

SAFETY DATA SHEET

ENERGY SPRING NS EcoGuard Grease EP2 — Biodegradable EP Grease

Issued in accordance with Singapore Standard SS 586-3:2022 (16-section GHS format). This document supersedes all previous versions.

SECTION 1 - Identification of the substance / mixture and of the supplier

1.1 Product identifier	NS EcoGuard Grease EP2
Product family	Readily biodegradable extreme-pressure (EP) lubricating grease, NLGI consistency grade 2. A lithium / calcium soap thickener carrying a fully saturated synthetic ester base oil of 150 mm²/s at 40 °C, with ashless sulphur-phosphorus and dithiocarbamate anti-wear and antioxidant additives. Operating temperature range -30 °C to +120 °C. Certified under the EU Ecolabel, licence no. NL/027/034. Classification: DIN 51502 KPE 2 K-30.
Grade(s)	NLGI 2 by ASTM D217, worked penetration 265 to 295 units (0.1 mm) at 25 °C.
Chemical identity	Mixture (lubricating grease)
CAS number	Not applicable (mixture)
1.2 Relevant identified uses	Extreme-pressure grease for total-loss and exposed lubrication points in environmentally sensitive service, where grease may escape to water or soil. On board: rudder stocks, propeller hubs and caps, wire ropes, winches, deck machinery and general greasing points. Shore-based: plain and rolling bearings, open gears, lock gates, pins and bushes. Applied manually, by grease gun or by centralised lubrication system. The intended service is the point of the product: these are applications in which the lubricant is expected to be lost to the environment rather than retained, which is why a readily biodegradable and Ecolabel-certified grease is specified for them. Release to the environment is therefore inherent in the use, and the precautions in Sections 6, 7 and 12 apply to routine application and not only to spillage. Identified use descriptors: SU2b (offshore industries), SU3 (industrial uses at industrial sites); PC24 (lubricants, greases, release products); PROC8a, PROC8b, PROC9, PROC10; ERC7, ERC9a, ERC9b. Industrial / professional use.

Uses advised against	Any use other than that stated above. Not for use as an engine oil, gear oil, hydraulic fluid, brake or clutch lubricant, fuel, solvent, cleaning agent or mould release agent, nor for any medicinal, food-contact or personal-care purpose. Not approved for incidental food contact (NSF H1). Do not use above +120 °C or below -30 °C. The upper service limit is set by the thickener and is below both the dropping point and the flash point of the base oil; neither of those figures is a service temperature (see Section 9). Do not mix with greases of a different thickener type, and avoid mixing with barium and bentonite (clay) thickened products in particular. Thickener incompatibility can cause severe softening or hardening of the grease in service and consequent bearing failure. When converting equipment from another grease, purge the bearing or system completely and re-grease at short intervals until only the new product is discharging, bearing in mind that dead spots may retain the old grease. Not a substitute where a grease containing molybdenum disulphide, graphite or another solid lubricant is specified or has been found necessary: this product contains no solid lubricant. Confirm compatibility with seal, paint and coating materials before use. A synthetic ester base oil is not interchangeable with a mineral oil in this respect, and this is the compatibility question most likely to cause trouble on conversion.
1.3 Supplier of the safety data sheet	ENERGY SPRING PTE LTD 3 Temasek Avenue, #21-00 Centennial Tower Singapore 039190 Tel: +65 6993 9836 E-mail: info@energy-spring.sg Web: https://energy-spring.sg/
Manufactured / blended by	Product supplied under a manufacturing agreement. Manufacturer details available from ENERGY SPRING PTE LTD on request.
1.4 Emergency telephone number	ENERGY SPRING PTE LTD (office hours, Mon - Fri 09:00 - 18:00 SGT): +65 6993 9836 Singapore - emergency services (SCDF: ambulance and fire): 995 Singapore - Drug and Poison Information Centre (DPIC), Singapore General Hospital, 24-hour hotline: +65 6423 9119 Outside Singapore: contact the local emergency services or the national poison information centre for the country in which the incident occurs. Within the EU / EEA: 112.

Product	NLGI consistency grade	Product type	GHS classification
NS EcoGuard Grease EP2	2	Biodegradable extreme-pressure grease	Not classified as hazardous

