to occur in petroleum substances.

Bioaccumulation factors (BAFs) are the preferred metric for assessing the bioaccumulation potential of substances, as the bioconcentration factor (BCF) may not adequately account for the bioaccumulation potential of substances via the diet, which predominates for substances with log Kow > ~4.5

In addition to fish BCF and BAF data, bioaccumulation data for aquatic invertebrate species were also considered. Biota-sediment/soil accumulation factors (BSAFs), trophic magnification factors and biomagnification factors were also considered in characterizing bioaccumulation potential.

Overall, there is consistent empirical and predicted evidence to suggest that the following components have the potential for high bioaccumulation, with BAF/BCF values greater than 5000: C13–C15 isoalkanes, C12 alkenes, C12–C15 one-ring cycloalkanes, C12 and C15 two-ring cycloalkanes, C14 polycycloalkanes, C15 one-ring aromatics, C15 and C20 cycloalkane monoaromatics, C12–C13 diaromatics, C20 cycloalkane diaromatics, and C14 and C20 three-ring PAHs

Continued...

Bike Shine Gloss Aerosol GRITT by Leatt

These components are associated with a slow rate of metabolism and are highly lipophilic. Exposures from water and diet, when combined, suggest that the rate of uptake would exceed that of the total elimination rate. Most of these components are not expected to biomagnify in aquatic or terrestrial foodwebs, largely because a combination of metabolism, low dietary assimilation efficiency and growth dilution allows the elimination rate to exceed the uptake rate from the diet; however, one study suggests that some alkyl-PAHs may biomagnify. While only BSAFs were found for some PAHs, it is possible that BSAFs will be > 1 for invertebrates, given that they do not have the same metabolic competency as fish.

In general, fish can efficiently metabolize aromatic compounds. There is some evidence that alkylation increases bioaccumulation of naphthalene but it is not known if this can be generalized to larger PAHs or if any potential increase in bioaccumulation due to alkylation will be sufficient to exceed a BAF/BCF of 5000.

Some lower trophic level organisms (i.e., invertebrates) appear to lack the capacity to efficiently metabolize aromatic compounds, resulting in high bioaccumulation potential for some aromatic components as compared to fish.

This is the case for the C14 three-ring PAH, which was bioconcentrated to a high level (BCF > 5000) by invertebrates but not by fish. There is potential for such bioaccumulative components to reach toxic levels in organisms if exposure is continuous and of sufficient magnitude, though this is unlikely in the water column following a spill scenario due to relatively rapid dispersal.

Bioaccumulation of aromatic compounds might be lower in natural environments than what is observed in the laboratory. PAHs may sorb to organic material suspended in the water column (dissolved humic material), which decreases their overall bioavailability primarily due to an increase in size. This has been observed with fish.

Ecotoxicity:

Diesel fuel studies in salt water are available. The values varied greatly for aquatic species such as rainbow trout and *Daphnia magna*, demonstrating the inherent variability of diesel fuel compositions and its effects on toxicity. Most experimental acute toxicity values are above 1 mg/L. The lowest 48-hour LC50 for salmonids was 2.4 mg/L. *Daphnia magna* had a 24-hour LC50 of 1.8 mg/L. The values varied greatly for aquatic species such as rainbow trout and *Daphnia magna*, demonstrating the inherent variability of diesel fuel compositions and its effects on toxicity. Most experimental acute toxicity values are above 1 mg/L. The lowest 48-hour LC50 for salmonids was 2.4 mg/L. *Daphnia magna* had a 24-hour LC50 of 1.8 mg/L.

The tropical mysid *Metamysidopsis insularis* was shown to be very sensitive to diesel fuel, with a 96-hour LC50 value of 0.22 mg/L. This species has been shown to be as sensitive as temperate mysids to toxicants. However, this study used nominal concentrations, and therefore was not considered acceptable. In another study involving diesel fuel, the effect on brown or common shrimp (*Crangon crangon*) a 96-hour LC50 of 22 mg/L was determined. A "gas oil" was also tested and a 96-hour LC50 of 12 mg/L was determined.

The steady state cell density of marine phytoplankton decreased with increasing concentrations of diesel fuel, with different sensitivities between species. The diatom *Phaeodactylum tricornutum* showed a 20% decrease in cell density in 24 hours following a 3 mg/L exposure with a 24-hour no-observed effect concentration (NOEC) of 2.5 mg/L. The microalga *Isochrysis galbana* was more tolerant to diesel fuel, with a 24-hour lowest-observed-effect concentration (LOEC) of 26 mg/L (14% decrease in cell density), and a NOEC of 25 mg/L.

