



NS-2717-G Syn-Tech Ltd.

Version No: 1.2
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Chemwatch Hazard Alert Code: 3

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S.GHS.USA.EN

SECTION 1 Identification

Product Identifier

Product name	NS-2717-G
Synonyms	Not Available
Other means of identification	Not Available

Recommended use of the chemical and restrictions on use

Relevant identified uses	Lubricant
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Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	Syn-Tech Ltd.	Syn-Tech Ltd.
Address	1550 W Fullerton Ave, Unit F Illinois 60101 United States	1550 W. Fullerton Ave Illinois United States
Telephone	630-628-7290	630-628-7290
Fax	Not Available	Not Available
Website	www.syn-techlube.com	www.syn-techlube.com
Email	msds@syn-techlube.com	msds@syn-techlube.com

Emergency phone number

Association / Organisation	Not Available
Emergency telephone numbers	Not Available
Other emergency telephone numbers	Not Available

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification	Carcinogenicity Category 1B, Sensitisation (Skin) Category 1
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Label elements

Hazard pictogram(s)	
Signal word	Danger

Hazard statement(s)

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H350	May cause cancer.
H317	May cause an allergic skin reaction.

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P280	Wear protective gloves and protective clothing.
P261	Avoid breathing dust/fumes.
P202	Do not handle until all safety precautions have been read and understood.
P272	Contaminated work clothing must not be allowed out of the workplace.

Precautionary statement(s) Response

P308+P313	IF exposed or concerned: Get medical advice/ attention.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

Precautionary statement(s) Storage

P405	Store locked up.
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Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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Not Applicable

SECTION 3 Composition / information on ingredients**Substances**

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
15337-18-5	0.5	<u>zinc diamyldithiocarbamate</u>
64742-52-5	0.5	<u>naphthenic distillate, heavy, hydrotreated (mild)</u>
68411-46-1	0.5	<u>octylated diphenylamines</u>
25619-56-1	0.25	<u>barium dinonyl naphthalenesulfonate</u>
Not Available	10	Proprietary

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 First-aid measures**Description of first aid measures**

Eye Contact	<ul style="list-style-type: none"> Generally not applicable.
Skin Contact	If skin contact occurs: <ul style="list-style-type: none"> Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation. Generally not applicable.
Inhalation	<ul style="list-style-type: none"> Generally not applicable.
Ingestion	<ul style="list-style-type: none"> Generally not applicable.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Fire-fighting measures**Extinguishing media**

- Foam.

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

Special hazards arising from the substrate or mixture

Fire Incompatibility	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Special protective equipment and precautions for fire-fighters

Fire Fighting	<ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves. ▶ Prevent, by any means available, spillage from entering drains or water courses. ▶ 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. <p>Slight hazard when exposed to heat, flame and oxidisers.</p>
Fire/Explosion Hazard	<p>Combustible. Will burn if ignited. Combustion products include: carbon monoxide (CO) carbon dioxide (CO₂) metal oxides other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes.</p> <p>Articles and manufactured articles may constitute a fire hazard where polymers form their outer layers or where combustible packaging remains in place. Certain substances, found throughout their construction, may degrade or become volatile when heated to high temperatures. This may create a secondary hazard.</p> <p>CARE: Water in contact with hot liquid may cause foaming and a steam explosion with wide scattering of hot oil and possible severe burns. Foaming may cause overflow of containers and may result in possible fire.</p>

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	<ul style="list-style-type: none"> ▶ Clean up all spills immediately. ▶ Secure load if safe to do so. ▶ Bundle/collect recoverable product. ▶ Collect remaining material in containers with covers for disposal.
Major Spills	<ul style="list-style-type: none"> ▶ 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. <p>Minor hazard.</p> <ul style="list-style-type: none"> ▶ Clear area of personnel. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Control personal contact with the substance, by using protective equipment as required. ▶ Prevent spillage from entering drains or water ways. ▶ Contain spill with sand, earth or vermiculite. ▶ Collect recoverable product into labelled containers for recycling. ▶ Absorb remaining product with sand, earth or vermiculite and place in appropriate containers for disposal. ▶ Wash area and prevent runoff into drains or waterways. ▶ If contamination of drains or waterways occurs, advise emergency services. ▶ Clean up all spills immediately. ▶ Wear protective clothing, safety glasses, dust mask, gloves. ▶ Secure load if safe to do so. Bundle/collect recoverable product. ▶ Use dry clean up procedures and avoid generating dust. ▶ Vacuum up (consider explosion-proof machines designed to be grounded during storage and use). ▶ Water may be used to prevent dusting. ▶ Collect remaining material in containers with covers for disposal. ▶ Flush spill area with water.