SECTION 2 - Hazards identification

2.1 Classification of the substance or mixture	GHS classification (SS 586-2 / SS 586-3; CLP Regulation 1272/2008): NOT CLASSIFIED AS HAZARDOUS. Health hazards: not classified. Environmental hazards: not classified. Physical hazards: not classified. The mixture has been assessed against the classification criteria of SS 586-2 by the generic cut-off and summation methods. Each of the hazardous components identified in Section 3 is present below the concentration at which it would classify the mixture: - Eye irritation. The alkyl naphthalene sulphonic acid calcium salt (Eye Irrit. 2; H319) is present below 2.5 % w/w, against a 10 % additivity threshold. - Skin sensitisation. The alkyl dithiophosphate (Skin Sens. 1B; H317) is present below 1 % w/w, against the 1.0 % generic concentration limit. The supplemental statement EUH208 applies because the component is present at 0.1 % or more. - Chronic aquatic hazard. The two Aquatic Chronic 4 components (H413) sum to not more than 11 % w/w, against a 25 % threshold. No component carries an Aquatic Chronic 1, 2 or 3 classification or an M-factor. - Acute toxicity, skin irritation, respiratory sensitisation, germ cell mutagenicity, carcinogenicity, reproductive toxicity, STOT (single and repeated exposure) and aspiration: criteria not met. 'Not classified' is a statement about the GHS criteria. It does not mean the product is harmless, and it does not mean the product may be discharged to drains, watercourses or the ground - see Section 12.
2.2 Label elements	Pictogram: None required Signal word: None required Hazard statements: None required Supplemental information: EUH208: Contains alkyl dithiophosphate. May produce an allergic reaction. Safety data sheet available on request. Recommended handling precautions (good occupational practice, not label elements): P102: Keep out of reach of children. P262: Do not get in eyes, on skin, or on clothing. P264: Wash skin thoroughly after handling. P273: Avoid release to the environment. P280: Wear protective gloves and eye / face protection. P501: Dispose of contents and container in accordance with local regulations.
2.3 Other hazards - high-pressure injection from grease equipment	This is the principal hazard associated with this product in service. A hand-operated grease gun readily develops several hundred bar at the nozzle, and powered and centralised equipment more. Grease escaping from a nozzle, coupler, hose or fitting at that pressure can penetrate intact skin and inject grease deep into the tissue. The entry wound may be no more than a pinprick and may be almost painless at first, but the injected material causes swelling, ischaemia and tissue necrosis, and amputation may result if treatment is delayed. Injuries to the fingers and hand are the common presentation, since the hand is used to steady the coupler. Never place any part of the body in front of a grease nozzle or over a coupler while pressure is applied, do not use a hand to check for a blocked or leaking fitting, and depressurise the equipment before clearing a blockage. Any suspected injection injury is a surgical emergency - see Section 4.
Hot equipment and hot grease	Greasing points on operating machinery are frequently hot. Grease purged from a hot bearing can cause thermal burns, and a bearing housing packed with grease may release hot material under pressure when a plug or cover is removed. Stop and isolate the machine, and allow it to cool, before opening a bearing housing.

Skin effects	The product is not classified as a skin irritant and does not generally irritate the skin. It contains an alkyl dithiophosphate which is a skin sensitiser at higher concentrations; although the mixture is not classified, EUH208 applies and an allergic skin reaction in susceptible individuals cannot be excluded. Prolonged or repeated contact may also cause defatting of the skin, leading to dryness or dermatitis, and grease held against the skin by contaminated clothing or a glove liner can clog the pores, resulting in oil acne or folliculitis.
Used and contaminated grease	In service the grease picks up wear metals, water and oxidation products, and in some applications process contamination. Purged and waste grease should be handled with the same precautions as the fresh product and skin contact avoided. The environmental profile of the fresh product does not extend to waste grease recovered from equipment, which is assessed as waste on its own properties - see Section 13.
Slip hazard	Grease dropped or purged onto a walking surface, or trodden from a greasing point onto a stair or ladder rung, produces a severe and persistent slip hazard which is not removed by sweeping. Clean up immediately with absorbent material and a degreasing agent.
PBT / vPvB	PBT: not applicable. vPvB: not applicable. No ingredient is considered to meet the PBT or vPvB criteria at 0.1 % or higher.
Endocrine disrupting properties	The mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f), Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1 % or higher, for either human health or the environment.

SECTION 3 - Composition / information on ingredients

Component	CAS / EC number	Approx. % w/w	GHS classification
Fully saturated synthetic ester base oil	Proprietary	Balance	Not classified
Lithium / calcium soap thickener	Proprietary	Balance	Not classified
Methylene-bis(dibutylthiocarbamate)	CAS 10254-57-6 EC 233-593-1	2.5 - 10	Aquatic Chronic 4; H413
Alkyl naphthalene sulphonic acid, calcium salt	Proprietary	< 2.5	Eye Irrit. 2; H319
Alkyl dithiophosphate	Proprietary	< 1	Skin Sens. 1B; H317 Aquatic Chronic 4; H413

- Substance / mixture: Mixture. Chemical nature: a fully saturated synthetic ester base oil in a lithium / calcium soap thickener, with ashless sulphur-phosphorus and dithiocarbamate anti-wear and antioxidant additives.
- The base oil and the thickener together make up the balance of the formulation. Neither is classified as hazardous to health or the environment.
- Components shown as proprietary are identified by chemical family, their precise identifiers being withheld to protect confidentiality. Full identification is available to a physician or to a competent authority on request, and to a downstream user where required for the purposes of a workplace risk assessment.
- Concentrations are shown as ranges to protect confidentiality or to reflect batch-to-batch variation. Where a range is open at the top, the classification in Section 2 has been assessed at the upper bound.
- The alkyl dithiophosphate is present at 0.1 % or more, which requires the supplemental labelling statement EUH208 even though the mixture is not classified as a skin sensitiser.
- There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