Finally, the green algae *Chlorella salina* was relatively insensitive to diesel fuel contamination, with a 24-hour LOEC of 170 mg/L (27% decrease in cell density), and a NOEC of 160 mg/L. All populations of phytoplankton returned to a steady state within 5 days of exposure.

In sandy soils, earthworm (*Eisenia fetida*) mortality only occurred at diesel fuel concentrations greater than 10 000 mg/kg, which was also the concentration at which sub-lethal weight loss was recorded.

Nephrotoxic effects of diesel fuel have been documented in several animal and human studies. Some species of birds (mallard ducks in particular) are generally resistant to the toxic effects of petrochemical ingestion, and large amounts of petrochemicals are needed in order to cause direct mortality.

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

Atmospheric Fate: Breakdown of n-heptane by sunlight is not expected to be an important fate process. If released to the atmosphere, n-heptane is expected to exist entirely in the vapor phase, in ambient air. Reactions hydroxyl radicals in the atmosphere have been shown to be important. Night-time reactions with nitrate radicals may contribute to the atmospheric transformation of n-heptane, especially in urban environments. n-Heptane is not expected to be susceptible to direct breakdown by sunlight.

Terrestrial Fate: n-Heptane is expected to be broken down by biological processes in the soil; however, evaporation and adsorption from soil are expected to be a more important fate processes. n-Heptane will be slightly mobile to immobile in soil.

Aquatic Fate: Breakdown of n-heptane by water is not expected to be an important fate process.

Biological breakdown may occur in water; however, evaporation is expected to be a more important fate process. The evaporation half-life for the substance from a model river is 2.9 hours and from a model pond is 13 days. In aquatic systems, n-heptane may partition from the water column to organic matter in sediments and suspended solids.

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

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

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

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

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

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

For Butane (Synonym: n-Butane): Log Kow: 2.89; Koc: 450-900; Henry's Law Constant: 0.95 atm-cu m/mole, Vapor Pressure: 1820 mm Hg; BCF: 1.9.

Atmospheric Fate: Butane is expected to exist only as a gas in the ambient atmosphere. Gas-phase n-butane is degraded in the atmosphere by reaction with hydroxyl radicals; the half-life for this reaction in air is estimated to be 6.3 days, (@ 25 °C). Butane is not expected to absorb UV light and probably will probably not be broken down directly by sunlight in the atmosphere. Nighttime reactions with radical species and nitrogen oxides may contribute to the atmospheric transformation of butane.

Terrestrial Fate: Butane is expected to have low mobility in soil. Evaporation from dry soil surfaces is expected to be the main fate process. This substance is expected to be biologically degraded in soil.

Aquatic Fate: Butane may adsorb to suspended solids and sediment and is expected to occur from water surfaces with an estimated half-life for a model river of 2.2 hours and 3 days, from a model lake. Biological breakdown in water is expected to occur with complete breakdown estimated to be 34 days to 2-butanone and 2-butanol, (observed in studies). Breakdown by water and by sunlight in water are not expected to be important fate processes.

Ecotoxicity: The substance is expected to moderately accumulate in aquatic organisms. Butane is moderately toxic to fish, and *Daphnia* water fleas.

For Propane: Koc 460. log Kow 2.36.

Henry's Law constant of 7.07×10^{-1} atm-cu m/mole, derived from its vapour pressure, 7150 mm Hg, and water solubility, 62.4 mg/L. Estimated BCF: 13.1.

Terrestrial Fate: Propane is expected to have moderate mobility in soil. Volatilization from moist soil surfaces is expected to be an important fate process. Volatilization from dry soil surfaces is based vapor pressure. Biodegradation may be an important fate process in soil and sediment.

Aquatic Fate: Propane is expected to adsorb to suspended solids and sediment. Volatilization from water surfaces is expected and half-lives for a model river and model lake are estimated to be 41 minutes and 2.6 days, respectively. Biodegradation may not be an important fate process in water.

Ecotoxicity: The potential for bioconcentration in aquatic organisms is low.

Atmospheric Fate: Propane is expected to exist solely as a gas in the ambient atmosphere. Gas-phase propane is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 14 days and is not expected to be susceptible to direct photolysis by sunlight.