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

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps. ▶ DO NOT enter confined spaces until atmosphere has been checked. ▶ DO NOT allow material to contact humans, exposed food or food utensils. ▶ Avoid contact with incompatible materials. ▶ When handling, DO NOT eat, drink or smoke. ▶ Keep containers securely sealed when not in use. ▶ Avoid physical damage to containers. ▶ Always wash hands with soap and water after handling. ▶ Work clothes should be laundered separately. Launder contaminated clothing before re-use. ▶ Use good occupational work practice. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. ▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
Other information	<ul style="list-style-type: none"> ▶ Store away from incompatible materials.

Conditions for safe storage, including any incompatibilities

Suitable container	Generally packaging as originally supplied with the article or manufactured item is sufficient to protect against physical hazards. If repackaging is required ensure the article is intact and does not show signs of wear. As far as is practicably possible, reuse the original packaging or something providing a similar level of protection to both the article and the handler.
Storage incompatibility	<ul style="list-style-type: none"> ▶ Avoid reaction with oxidising agents

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Limits (PELs) Table Z-1	zinc diamylthiocarbamate	Particulates Not Otherwise Regulated (PNOR)- Respirable fraction	5 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-1	zinc diamylthiocarbamate	Particulates Not Otherwise Regulated (PNOR)- Total dust	15 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-3	zinc diamylthiocarbamate	Inert or Nuisance Dust: Respirable fraction	5 mg/m3 / 15 mppcf	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-3	zinc diamylthiocarbamate	Inert or Nuisance Dust: Total Dust	15 mg/m3 / 50 mppcf	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	zinc diamylthiocarbamate	Particulates not otherwise regulated	Not Available	Not Available	Not Available	See Appendix D
US OSHA Permissible Exposure Limits (PELs) Table Z-1	naphthenic distillate, heavy, hydrotreated (mild)	Oil mist, mineral	5 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-1	octylated diphenylamines	Particulates Not Otherwise Regulated (PNOR)- Respirable fraction	5 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-1	octylated diphenylamines	Particulates Not Otherwise Regulated (PNOR)- Total dust	15 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-3	octylated diphenylamines	Inert or Nuisance Dust: Total Dust	15 mg/m3 / 50 mppcf	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-3	octylated diphenylamines	Inert or Nuisance Dust: Respirable fraction	5 mg/m3 / 15 mppcf	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	octylated diphenylamines	Particulates not otherwise regulated	Not Available	Not Available	Not Available	See Appendix D

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
naphthenic distillate, heavy, hydrotreated (mild)	140 mg/m3	1,500 mg/m3	8,900 mg/m3

Ingredient	Original IDLH	Revised IDLH
zinc diamylthiocarbamate	Not Available	Not Available
naphthenic distillate, heavy, hydrotreated (mild)	2,500 mg/m3	Not Available
octylated diphenylamines	Not Available	Not Available

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Ingredient	Original IDLH	Revised IDLH
barium dinonyl naphthalenesulfonate	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
barium dinonyl naphthalenesulfonate	E	≤ 0.01 mg/m ³

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	<p>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:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>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.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p> <ul style="list-style-type: none"> ▶ 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. <p>Articles or manufactured items, in their original condition, generally don't require engineering controls during handling or in normal use. Exceptions may arise following extensive use and subsequent wear, during recycling or disposal operations where substances, found in the article, may be released to the environment.</p>
Personal protection	
Eye and face protection	<p>No special equipment required due to the physical form of the product.</p> <ul style="list-style-type: none"> ▶ Safety glasses with side shields. ▶ Chemical goggles. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]
Skin protection	See Hand protection below
Hands/feet protection	<p>Wear general protective gloves, eg. light weight rubber gloves.</p> <p>NOTE:</p> <ul style="list-style-type: none"> ▶ 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.
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> ▶ Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZS ISO 6529:2006 or national equivalent] ▶ Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted. [AS/NZS 1715 or national equivalent] ▶ Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely. ▶ Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood. ▶ Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the

- garments and hood.
- ▶ Overalls.
- ▶ P.V.C apron.
- ▶ Barrier cream.
- ▶ Skin cleansing cream.
- ▶ Eye wash unit.