SECTION 4 - First aid measures

4.1 Description of first aid measures - General	Remove clothing soiled by the product without delay. Move affected persons into fresh air. In the event of serious problems, call a doctor or summon medical assistance urgently. Show this safety data sheet to the medical personnel in attendance.
Inhalation	Not a likely route of exposure: the product is a grease and does not generate vapour or mist at ambient temperature. Supply fresh air and consult a doctor in the event of complaints. If fume from overheated or burning product has been inhaled, move the person to fresh air and obtain medical attention.

Skin contact	Wipe off the bulk of the grease, then wash the affected area with soap and water and rinse thoroughly. Do not use solvents, petrol or abrasive cleaners. Remove contaminated clothing. If skin irritation continues, or if a rash develops, obtain medical advice: the product contains a sensitising component and further exposure should then be prevented. Launder contaminated clothing before reuse. Hot product: cool the affected area immediately with cold running water for at least 15 minutes. Do not attempt to remove grease adhering to burned skin. Obtain medical attention for thermal burns. HIGH-PRESSURE INJECTION INJURY - grease injected under the skin from a grease gun or lubrication system is a surgical emergency. Obtain medical attention immediately and state that this is a high-pressure injection injury. Do not wait to see whether symptoms develop and do not treat the wound as a simple puncture: the entry wound may look trivial while the injected material is causing progressive tissue damage. Keep the limb elevated and immobilised; do not apply heat. Take this safety data sheet to the hospital.
Eye contact	Rinse the open eye for several minutes under running water, holding the eyelids apart. Remove contact lenses if worn and easy to do, and continue rinsing. Marked chemical irritation is not expected, but mechanical irritation from the grease itself is likely. Obtain medical advice if irritation persists after rinsing.
Ingestion	Do not induce vomiting. Rinse the mouth with water. Obtain medical advice if symptoms persist. Never give anything by mouth to an unconscious person.
4.2 Most important symptoms and effects, both acute and delayed	Skin: mechanical soiling; dryness or dermatitis after prolonged or repeated contact; oil acne or folliculitis where grease is held against the skin. An allergic skin reaction is possible in susceptible individuals (EUH208) and may be delayed by 24 to 72 hours after contact. Thermal burns from hot product. Eyes: mechanical irritation, redness and watering on direct contact. Injection injury: a small entry wound with little initial pain, followed within hours by swelling, pallor, loss of sensation and severe pain in the affected digit or limb. Ingestion: no significant effects expected from incidental amounts.
4.3 Indication of any immediate medical attention and special treatment needed	For ordinary exposures, treat symptomatically; no specific antidote is required and no special measures are normally needed. Note to physician - high-pressure injection: injection of grease through the skin requires prompt surgical assessment, with decompression, debridement and irrigation, regardless of how minor the entry wound appears. Delay is the principal determinant of tissue loss. Grease is not radio-opaque in all formulations, so imaging may understate the extent of spread. Note to physician - sensitisation: a persistent or recurrent eczematous reaction in a worker handling this product warrants dermatological assessment and patch testing, with the alkyl dithiophosphate component in mind. Full composition details are available from ENERGY SPRING PTE LTD on request.

SECTION 5 - Fire-fighting measures

5.1 Extinguishing media	Suitable: foam, dry chemical powder, carbon dioxide, water fog or water spray. Use extinguishing methods suitable to the surrounding conditions. Unsuitable: direct water jet, which may spread burning material.
5.2 Special hazards arising from the substance or mixture	The product is a combustible semi-solid with a high flash point (see Section 9). It does not readily ignite, but it will burn once heated, and grease absorbed into lagging, rags or absorbent material burns readily. Combustion or thermal decomposition produces a complex mixture of airborne solids, liquids and gases, highly dependent on combustion conditions, including carbon monoxide, carbon dioxide, sulphur dioxide, oxides of phosphorus and nitrogen, metal oxides from the thickener, and unidentified organic compounds. Hydrogen sulphide may be released from the dithiocarbamate and dithiophosphate components in strongly overheated product. Sulphur dioxide and hydrogen sulphide are both acutely toxic. Containers exposed to fire may rupture. Cool exposed containers with water spray.