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
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butane	LOW	LOW
propane	LOW	LOW
cyclohexane	HIGH (Half-life = 360 days)	LOW (Half-life = 3.63 days)
alpha-amylcinnamaldehyde	LOW	LOW
benzaldehyde	LOW	LOW
iso-amyl acetate	LOW	LOW
2,6-di-tert-butyl-4-methylphenol	HIGH	HIGH
Hydrocarbons, C7, n-alkanes, i soalkanes, cyclics	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
butane	LOW (LogKOW = 2.89)
propane	LOW (LogKOW = 2.36)
cyclohexane	LOW (BCF = 242)
alpha-amylcinnamaldehyde	HIGH (LogkOW = 4.7)
benzaldehyde	LOW (LogKOW = 1.48)
iso-amyl acetate	LOW (LogKOW = 2.25)
2,6-di-tert-butyl-4-methylphenol	HIGH (BCF = 2500)
Hydrocarbons, C7, n-alkanes, i soalkanes, cyclics	HIGH (LogKOW = 4.66)

Mobility in soil

Ingredient	Mobility
butane	LOW (KOC = 43.79)
propane	LOW (KOC = 23.74)
cyclohexane	LOW (KOC = 165.5)
alpha-amylcinnamaldehyde	LOW (KOC = 2182)
benzaldehyde	LOW (KOC = 32.67)
iso-amyl acetate	LOW (KOC = 32.24)
2,6-di-tert-butyl-4-methylphenol	LOW (KOC = 23030)
Hydrocarbons, C7, n-alkanes, i soalkanes, cyclics	LOW (KOC = 274.7)

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 • 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. • Consult State Land Waste Management Authority for disposal. • Discharge contents of damaged aerosol cans at an approved site. • Allow small quantities to evaporate. • DO NOT incinerate or puncture aerosol cans. • Bury residues and emptied aerosol cans at an approved site.
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SECTION 14 TRANSPORT INFORMATION

Labels Required

	
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Marine Pollutant	
HAZCHEM	Not Applicable

Land transport (ADG)

14.1. UN number or ID number	1950	
14.2. UN proper shipping name	AEROSOLS	
14.3. Transport hazard class(es)	Class	2.1
	Subsidiary Hazard	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Environmentally hazardous	
14.6. Special precautions for user	Special provisions	63 190 277 327 344 381
	Limited quantity	1000ml

Air transport (ICAO-IATA / DGR)

14.1. UN number	1950	
14.2. UN proper shipping name	Aerosols, flammable; Aerosols, flammable (engine starting fluid)	
14.3. Transport hazard class(es)	ICAO/IATA Class	2.1
	ICAO / IATA Subsidiary Hazard	Not Applicable
	ERG Code	10L
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Environmentally hazardous	
14.6. Special precautions for user	Special provisions	A145 A167 A802 A1 A145 A167 A802
	Cargo Only Packing Instructions	203
	Cargo Only Maximum Qty / Pack	150 kg
	Passenger and Cargo Packing Instructions	203 Forbidden
	Passenger and Cargo Maximum Qty / Pack	75 kg Forbidden
	Passenger and Cargo Limited Quantity Packing Instructions	Y203 Forbidden
	Passenger and Cargo Limited Maximum Qty / Pack	30 kg G Forbidden

Sea transport (IMDG-Code / GGVSee)

14.1. UN number	1950	
14.2. UN proper shipping name	AEROSOLS	
14.3. Transport hazard class(es)	IMDG Class	2.1
	IMDG Subsidiary Hazard	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Marine Pollutant	
14.6. Special precautions for user	EMS Number	F-D, S-U
	Special provisions	63 190 277 327 344 381 959
	Limited Quantities	1000 ml

14.7. Maritime transport in bulk according to IMO instruments

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
butane	Not Applicable
propane	Not Applicable
dimethylsiloxane, 3-[(2-aminoethyl)propyl], methoxylated	Not Applicable
cyclohexane	Not Applicable
alpha-amylcinnamaldehyde	Not Applicable
benzaldehyde	Not Applicable
iso-amyl acetate	Not Applicable
2,6-di-tert-butyl-4-methylphenol	Not Applicable
Hydrocarbons, C7, n-alkanes, i	Not Applicable