Respiratory protection

Respiratory protection not normally required due to the physical form of the product.

SECTION 9 Physical and chemical properties**Information on basic physical and chemical properties**

Appearance	Moisture sensitive. Tan grease, petroleum odor		
Physical state	Manufactured	Relative density (Water = 1)	Not Available
Odour	Not Available	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	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Applicable
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution (Not Available%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	Product is considered stable and 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**

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Inhalation of oil droplets or aerosols may cause discomfort and may produce chemical inflammation of the lungs.
Ingestion	The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Open cuts, abraded or irritated skin should not be exposed to this material

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	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	Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).	
Chronic	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. Repeated application of mildly hydrotreated oils (principally paraffinic), to mouse skin, induced skin tumours; no tumours were induced with severely hydrotreated oils.	
NS-2717-G	TOXICITY	IRRITATION
	Not Available	Not Available
zinc diamylthiocarbamate	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[2] Oral (Rat) LD50; >2000 mg/kg ^[1]	Eye: no adverse effect observed (not irritating) ^[1] Skin: no adverse effect observed (not irritating) ^[1]
naphthenic distillate, heavy, hydrotreated (mild)	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >2000 mg/kg ^[2] Inhalation(Rat) LC50; 2.18 mg/4h ^[2] Oral (Rat) LD50; >5000 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1] Skin: no adverse effect observed (not irritating) ^[1]
octylated diphenylamines	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[1] Oral (Rat) LD50; >2000 mg/kg ^[2]	Eye (rabbit): Non Irritant Eye: adverse effect observed (irritating) ^[1] Skin (rabbit): Non Irritant [Bay] Skin: adverse effect observed (irritating) ^[1]
barium dinonyl naphthalenesulfonate	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >2000 mg/kg ^[2] Inhalation(Rat) LC50; >5.25 mg/L4h ^[2] Oral (Rat) LD50; 3000 mg/kg ^[2]	Eye (rabbit): 250 mg/5d mild
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	

ZINC DIAMYLTHIOCARBAMATE	for 50% process oil mixture:
NAPHTHENIC DISTILLATE, HEAVY, HYDROTREATED (MILD)	<p>The materials included in the Lubricating Base Oils category are related from both process and physical-chemical perspectives; The potential toxicity of a specific distillate base oil is inversely related to the severity or extent of processing the oil has undergone, since:</p> <ul style="list-style-type: none"> The adverse effects of these materials are associated with undesirable components, and The levels of the undesirable components are inversely related to the degree of processing; Distillate base oils receiving the same degree or extent of processing will have similar toxicities; The potential toxicity of residual base oils is independent of the degree of processing the oil receives. The reproductive and developmental toxicity of the distillate base oils is inversely related to the degree of processing. <p>Unrefined & mildly refined distillate base oils contain the highest levels of undesirable components, have the largest variation of hydrocarbon molecules and have shown the highest potential cancer-causing and mutation-causing activities. Highly and severely refined distillate base oils are produced from unrefined and mildly refined oils by removing or transforming undesirable components. In comparison to unrefined and mildly refined base oils, the highly and severely refined distillate base oils have a smaller range of hydrocarbon molecules and have demonstrated very low mammalian toxicity. Testing of residual oils for mutation-causing and cancer-causing potential has shown negative results, supporting the belief that these materials lack biologically active components or the components are largely non-bioavailable due to their molecular size. Toxicity testing has consistently shown that lubricating base oils have low acute toxicities. Numerous tests have shown that a lubricating base oil's mutagenic and carcinogenic potential correlates with its 3-7 ring polycyclic aromatic compound (PAC) content, and the level of DMSO extractables (e.g. IP346 assay), both characteristics that are directly related to the degree/conditions of processing.</p> <p>For unrefined and mildly refined distillate base oils: Acute toxicity: Animal testing showed high semilethal doses of >5000 mg/kg body weight and >2 g/kg body weight for exposure by swallowing or skin contact, respectively. The same material was also reported to be moderately irritating to skin, while not being sensitizing. Repeat dose toxicity: Animal testing showed that repeat dose toxicity was mild to moderate to the skin. Reproductive / developmental toxicity: No studies on developmental toxicity or reproduction are available. Animal testing shows that high doses may reduce the body weight of both the mother and the foetus, and increase the rate of soft tissue malformations. Genetic toxicity: These oils have been found to cause mutations. Cancer-causing potential: The general conclusion that can be drawn from animal testing is that these oils may potentially cause skin cancer; however, they have not been found to be associated with an increase in tumours elsewhere in the body. 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. 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.</p>