5.3 Advice for fire-fighters	Wear full protective clothing and self-contained positive-pressure breathing apparatus. Collect contaminated fire-fighting water separately; it must not enter the sewage system or any watercourse.
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SECTION 6 - Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures	Wear gloves and eye protection and avoid skin contact. Beware of slippery surfaces and floors, which are the main risk arising from a grease spillage. Keep unprotected and non-essential persons away. Beware of hot product near operating machinery. Emergency responders: protective clothing, chemical-resistant gloves, goggles and antistatic, slip-resistant footwear.
6.2 Environmental precautions	Do not allow the product to enter sewers, surface water or groundwater, and do not allow it to penetrate the ground. The product is assigned water hazard class WGK 2 (hazardous for water) by self-assessment under the German regulations, and small quantities reaching the ground may endanger drinking water. Readily biodegradable does not mean releasable. Contain and absorb spillage rather than flushing it away: washing a spillage down with water is the mechanism by which grease reaches a drain. Inform the relevant authorities if the product has entered the environment or a public sewer.
6.3 Methods and material for containment and cleaning up	Scrape or shovel up the bulk of the material mechanically and transfer it to a labelled, closable container for disposal. Absorb residues with a liquid-binding material such as sand, diatomite, acid binder, universal binder or sawdust. Finish with a degreasing agent to remove the slip hazard from the surface, and collect the washings for disposal rather than flushing them to drain. Send contaminated materials to an approved collection or disposal facility.
6.4 Reference to other sections	See Section 7 for safe handling, Section 8 for personal protective equipment and Section 13 for disposal.

SECTION 7 - Handling and storage

7.1 Precautions for safe handling	Avoid contact with skin, eyes and clothing. Wear gloves and eye protection when applying grease or purging a bearing. Do not eat, drink or smoke in areas where the product is handled. Wash hands thoroughly after handling and before breaks. Do not carry grease-soaked rags in pockets. Grease equipment - never place any part of the body in front of a grease nozzle or over a coupler while pressure is applied. Do not use a hand to locate a blocked or leaking fitting. Depressurise the gun or lubrication line before clearing a blockage, changing a coupler or breaking a connection. Inspect hoses and couplers for damage before use and replace them on a planned basis. See Sections 2 and 4. Stop, isolate and lock out machinery, and allow it to cool, before opening a bearing housing or gearcase. Where greasing points must be served with the machine running, use extended lines to bring the greasing point away from moving parts. Keep away from foodstuffs, beverages and feed.
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7.2 Conditions for safe storage, including any incompatibilities	Store in a cool, dry, well-ventilated area in the original closed containers, away from sources of heat and ignition and out of direct sunlight. Store away from foodstuffs and away from oxidising agents (see Section 10). Keep out of the reach of children. Keep containers closed and correctly labelled, including the EUH208 statement. Prevent any seepage into the ground. Shelf life: 5 years in the original sealed container stored out of direct sunlight. Grease may separate oil slowly in storage; a small amount of oil on the surface of the grease is normal and is stirred back in. Store drums and kegs upright and protected from water ingress. The base oil is a fully saturated synthetic ester, which is considerably more hydrolytically stable than an unsaturated natural ester, but it remains an ester and water in storage matters more for this product than for a mineral oil grease. Recommended storage temperature: 0 °C to 40 °C. Container warning: empty containers retain product residue and can be dangerous. Do not cut, weld, braze, solder, drill, grind or expose such containers to heat, flame or sparks. Empty containers should be scraped out as far as practicable, properly closed and disposed of through an approved contractor.
7.3 Specific end use(s)	Lubrication of bearings and greasing points requiring an NLGI 2 extreme-pressure grease, in total-loss and exposed applications where a readily biodegradable product is specified. Operating temperature range -30 °C to +120 °C; base oil viscosity 150 mm²/s at 40 °C, which sets the speed and temperature range over which the grease is suitable. Do not mix with greases of a different thickener type, and do not substitute where a solid-lubricant grease is specified - see Section 1. Refer to the product technical data sheet for further application guidance.

SECTION 8 - Exposure controls / personal protection

8.1 Control parameters — occupational exposure limits

Component / parameter	Source	TWA (8 h)	STEL / Ceiling
Synthetic ester base oil	Singapore / ACGIH / EU	None established	None established
Lithium / calcium soap thickener	Singapore / ACGIH / EU	None established	None established
Additive components (Section 3)	Singapore / ACGIH / EU	None established	None established

8.1 Control parameters - note	No occupational exposure limit is established for any component of this product. The base oil is a fully saturated synthetic ester, not a mineral oil, so the occupational exposure limits for mineral oil mist are not the applicable standard and are not reproduced here. In any event a grease generates very little airborne material at ambient temperature and inhalation exposure is not normally significant. Exposure to the alkyl dithiophosphate should be minimised as far as reasonably practicable, as is appropriate for a sensitising component. No biological limit values have been established for this product. DNEL / PNEC: not determined for this mixture.
8.2 Exposure controls - general considerations	Consider the potential hazards of this material (Section 2), the job activities and other substances in the workplace when selecting personal protective equipment. The user should read and understand all instructions and limitations supplied with the equipment, since protection is usually provided for a limited time or under certain circumstances only. For this product the controls that matter are mechanical rather than respiratory: the integrity and safe use of grease application equipment, isolation and lock-out of machinery before opening bearing housings, and prompt clean-up of spillage to remove the slip hazard. These are addressed in Section 7.
Engineering controls	No special engineering controls are required for normal handling. Provide washing facilities and a suitable skin cleanser at greasing stations. Provide eyewash facilities where grease is dispensed under pressure. Where greasing points are difficult or hazardous to reach, fit extended lubrication lines or an automatic lubrication system rather than relying on access under guard.

