1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product name : Shell Gadus S3 V220C 2

Product code : 001D8425

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell India Markets Private Limited**
Commerzone, Block-2, No.2
200 Feet Radial Road
Pallikaranai
CHENNAI
600100
India

Telephone : (+91) 04446945100
Telefax : (+91) 04443451516

Emergency telephone number : +91 22 6516 1058

Recommended use of the chemical and restrictions on use

Recommended use : Automotive and industrial grease.

Restrictions on use :
This product must not be used in applications other than those listed in Section 1 without first seeking the advice of the supplier.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : A lubricating grease containing highly-refined mineral oils and additives.
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.
Classification based on DMSO extract content < 3% (Regulation (EC) 1272/2008, Annex VI, Part 3, Note L).

Hazardous components

Chemical name	CAS-No. EC-No. Registration number	Classification (REGULATION (EC) No 1272/2008)	Concentration (% w/w)
Lithium complex	12007-60-2	Acute Tox. 4;	1 - 2.9

thickener		H302 Eye Dam. 1; H318 Repr. 2; H361d	
Zinc dialkyldithiophosphate	68457-79-4	Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 2; H411	1 - 1.9
Fatty acids, C18 unsat, reaction products with diethylenetriamine	1226892-43-8	Skin Corr. 1C; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	0.25 - 0.9
Alkaryl amine	68411-46-1	Repr. 2; H361f	0.1 - 0.9

For explanation of abbreviations see section 16.

3. HAZARDS IDENTIFICATION

Classification (REGULATION (EC) No 1272/2008)

Eye irritation	:	Category 2
Long-term (chronic) aquatic hazard	:	Category 3

Label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : PHYSICAL HAZARDS:
Not classified as a physical hazard according to CLP criteria.
HEALTH HAZARDS:
H319 Causes serious eye irritation.
ENVIRONMENTAL HAZARDS:
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.
Response:
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
Storage:
No precautionary phrases.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis. Used grease may contain harmful impurities.
High-pressure injection under the skin may cause serious damage including local necrosis.
Not classified as flammable but will burn.

4. FIRST-AID MEASURES

General advice	:	Not expected to be a health hazard when used under normal conditions.
If inhaled	:	No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.
In case of skin contact	:	Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention. When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop. Obtain medical attention even in the absence of apparent wounds.
In case of eye contact	:	Immediately flush eye(s) with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Transport to the nearest medical facility for additional treatment.
If swallowed	:	In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
Most important symptoms and effects, both acute and delayed	:	Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea. Not considered to be an inhalation hazard under normal conditions of use. Possible respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing. No specific hazards under normal use conditions. Skin irritation signs and symptoms may include a burning sensation, redness, or swelling. Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision.

Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection.

Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

Notes to physician : IMMEDIATE TREATMENT IS EXTREMELY IMPORTANT!
Call a doctor or poison control center for guidance.
Treat symptomatically.

High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function.
Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media : Do not use water in a jet.

Specific hazards during firefighting : Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke).
Carbon monoxide may be evolved if incomplete combustion occurs.
Unidentified organic and inorganic compounds.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Avoid contact with skin and eyes.
Environmental precautions	:	Use appropriate containment to prevent uncontrolled release. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
Methods and materials for containment and cleaning up	:	Shovel into a suitable clearly marked container for disposal or reclamation in accordance with local regulations.
Additional advice	:	For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet. For guidance on disposal of spilled material see Section 13 of this Safety Data Sheet.

7. HANDLING AND STORAGE

General Precautions	:	Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
Advice on safe handling	:	Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
Avoidance of contact	:	Strong oxidising agents.

Storage

Other data	:	Keep container tightly closed and in a cool, well-ventilated place. Use properly labeled and closable containers. Store at ambient temperature.
Packaging material	:	Suitable material: For containers or container linings, use mild steel or high density polyethylene. Unsuitable material: PVC.
Container Advice	:	Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA (Mist)	5 mg/m3	IN OEL
Oil mist, mineral	Not Assigned	STEL (Mist)	10 mg/m3	IN OEL
Oil mist, mineral	Not Assigned	TWA (inhalable fraction)	5 mg/m3	US. ACGIH Threshold Limit Values
Oil mist, mineral	Not Assigned	TWA (Mist)	5 mg/m3	OSHA Z-1
Oil mist, mineral	Not Assigned	TWA (Inhalable particulate matter)	5 mg/m3	ACGIH

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.
Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods http://www.cdc.gov/niosh/

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods http://www.osha.gov/

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances http://www.hse.gov.uk/

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany http://www.dguv.de/inhalt/index.jsp

L'Institut National de Recherche et de Securité, (INRS), France http://www.inrs.fr/accueil

Engineering measures : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:
Define procedures for safe handling and maintenance of controls.
Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.
Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.
Drain down system prior to equipment break-in or maintenance.
Retain drain downs in sealed storage pending disposal or subsequent recycle.
Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.
Practice good housekeeping.