	<p>WARNING: This substance has been classified by the IARC as Group 1: CARCINOGENIC TO HUMANS.</p>
<p>OCTYLATED DIPHENYLAMINES</p>	<p>Heating of substituted diphenylamines may generate vapours which can irritate the eyes and airways. Drying of skin and mucous membranes leading to irritation may occur with prolonged or repeated contact. Overexposure may cause skin and airway irritation with dizziness and flu-like symptoms. All show a slight to very low order of toxicity following oral or topical administration. There is very low potential to cause gene mutations.</p> <p>Potential sensitiser producing contact allergies.</p>
<p>BARIUM DINONYL NAPHTHALENESULFONATE</p>	<p>Toxicity information for barium sulfonates (barium salts of various alkyl and aryl sulfonic acids in oil solution): For dinonylnaphthalenes: The chemicals exhibit a very low order of toxicity to rats or rabbits by the oral, inhalation, or dermal routes. Human sensitisation study results are available for two members of the category (dinonylnaphthalene sulfonic acid, calcium salt; dinonylnaphthalene sulfonic acid, barium salt). Neither is a sensitiser. Based on the available toxicity results, dinonylnaphthalene sulfonic acid, barium salt appears to be the most biologically active member of the category. For alkaryl sulfonate petroleum additives: Acute toxicity: Existing data indicates relatively low acute toxicity. Animal testing suggested diarrhea and reduced food intake, which is consistent with the detergents in an oil-based vehicle having an irritating effect on the gastrointestinal tract. Subchronic toxicity: Existing data suggests minimal toxicity after chronic exposure by mouth. Repeated skin contact and inhalation in animals caused injury to the skin and the lungs, respectively. Reproductive and Developmental Toxicity: Existing data did not show this group of substances to cause reproductive or developmental toxicity. There was low concern for mutation-causing potential. For dinonylnaphthalenesulfonic acid (DNNSA) and its salts: In general, a compound needs to be dissolved before it can be taken up from the gastro-intestinal tract after oral administration. Calcium bis(di C8-C10, branched, C9 rich, alkylnaphthalene sulphonate) (CaDNNSA) has a measured water solubility of 0.266 mg/L and therefore it is expected to dissolve into the gastrointestinal fluids to a very limited extent. Uptake by passive diffusion is possible, but limited due to the high molecular weight of the salt (average MW 959) and its dissociation product DNNSA (MW 461). CaDNNSA has a high log Pow 6.6), which makes the compound relatively hydrophobic. This characteristic will enable micellar solubilisation by bile salts in the gastro-intestinal tract which allows some crossing of lipid biomembranes. The structure contains an ionizable group (SO₃H), which might hamper diffusion across biological membranes. In addition, the molecular size of the molecule of 19 Å does not favor uptake across the biological membranes. In the 90-day study on CaDNNSA in the highest dose group 6/10 females died showing alterations in the gastro-intestinal tract, a small thymus and bone marrow atrophy. The surviving females at 1000 mg/kg bw showed similar effects and a reduced body weight (gain). The effects on the gastro-intestinal tract also became apparent in males at 300 and 1000 mg/kg bw. These animals also had a reduced body weight (gain). Other effects included changes in numbers of white blood cells, lymphocytes, platelets as well as effects on several biochemical parameters. Macroscopy and histopathology indicated that next to the GI-tract mainly the thymus and bone marrow could be considered as potentially affected in males at 300 mg/kg bw and above and in females at 1000 mg/kg bw. The effects on blood and blood forming organs as well as on the immune system are indicative for some absorption of the substance. This absorption may be enhanced due to the effects on the gastro intestinal tract lining. The metabolism of DNNSA salts is mainly contingent on both the nature of the alkyl groups and the nature and extent of naphthalene ring substitutions. There are currently no metabolism studies of CaDNNSA, however, the US EPA has evaluated the metabolism of analogs in the sodium alkyl naphthalenesulfonate cluster (SANS), a group of sodium salts of naphthalenesulfonic acids. In a US EPA final rule for SANS, it was stated that "the 1- or 2-sulfonic acid sodium salt moieties on the naphthalene ring may provide a handle by which these compounds can be readily conjugated and eliminated." Though the available information is not definitive for CaDNNSA, where the alkyl chains are much larger than for the naphthalenesulfonic acids evaluated by EPA, it is expected that the metabolism of the substance will be a factor, enhancing elimination. If absorbed, wide distribution of the CaDNNSA throughout the body is not