Respiratory protection	Not required under normal conditions of use. Use suitable respiratory protection if fume is generated from overheated product, or for entry into a confined space containing degraded or burnt product.
Hand protection	Oil-resistant, impermeable gloves; nitrile rubber is the usual choice for a grease of this type. Confirm the material with the glove supplier for the actual task: the base oil is a synthetic ester, ester resistance differs from mineral oil resistance, and a glove rated only for mineral oil is not automatically suitable. Determined penetration times are not measured under practical conditions, so a maximum wearing time of 50 % of the penetration time is recommended. Use heat-resistant gloves when working on hot equipment. Replace gloves immediately if damaged or contaminated internally - a glove holding grease against the skin is worse than no glove, given the sensitising component.
Eye protection	Safety glasses with side shields to EN 166 as a minimum. Wear chemical goggles or a face shield where grease is dispensed under pressure, where a bearing is being purged, or where hot product may be released.
Skin and body protection	Oil-resistant protective work clothing and safety footwear. Change contaminated clothing promptly; grease held against the skin by clothing is a common cause of oil acne and folliculitis. Store protective clothing separately from personal clothing.
Hygiene measures	Wash hands with soap and water before breaks, before eating, drinking or smoking, and at the end of work. Use a suitable skin cream after washing. Do not use solvents, petrol or abrasive cleaners to remove grease from the skin. Keep the product away from foodstuffs, beverages and feed.
Environmental exposure controls	Avoid release to the environment. Prevent discharge to drains, surface water, groundwater and soil - see the note on WGK 2 in Section 6. Keep absorbent and containment materials at greasing and dispensing points. See Sections 6, 12 and 13.

SECTION 9 - Physical and chemical properties

Physical state at 20 °C	Semi-solid (grease)
Appearance / colour	Amber grease
Odour	Characteristic
Odour threshold	Not determined
pH	Not applicable (non-aqueous product)
NLGI consistency grade	2 (ASTM D217)
Worked penetration at 25 °C	265 to 295 units (0.1 mm), ASTM D217
Dropping point	>= 175 °C (ASTM D2265)
Base oil kinematic viscosity at 40 °C	150 mm ² /s (ASTM D445)
Operating temperature range	-30 °C to +120 °C. The upper limit is set by the thickener, not by the dropping point or the flash point.
Thickener / base oil	Lithium / calcium soap thickener; fully saturated synthetic ester base oil
Product classification	DIN 51502 KPE 2 K-30
Melting / freezing point	Not applicable to a grease
Initial boiling point / range	Not determined
Flash point	> 180 °C (base oil). Flash point is a property of the base oil and is not a measure of the maximum service temperature of the grease, which is +120 °C.
Flammability	Not applicable (not a flammable solid or gas)
Upper / lower explosion limits	Not determined
Ignition temperature	The product is not self-igniting
Decomposition temperature	Not determined; see Sections 5 and 10
Explosive properties	The product does not present an explosion hazard
Oxidising properties	Not oxidising

Vapour pressure	Negligible
Vapour density (air = 1)	Not determined
Density / relative density	Not determined
Solubility / miscibility in water	Insoluble and immiscible; floats on water
Partition coefficient n-octanol/water	Not determined
Kinematic / dynamic viscosity of the grease	Not determined. Kinematic viscosity is not a meaningful property of a grease; see the base oil viscosity and the consistency grade above.
Solids content	No added solid lubricant. The product contains no molybdenum disulphide, graphite or other solid lubricant.
Evaporation rate	Not determined
Physical hazard classes	Explosives, flammable gases, aerosols, oxidising gases, gases under pressure, flammable liquids, flammable solids, self-reactive substances and mixtures, pyrophoric liquids and solids, self-heating substances and mixtures, substances and mixtures which emit flammable gases in contact with water, oxidising liquids and solids, organic peroxides, corrosive to metals, desensitised explosives: none applicable.
9.2 Other information	The product resists washout by rain and seawater, protects steel and copper alloys against corrosion in wet, salt-laden service, and maintains film strength on heavily loaded bearings, pins and open gears under shock loading. Refer to the product technical data sheet for further performance information.