Product name	Group
soalkanes, cyclics	

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
butane	Not Applicable
propane	Not Applicable
dimethylsiloxane, 3-[(2-aminoethyl)propyl], methoxylated	Not Applicable
cyclohexane	Not Applicable
alpha-amylcinnamaldehyde	Not Applicable
benzaldehyde	Not Applicable
iso-amyl acetate	Not Applicable
2,6-di-tert-butyl-4-methylphenol	Not Applicable
Hydrocarbons, C7, n-alkanes, i soalkanes, cyclics	Not Applicable

SECTION 15 REGULATORY INFORMATION

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

- BUTANE 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
- PROPANE IS FOUND ON THE FOLLOWING REGULATORY LISTS**
 - Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
 - Australian Inventory of Industrial Chemicals (AIIC)
- DIMETHYLSILOXANE, 3-[(2-AMINOETHYL)PROPYL], METHOXYLATED IS FOUND ON THE FOLLOWING REGULATORY LISTS**
 - Australian Inventory of Industrial Chemicals (AIIC)
- CYCLOHEXANE IS FOUND ON THE FOLLOWING REGULATORY LISTS**
 - Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
 - Australian Inventory of Industrial Chemicals (AIIC)
- ALPHA-AMYL CINNAMALDEHYDE IS FOUND ON THE FOLLOWING REGULATORY LISTS**
 - Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
 - Australian Inventory of Industrial Chemicals (AIIC)
- BENZALDEHYDE IS FOUND ON THE FOLLOWING REGULATORY LISTS**
 - Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
 - Australian Inventory of Industrial Chemicals (AIIC)
- ISO-AMYL ACETATE IS FOUND ON THE FOLLOWING REGULATORY LISTS**
 - Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
 - Australian Inventory of Industrial Chemicals (AIIC)
- 2,6-DI-TERT-BUTYL-4-METHYLPHENOL IS FOUND ON THE FOLLOWING REGULATORY LISTS**
 - Australian Inventory of Industrial Chemicals (AIIC)
 - International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
 - International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
- HYDROCARBONS, C7, N-ALKANES, ISOALKANES, CYCLICS 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 - Not Classified as Carcinogenic

Additional Regulatory Information

Not Applicable

Additional State Regulatory Information

Not Available

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	No (dimethylsiloxane, 3-[(2-aminoethyl)propyl], methoxylated)
Canada - NDSL	No (Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics, butane, propane, cyclohexane, alpha-amylcinnamaldehyde, benzaldehyde, iso-amyl acetate)
China - IECSC	Yes
Columbia - Columbia National Industrial Chemicals Inventory	No (Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics, butane, propane, dimethylsiloxane, 3-[(2-aminoethyl)propyl], methoxylated, cyclohexane, alpha-amylcinnamaldehyde, benzaldehyde, iso-amyl acetate, 2,6-di-tert-butyl-4-methylphenol)
Europe - EINEC / ELINCS / NLP	No (dimethylsiloxane, 3-[(2-aminoethyl)propyl], methoxylated)

Japan - ENCS	No (dimethylsiloxane, 3-[(2-aminoethyl)propyl], methoxylated)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	All chemical substances in this product have been designated as TSCA Inventory 'Active'
Taiwan - TCSI	Yes
Mexico - INSQ	No (dimethylsiloxane, 3-[(2-aminoethyl)propyl], methoxylated, alpha-amylicinnamaldehyde)
Vietnam - NCI	Yes
Russia - FBEPH	Yes
UAE - Control List (Banned/Restricted Substances)	No (Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics, butane, propane, dimethylsiloxane, 3-[(2-aminoethyl)propyl], methoxylated, cyclohexane, alpha-amylicinnamaldehyde, benzaldehyde, iso-amyI acetate, 2,6-di-tert-butyl-4-methylphenol)
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	18/04/2026
Initial Date	27/02/2026

Other information

Ingredients with multiple cas numbers

Name	CAS No
2,6-di-tert-butyl-4-methylphenol	128-37-0, 31194-40-8, 97123-41-6, 25377-21-3, 102962-45-8, 259752-53-9, 290348-23-1, 36631-28-4, 42615-30-5, 50356-19-9, 50641-99-1, 52683-46-2, 53571-70-3, 58500-82-6, 83047-16-9, 86819-59-2, 64502-99-4
Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	64742-49-0, 142-82-5, 426260-76-6

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
- MARPOL: International Convention for the Prevention of Pollution from Ships
- IMSBC: International Maritime Solid Bulk Cargoes Code
- IGC: International Gas Carrier Code
- IBC: International Bulk Chemical Code
- 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