expected based on its molecular size (18 Å). In general, molecules of this size do not pass readily through cell membranes, thus limiting wide distribution. Excretion of CaDNNSA and its potential metabolites will occur via the bile (high molecular weight) or the urine (low molecular weight). Irritation: Calcium bis(di-C8-10, branched, C9 rich, alkylnaphthalenesulphonate) is irritating to skin and eyes. It is not corrosive. Sensitisation: In the Buehler assay the substance was shown to be a weak skin sensitiser, while a human patch test showed no sensitization in human volunteers. Genetic toxicity: The Barium analog was found to be non-mutagenic in the Ames bacterial reverse mutation assay and the mouse lymphoma test (MLA). The substance was did not cause chromosomal aberrations in human peripheral lymphocytes. Reproductive toxicity: DNNSA (di C8-C10, branched, C9 rich, alkylnaphthalene sulphonic acid) is the major structural component of Calcium bis(di c8-c10, branched, c9 rich, alkylnaphthalene sulphonate). The OECD 422 repeat dose and reproduction/development study with DNNSA provides reliable read-across for developmental endpoints for Calcium bis(di c8-c10, branched, c9 rich, alkylnaphthalene sulphonate). A second OECD 422 study conducted with another analog, Barium bis(di c8-c10, branched, c9 rich, alkylnaphthalene sulphonate), showed no effects on development at the highest dose in the study of 150 mg/kg/day. Together these studies show that Calcium bis(di c8-c10, branched, c9 rich, alkylnaphthalene sulphonate) is not a developmental toxin. *REACH Dossier Animal studies show that calcium sulfonates with a TBN greater than 300 are not skin sensitizers while the results in animals at a TBN (Total Base Number) of 300 exhibit a mixed skin sensitisation response. However, human repeat insult patch tests clearly show that high TBN overbased calcium sulfonates (TBN = 300) are not sensitizers and that low TBN calcium sulfonates do not cause sensitisation in a substantial number of persons at concentrations of 10% or lower within the definition of sensitisation under EU Regulation (EC) No. 1272/2008. The weight-of-evidence indicates that low TBN sodium and calcium sulfonates (TBN < 300) are skin sensitizers with a specific concentration limit (SCL) of 10% and that high TBN sodium and calcium sulfonates (TBN = 300) are not skin sensitizers. Studies in guinea pigs show that low TBN benzenesulfonic acid, mono-C20-24 (even)-sec-alkyl derivs., para-, sodium salts (EC No. None; CAS No. None; TBN = 3) is a skin sensitizer while benzenesulfonic acid, mono-C20-24 (even)-sec-alkyl derivs., para-, sodium salts (TBN = 448) is not a skin sensitizer. Studies in guinea pigs and human volunteers show that low TBN benzenesulfonic acid, 4-(mono-C15-36 branched alkyl derivs., C24 rich) and benzenesulfonic acid, 4-octadecyl, calcium salts (EC 939-141-9; TBN = 13) are skin sensitizers. Numerous well-conducted, reliable, controlled human (HRIPT) studies with benzene, polypropene derivs., sulfonated, calcium salts (EC 616-278-7; TBN values ranging from 13 to 85), sulfonic acids, petroleum, calcium salts (EC 263-093-9; TBN = 30 to 100), and benzenesulfonic acid, 4-(mono-C15-36 branched alkyl derivs., C24 rich) and benzenesulfonic acid, 4-octadecyl, calcium salts (EC 939-141-6; TBN = 13) show that low TBN calcium sulfonates do not cause sensitisation in a substantial number of subjects at 10% and lower. High TBN calcium sulfonates, sulfonic acids, petroleum, calcium salts (EC 263-093-9; TBN = 375 and 400) do not cause skin sensitisation in guinea pigs. Results of guinea pigs studies at TBN = 300 are mixed; two studies of sulfonic acids, petroleum, calcium salts, (EC 263-093-9) report no skin sensitisation while one study of sulfonic acids, petroleum, calcium salts (EC 263-093-9) and one study of benzene, polypropene derivs., sulfonated, calcium salts (EC 616-278-7) report skin sensitisation. However, numerous well-conducted, reliable, controlled human (HRIPT) studies with benzene, polypropene derivs., sulfonated, calcium salts (EC 616-278-7; TBN = 300) and sulfonic acids, petroleum, calcium salts (EC 263-093-9; TBN = 300) also show that high TBN (TBN = 300) do not cause skin sensitisation. In accordance with EU CLP Regulation (EC) No. 1272/2008, classification is required for low TBN sodium and calcium sulfonates (TBN < 300) with a specific concentration limit of 10% and classification is not required for high TBN calcium sulfonates (TBN = 300). Linear alkyl benzene sulfonates are derived from strong corrosive acids. Animal testing has shown they can cause skin reactions, eye irritation, sluggishness, passage of frequent watery stools, weakness and may lead to death. They may also react with surfaces of the mouth and intestines, depending on the concentration exposed to. There is no evidence of harm to the unborn baby or tendency to cause cancer.</p>