SECTION 10 - Stability and reactivity

10.1 Reactivity	No dangerous reaction known under conditions of normal use.
10.2 Chemical stability	Stable under conventional conditions of storage, handling and use, and no decomposition if used according to specification. In service, oxidative degradation is accelerated by high bearing temperature, water contamination and catalytic wear metals, and the grease will eventually harden, soften or separate oil; observe the relubrication interval. The base oil is a fully saturated synthetic ester. Saturated esters are markedly more resistant to oxidation and hydrolysis than unsaturated natural esters, but ester hydrolysis in the presence of water at elevated temperature remains the degradation route to watch: it degrades the oil and raises acidity. Exclude water from bearings and from storage.
10.3 Possibility of hazardous reactions	Hazardous polymerisation will not occur. No dangerous reactions known under normal conditions of storage and use.
10.4 Conditions to avoid	Heat, sparks, naked flame and other sources of ignition. Direct sunlight. Prolonged exposure to high temperatures, which promotes oxidation, thermal degradation and oil separation. Water contamination. Contact with oxidising agents.
10.5 Incompatible materials	Strong oxidising agents and strong acids. Greases of a different thickener type - not a chemical hazard, but the practical incompatibility which most often causes trouble with this class of product. The thickener here is a lithium / calcium soap; mixing with barium and with bentonite (clay) thickened greases is specifically to be avoided. See Section 1. Elastomers, paints and coatings: to be checked before use. A synthetic ester base oil is more aggressive towards some elastomers and coatings than a mineral oil.
10.6 Hazardous decomposition products	None under normal conditions of storage and use. On combustion or strong overheating the additive system will yield sulphur dioxide, oxides of phosphorus and nitrogen, metal oxides, carbon monoxide, carbon dioxide and unidentified organic compounds; hydrogen sulphide may be released from the dithiocarbamate and dithiophosphate components. See Section 5. If decomposition is suspected, or if the product has been overheated, discontinue heating and secure the equipment. Avoid exposure to the resulting fume.

SECTION 11 - Toxicological information

11.1 Basis for assessment	Information given is based on data on the components and on the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole rather than for individual components.
Exposure routes	Skin contact is the primary route of exposure. Eye contact may occur by splashing or by transfer from contaminated hands. Inhalation is not a significant route for a grease at ambient temperature. Injection through the skin from pressurised grease equipment is a distinct and serious route of exposure - see Sections 2 and 4.
Acute toxicity	Based on available data, the classification criteria are not met. Acute oral toxicity: LD50 rat > 2,000 mg/kg.
Skin corrosion / irritation	Based on available data, the classification criteria are not met. The product does not generally irritate the skin. Prolonged or repeated contact may nonetheless cause defatting, leading to dryness or dermatitis, and grease held against the skin can clog the pores, resulting in oil acne or folliculitis.
Serious eye damage / eye irritation	Based on available data, the classification criteria are not met. The alkyl naphthalene sulphonic acid calcium salt (Eye Irrit. 2; H319) is present below 2.5 % w/w, against a 10 % additivity threshold. Mechanical irritation from the grease itself may still occur on direct contact.
Respiratory or skin sensitisation	Based on available data, the classification criteria are not met. The alkyl dithiophosphate (Skin Sens. 1B; H317) is present below 1 % w/w, against the 1.0 % generic concentration limit. Because it is present at 0.1 % or more, the supplemental statement EUH208 applies and an allergic skin reaction in susceptible individuals cannot be excluded. Signs and symptoms would include itching, redness and rash, possibly delayed by 24 to 72 hours after contact. Once a worker is sensitised, reactions may be provoked by very low exposures. Respiratory sensitisation: criteria not met.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT - single exposure	Based on available data, the classification criteria are not met.
STOT - repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met. The product is a grease and is not capable of being aspirated in the sense of the criterion.
Endocrine disrupting properties	None of the ingredients is listed as having endocrine disrupting properties. See the note in Section 2.
Notes to physician	Treat symptomatically; no specific antidote is required. For a high-pressure injection injury, see the note in Section 4.3, which is the one presentation associated with this product that requires urgent intervention.
Additional information - used grease	Purged and waste grease may contain wear metals, water and oxidation products, and in some applications process contamination. Handle with the same precautions as the fresh product and avoid skin contact.

SECTION 12 - Ecological information

12.1 Toxicity	Not classified for aquatic hazard. The two Aquatic Chronic 4 components declared in Section 3 sum to not more than 11 % w/w against a 25 % summation threshold, and no component carries an Aquatic Chronic 1, 2 or 3 classification or an M-factor. The product is considered practically non-toxic in the aquatic environment. The EU Ecolabel criteria for lubricants, under which this product is certified, place limits on aquatic toxicity.
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12.2 Persistence and degradability	Readily biodegradable. The EU Ecolabel criteria for lubricants require the constituents to be predominantly biodegradable, and the product is certified against them. Biodegradability is assessed by the 28-day OECD 301B test (CO ₂ evolution / modified Sturm test).
12.3 Bioaccumulative potential	No potential for bioaccumulation is expected. The EU Ecolabel criteria require the absence of bioaccumulative substances, and the product is certified against them.
12.4 Mobility in soil	Semi-solid under environmental conditions; low mobility in soil, and will adsorb to soil particles rather than migrate. Floats on water. Notwithstanding the low mobility, small quantities reaching the ground may endanger drinking water.
12.5 Results of PBT and vPvB assessment	PBT: not applicable. vPvB: not applicable.
12.6 Endocrine disrupting properties	The product does not contain substances with endocrine disrupting properties.
12.7 Other adverse effects	Water hazard class WGK 2 (German regulations, by self-assessment): hazardous for water. Do not allow the product to reach groundwater, a watercourse or the sewage system. Danger to drinking water if even small quantities leak into the ground. This sits alongside, and is not cancelled by, the Ecolabel certification and the ready biodegradability of the product. NS EcoGuard Grease EP2 is designed for total-loss applications in which some release is inherent, and it is formulated to limit the consequences of that release - not to make release acceptable. Deliberate disposal to ground or water remains prohibited, and spillage is still to be contained and collected (Section 6). The product has no ozone depletion potential and is a mixture of non-volatile components which will not be released to air in significant quantities under normal conditions of use.