Due to the product's semi-solid consistency, generation of mists and dusts is unlikely to occur.

Personal protective equipment

Protective measures

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use.
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
Select a filter suitable for the combination of organic gases and vapours and particles [Type A/Type P boiling point >65°C (149°F)].

Hand protection
Remarks : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand

care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

Eye protection	:	Wear full face shield if splashes are likely to occur.
Skin and body protection	:	Wear chemical resistant gloves/gauntlets and boots. Where risk of splashing, also wear an apron.
Thermal hazards	:	Not applicable

Environmental exposure controls

General advice	:	Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Section 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water. Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Semi-solid at ambient temperature.
Colour	:	red
Odour	:	Slight hydrocarbon
Odour Threshold	:	Data not available
pH	:	Not applicable
Dropping point	:	240 °C / 464 °F Method: IP 396
Melting / freezing point		Data not available
Initial boiling point and boiling range	:	Data not available

Flash point	:	Not applicable
Evaporation rate	:	Data not available
Flammability (solid, gas)	:	Not applicable
Flammability (liquids)	:	Not classified as flammable but will burn.
Upper explosion limit	:	Typical 10 %(V)
Lower explosion limit	:	Typical 1 %(V)
Vapour pressure	:	< 0.5 Pa (20 °C / 68 °F) estimated value(s)
Relative vapour density	:	> 1estimated value(s)
Relative density	:	1.000 (15 °C / 59 °F)
Density	:	1,000 kg/m3 (15.0 °C / 59.0 °F) Method: Unspecified
Solubility(ies)		
Water solubility	:	negligible
Solubility in other solvents	:	Data not available
Partition coefficient: n-octanol/water	:	log Pow: > 6 (based on information on similar products)
Auto-ignition temperature	:	> 320 °C / 608 °F
Decomposition temperature	:	Data not available
Viscosity		
Viscosity, dynamic	:	Data not available
Viscosity, kinematic	:	Not applicable
Explosive properties	:	Classification Code: Not classified
Oxidizing properties	:	Data not available
Conductivity	:	This material is not expected to be a static accumulator.
Particle size	:	Data not available

10. STABILITY AND REACTIVITY

Reactivity	:	The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.

Chemical stability	:	Stable.
Possibility of hazardous reactions	:	Reacts with strong oxidising agents.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Strong oxidising agents.
Hazardous decomposition products	:	No decomposition if stored and applied as directed.

11. TOXICOLOGICAL INFORMATION

Basis for assessment	:	Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
Information on likely routes of exposure	:	Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity	:	LD50 rat: > 5,000 mg/kg Remarks: Low toxicity Based on available data, the classification criteria are not met.
Acute inhalation toxicity	:	Remarks: Based on available data, the classification criteria are not met.
Acute dermal toxicity	:	LD50 Rabbit: > 5,000 mg/kg Remarks: Low toxicity Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Product:

Remarks: Slightly irritating to skin., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis., Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation

Product:

Remarks: Causes serious eye irritation.

Components:

Zinc dialkyldithiophosphate:

Remarks: Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Product:

Remarks: Not a skin sensitiser.
Based on available data, the classification criteria are not met.

Remarks: Experimental data has shown that the concentration of potentially sensitising components present in this product does not induce skin sensitisation.

Germ cell mutagenicity

Product:

Remarks: Non mutagenic, Based on available data, the classification criteria are not met.

Carcinogenicity

Product:

Remarks: Not a carcinogen., Based on available data, the classification criteria are not met.

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies., Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

Material	GHS/CLP Carcinogenicity Classification
Highly refined mineral oil	No carcinogenicity classification.

Reproductive toxicity

Product:

Remarks: Not a developmental toxicant., Does not impair fertility., Based on available data, the classification criteria are not met.