NS-2717-G

NS-2717-G & OCTYLATED DIPHENYLAMINES	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.		
NAPHTHENIC DISTILLATE, HEAVY, HYDROTREATED (MILD) & BARIUM DINONYL NAPHTHALENESULFONATE	No significant acute toxicological data identified in literature search.		
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

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
	NS-2717-G	Not Available	Not Available	Not Available	Not Available
zinc diamylidithiocarbamate	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
naphthenic distillate, heavy, hydrotreated (mild)	Endpoint	Test Duration (hr)	Species	Value	Source
	ErC50	72h	Algae or other aquatic plants	>1000mg/l	1
	NOEC(ECx)	504h	Crustacea	>1mg/l	1
	EC50	48h	Crustacea	>1000mg/l	1
	EC50	96h	Algae or other aquatic plants	>1000mg/l	1
octylated diphenylamines	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50(ECx)	24h	Crustacea	4.2mg/l	Not Available
	EC50	72h	Algae or other aquatic plants	>100mg/l	2
	EC50	48h	Crustacea	51mg/l	2
	LC50	96h	Fish	5.1mg/l	Not Available
barium dinonyl naphthalenesulfonate	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
octylated diphenylamines	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
octylated diphenylamines	LOW (BCF = 5.5)

Mobility in soil

Ingredient	Mobility
octylated diphenylamines	LOW (KOC = 28640000)

Continued...

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> ▶ Recycle wherever possible or consult manufacturer for recycling options. ▶ Consult State Land Waste Management Authority for disposal. ▶ Recycle wherever possible or consult manufacturer for recycling options. ▶ Consult State Land Waste Authority for disposal. ▶ Bury or incinerate residue at an approved site. ▶ Recycle containers if possible, or dispose of in an authorised landfill.
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SECTION 14 Transport information

Labels Required

Marine Pollutant	NO
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Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

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

Not Applicable

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

Product name	Group
zinc diamyldithiocarbamate	Not Available
naphthenic distillate, heavy, hydrotreated (mild)	Not Available
octylated diphenylamines	Not Available
barium dinonyl naphthalenesulfonate	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
zinc diamyldithiocarbamate	Not Available
naphthenic distillate, heavy, hydrotreated (mild)	Not Available
octylated diphenylamines	Not Available
barium dinonyl naphthalenesulfonate	Not Available