SECTION 13 - Disposal considerations

13.1 Waste treatment methods - product	Deliver waste product to officially authorised collectors only. Do not dispose of with household waste and do not allow the product to reach the sewage system. Waste may be disposed of in a suitable incinerator or recovered, provided that national and local legislation is complied with. In Singapore, waste lubricant is a toxic industrial waste under the Environmental Public Health (Toxic Industrial Waste) Regulations and must be collected by a licensed toxic industrial waste collector. The biodegradability of the fresh product does not alter that: purged grease has picked up wear metals and contamination and is assessed as waste on its own properties. For supply into the EU, the European waste catalogue code is to be assigned by the waste holder according to the origin of the waste.
Contaminated packaging	Empty containers retain product residue and their labelling, including the EUH208 statement, must remain legible until the container is cleaned. Scrape out as far as practicable, close properly and dispose of through an approved contractor. Packaging may be reused or recycled after cleaning. Recommended cleansing agent: water, if necessary together with a cleansing agent; collect the washings for disposal rather than flushing them to drain. Do not cut, weld, drill or apply heat to empty containers (see Section 7).

SECTION 14 - Transport information

General	Not classified as a dangerous good for transport by any mode, and not a marine pollutant. The description shown may not apply to all shipping situations. Consult the applicable dangerous goods regulations for additional description requirements and for mode-specific or quantity-specific shipping requirements.
14.1 UN number	Not applicable - not regulated (ADR, RID, IMDG, IATA, DOT)

14.2 UN proper shipping name	Not applicable - not regulated. Commercial description: lubricating grease.
14.3 Transport hazard class(es)	Not applicable - not regulated
14.4 Packing group	Not applicable - not regulated
14.5 Environmental hazards	Marine pollutant: No. Not classified as environmentally hazardous for land transport.
14.6 Special precautions for user	None applicable under the transport regulations. Keep separate from foodstuffs. Handle in accordance with Sections 6, 7 and 8.
14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code	Not applicable. The product is not carried in bulk as cargo.
UN Model Regulations	Not hazardous for transport.

SECTION 15 - Regulatory information

15.1 Safety, health and environmental regulations specific to the product	Singapore: - Classification and labelling in accordance with SS 586-2 and SS 586-3. The product is not classified as hazardous and requires no pictogram, signal word or hazard statement. The supplemental statement EUH208 is to appear on the label. - Workplace Safety and Health Act and subsidiary regulations: no permissible exposure level is applicable to the components of this product (Section 8). Employers should include the EUH208 sensitisation statement and the high-pressure injection risk from grease equipment in their risk assessment. - Environmental Public Health (Toxic Industrial Waste) Regulations: waste grease - see Section 13. - Fire Safety Act and Fire Safety (Petroleum and Flammable Materials) Regulations: not applicable. International: - MARPOL 73/78 Annex I applies to the discharge and disposal of waste lubricant. - IMDG Code: not applicable - not regulated.
Environmental labelling and EAL schemes	EU Ecolabel: Regulation (EC) 66/2010 and the lubricants criteria decision. This product is certified under licence no. NL/027/034, held by ENERGY SPRING PTE LTD. The Ecolabel criteria require predominantly biodegradable constituents, the absence of bioaccumulative substances, limited aquatic toxicity and a high renewable carbon content. US Vessel General Permit 2013: the product meets the VGP definition of an Environmentally Acceptable Lubricant on the basis of the Ecolabel certification, the two sets of criteria covering substantially the same ground.
Notes for supply into the EU / EEA	- REACH Regulation 1907/2006 and Regulation (EU) 2020/878 (safety data sheet format). - CLP Regulation 1272/2008. EUH208 applies. No Unique Formula Identifier or poison centre notification under CLP Article 45 / Annex VIII is required, the mixture not being classified. - Directive 2012/18/EU (Seveso III), Annex I: no named substances contained. - Directive 2011/65/EU (RoHS), Annex II: no listed substances contained. - Regulation (EU) 2019/1148 on explosives precursors, Annexes I and II: no listed substances contained. - Regulation (EC) 273/2004 and Regulation (EC) 111/2005 on drug precursors: no listed substances contained. - REACH Candidate List of Substances of Very High Concern: no component is present at 0.1 % w/w or above.
Chemical inventory status	The components of this product are listed on, or exempt from, the inventories of the European Union (REACH) and the United States (TSCA). Status on other national inventories is available from ENERGY SPRING PTE LTD on request for the territory of supply.
15.2 Chemical safety assessment	No chemical safety assessment has been carried out for this mixture.