STOT - single exposure

Product:

Remarks: Based on available data, the classification criteria are not met.

STOT - repeated exposure

Product:

Remarks: Based on available data, the classification criteria are not met.

Aspiration toxicity

Product:

Not an aspiration hazard.

Further information

Product:

Remarks: Used grease may contain harmful impurities that have accumulated during use. The concentration of such harmful impurities will depend on use and they may present risks to health and the environment on disposal., ALL used grease should be handled with caution and skin contact avoided as far as possible.

Remarks: High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

Remarks: Slightly irritating to respiratory system.

12. ECOLOGICAL INFORMATION

Basis for assessment	:	Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity)	:	Remarks: LL/EL/IL50 > 1 <= 10 mg/l Toxic
Toxicity to crustacean (Acute toxicity)	:	Remarks: LL/EL/IL50 > 1 <= 10 mg/l Toxic
Toxicity to algae/aquatic plants (Acute toxicity)	:	Remarks: LL/EL/IL50 > 1 <= 10 mg/l Toxic
Toxicity to fish (Chronic toxicity)	:	Remarks: Data not available
Toxicity to crustacean (Chronic toxicity)	:	Remarks: Data not available
Toxicity to microorganisms (Acute toxicity)	:	Remarks: Data not available

Components:
Fatty acids, C18 unsat, reaction products with diethylenetriamine :

M-Factor (Short-term (acute) aquatic hazard) : 10

M-Factor (Long-term (chronic) aquatic hazard) : 1

Persistence and degradability

Product:

Biodegradability : Remarks: Not readily biodegradable., Major constituents are inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: > 6Remarks: (based on information on similar products)

Mobility in soil

Product:

Mobility : Remarks: Semi-solid under most environmental conditions., If it enters soil, it will adsorb to soil particles and will not be mobile.
Remarks: Floats on water.

Other adverse effects

no data available

Product:

Additional ecological information : Does not have ozone depletion potential, photochemical ozone creation potential or global warming potential., Product is a mixture of non-volatile components, which will not be released to air in any significant quantities under normal conditions of use.
Poorly soluble mixture., Causes physical fouling of aquatic organisms.
Mineral oil does not cause chronic toxicity to aquatic organisms at concentrations less than 1 mg/l.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Recover or recycle if possible.
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.

Do not dispose into the environment, in drains or in water courses.

Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.
Waste, spills or used product is dangerous waste.
Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
Do not dispose of tank water bottoms by allowing them to drain into the ground. This will result in soil and groundwater contamination.

MARPOL - see International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which provides technical aspects at controlling pollutions from ships.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Local legislation
Remarks : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

14. TRANSPORT INFORMATION

International Regulations

ADR
Not regulated as a dangerous good

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

Maritime transport in bulk according to IMO instruments

MARPOL Annex 1 rules apply for bulk shipments by sea.

Special precautions for user

Remarks : Special Precautions: Refer to Section 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information **:** Not dangerous goods - full transport

15. REGULATORY INFORMATION

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

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

The Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 (amended version issued 2000). The Factories Act, 1948, The Second Schedule: Permissible levels of certain chemical substances in work environment, as amended through 1987. India Central motor Vehicles (Amendment) Rules 1993.

Other international regulations

The components of this product are reported in the following inventories:

TSCA : All components listed.

16. OTHER INFORMATION

Full text of H-Statements

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H361d	Suspected of damaging the unborn child.
H361f	Suspected of damaging fertility. (Causing atrophy of the testes)
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	Acute toxicity
Aquatic Acute	Short-term (acute) aquatic hazard
Aquatic Chronic	Long-term (chronic) aquatic hazard
Eye Dam.	Serious eye damage
Repr.	Reproductive toxicity
Skin Corr.	Skin corrosion
Skin Irrit.	Skin irritation
Skin Sens.	Skin sensitisation

Abbreviations and Acronyms : The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID date base, EC 1272 regulation, etc).
The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

SDS Regulation : Regulation 1907/2006/EC

Further information

Training advice	:	Provide adequate information, instruction and training for operators.
Other information	:	A vertical bar (|) in the left margin indicates an amendment from the previous version.
Sources of key data used to compile the Safety Data Sheet	:	The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID date base, EC 1272 regulation, etc).

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.