SECTION 15 Regulatory information

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

zinc diamyldithiocarbamate is found on the following regulatory lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1: Carcinogenic to humans

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5

US CWA (Clean Water Act) - Priority Pollutants

US CWA (Clean Water Act) - Toxic Pollutants

US EPA Integrated Risk Information System (IRIS)

US EPCRA Section 313 Chemical List

US NIOSH Recommended Exposure Limits (RELs)

US OSHA Permissible Exposure Limits (PELs) Table Z-1

US OSHA Permissible Exposure Limits (PELs) Table Z-3

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

US TSCA Chemical Substance Inventory - Interim List of Active Substances

naphthenic distillate, heavy, hydrotreated (mild) is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1: Carcinogenic to humans

US - California Proposition 65 - Carcinogens

US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List

US DOE Temporary Emergency Exposure Limits (TEELs)

US National Toxicology Program (NTP) 15th Report Part A Known to be Human Carcinogens

US OSHA Permissible Exposure Limits (PELs) Table Z-1

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

US TSCA Chemical Substance Inventory - Interim List of Active Substances

octylated diphenylamines is found on the following regulatory lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1: Carcinogenic to humans

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5

US NIOSH Recommended Exposure Limits (RELs)

US OSHA Permissible Exposure Limits (PELs) Table Z-1

US OSHA Permissible Exposure Limits (PELs) Table Z-3

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

US TSCA Chemical Substance Inventory - Interim List of Active Substances

barium dinonyl naphthalenesulfonate is found on the following regulatory lists

US EPA Integrated Risk Information System (IRIS)

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

US TSCA Chemical Substance Inventory - Interim List of Active Substances

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

Flammable (Gases, Aerosols, Liquids, or Solids)	No
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	Yes
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No
Skin Corrosion or Irritation	No
Respiratory or Skin Sensitization	Yes
Serious eye damage or eye irritation	No
Specific target organ toxicity (single or repeated exposure)	No
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

None Reported

State Regulations

US. California Proposition 65

WARNING: This product can expose you to chemicals including **naphthenic distillate, heavy, hydrotreated (mild)**, which are known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov.

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (zinc diamylidithiocarbamate; naphthenic distillate, heavy, hydrotreated (mild); octylated diphenylamines; barium dinonyl naphthalenesulfonate)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (zinc diamylidithiocarbamate)

NS-2717-G

National Inventory	Status
Vietnam - NCI	Yes
Russia - FBEPH	No (zinc diamylthiocarbamate)
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	08/17/2022
Initial Date	08/18/2022

SDS Version Summary

Version	Date of Update	Sections Updated
0.2	08/16/2022	Ingredients

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

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

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
 PC—STEL: Permissible Concentration-Short Term Exposure Limit
 IARC: International Agency for Research on Cancer
 ACGIH: American Conference of Governmental Industrial Hygienists
 STEL: Short Term Exposure Limit
 TEEL: Temporary Emergency Exposure Limit.
 IDLH: Immediately Dangerous to Life or Health Concentrations
 ES: Exposure Standard
 OSF: Odour Safety Factor
 NOAEL :No Observed Adverse Effect Level
 LOAEL: Lowest Observed Adverse Effect Level
 TLV: Threshold Limit Value
 LOD: Limit Of Detection
 OTV: Odour Threshold Value
 BCF: BioConcentration Factors
 BEI: Biological Exposure Index
 AIIC: Australian Inventory of Industrial Chemicals
 DSL: Domestic Substances List
 NDSL: Non-Domestic Substances List
 IECSC: Inventory of Existing Chemical Substance in China
 EINECS: European INventory of Existing Commercial chemical Substances
 ELINCS: European List of Notified Chemical Substances
 NLP: No-Longer Polymers
 ENCS: Existing and New Chemical Substances Inventory
 KECI: Korea Existing Chemicals Inventory
 NZIoC: New Zealand Inventory of Chemicals
 PICCS: Philippine Inventory of Chemicals and Chemical Substances
 TSCA: Toxic Substances Control Act
 TCSI: Taiwan Chemical Substance Inventory
 INSQ: Inventario Nacional de Sustancias Químicas
 NCI: National Chemical Inventory
 FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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