SECTION 16 - Other information

Performance level	Meets or exceeds DIN 51502 KPE 2 K-30. EU Ecolabel certified, licence no. NL/027/034. Refer to the product technical data sheet for the full specification and application guidance.
Revision date	12 September 2026
Revision number	Rev. 0
Reason(s) for revision	First issue by Energy Spring Pte Ltd.
Reference(s)	Singapore Standard SS 586-2:2022 and SS 586-3:2022 (classification, labelling and safety data sheets for hazardous chemicals and dangerous goods). CLP Regulation 1272/2008, Annex I Parts 3 and 4 (classification criteria and summation methods). ASTM D217 (cone penetration of lubricating grease), ASTM D445 (kinematic viscosity), ASTM D2265 (dropping point), DIN 51502 (designation of lubricating greases), OECD Test Guideline 301B (ready biodegradability). Regulation (EC) 66/2010 (EU Ecolabel). US EPA Vessel General Permit 2013. Physical and product data from the NS EcoGuard Grease EP2 technical data sheet, Version 1.0, September 2026. Classification of the mixture carried out by the generic cut-off and summation methods using component data.
Recommended uses and restrictions on use	See Section 1.
Full text of hazard statements referred to in Sections 2 and 3	H317: May cause an allergic skin reaction. H319: Causes serious eye irritation. H413: May cause long lasting harmful effects to aquatic life. EUH208: Contains [name of sensitising substance]. May produce an allergic reaction.
Training	Suitable training on the safe handling and storage of this product should be given to employees on the basis of all the information in this safety data sheet, with particular attention to the high-pressure injection risk from grease guns and centralised lubrication equipment, to the avoidance of skin contact given the sensitising component, to the prevention of release to drains and watercourses, and to the prompt clean-up of spillage as a slip hazard.
Abbreviations and acronyms	ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; Aquatic Chronic - hazardous to the aquatic environment, long-term; Asp. Tox. - aspiration hazard; ASTM - American Society for Testing and Materials; BCF - bioconcentration factor; CAS - Chemical Abstracts Service; CLP - Classification, Labelling and Packaging Regulation; DIN - Deutsches Institut fuer Normung; DNEL - derived no-effect level; EAL - environmentally acceptable lubricant (US VGP); EC / EINECS - European Community number / European Inventory of Existing Commercial Chemical Substances; EP - extreme pressure; ERC - environmental release category; EUH - supplemental EU hazard statement; Eye Irrit. - eye irritation; GHS - Globally Harmonized System; IATA - International Air Transport Association; IBC - International Bulk Chemical Code; IMDG - International Maritime Dangerous Goods; LD50 - lethal dose 50 %; log Kow / log Pow - logarithm of the n-octanol/water partition coefficient; M-factor - multiplying factor for aquatic classification; NLGI - National Lubricating Grease Institute; NSF H1 - registration for lubricants with incidental food contact; OECD TG - Organisation for Economic Co-operation and Development Test Guideline; PBT - persistent, bioaccumulative and toxic; PC - product category; PEL - permissible exposure level; PNEC - predicted no-effect concentration; PROC - process category; REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; Skin Sens. - skin sensitisation; STEL - short-term exposure limit; STOT - specific target organ toxicity; SU - sector of use; SVHC - substance of very high concern; TWA - time-weighted average; UFI - unique formula identifier; VGP - Vessel General Permit (US EPA); vPvB - very persistent and very bioaccumulative; WGK - Wassergefahrdungsklasse (German water hazard class).
Note on the scope of this data sheet	This data sheet covers NS EcoGuard Grease EP2 only. It must not be used for any other consistency grade or any other product in the NS EcoGuard range.

This dossier supplements the technical notifications for use, but does not replace them. The information which it contains is based on our knowledge relating to the product in question on the date indicated.

The information is given in good faith. The user's attention is also drawn to the possible risks incurred if a product is employed for uses other than those for which it was designed.

This information dossier does not, under any circumstances, discharge the user from the obligation of being aware of, and of applying, all the texts which govern his sphere of activity. He shall be solely responsible for taking the precautions associated with the use which he makes of the product.

All the statutory provisions referred to are intended simply to assist the recipient in fulfilling the obligations incumbent upon him. This enumeration must not be considered to be exhaustive. The recipient must ensure that no other obligations are incumbent upon him, as a result of texts other than those cited, relating to the holding and handling of the product, for which he alone is responsible.

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