Safety Data Sheet

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

Material Name : **Shell Gadus S3 V220C 2**

Recommended Use / Restrictions of Use : Automotive and industrial grease.

Product Code : 001D8425

Supplier : **Shellfone International Co., LTD.**
5F, No.33, Lane 146, Xinhu 2nd Road,
Neihu Dist., Taipei, Taiwan 11494

Telephone : 02 8792 6662
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Organization that prepared the SDS : Shellfone International Co., LTD.

Address / telephone number : 5F, No.33, Lane 146, Xinhu 2nd Road, Neihu District, Taipei, Taiwan 11494

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2. HAZARDS IDENTIFICATION

Not classified as toxic chemical substance according to Taiwan Toxic Chemical Substances (TCS)

GHS Classification : Hazardous to the aquatic environment - Long-term Hazard, Category 3

Label content:
GHS Label Elements

Symbol(s) :
No symbol

Signal Words : No signal word

Hazard Statement : PHYSICAL HAZARDS:
Not classified as a physical hazard under GHS criteria.

HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.

ENVIRONMENTAL HAZARDS:
H412: Harmful to aquatic life with long lasting effects.

GHS Precautionary Statements

Prevention : P273: Avoid release to the environment.

Response : No precautionary phrases.

Safety Data Sheet

Storage : No precautionary phrases.

Disposal: : P501: Dispose of contents and container to appropriate waste site or reclaimer in accordance with local and national regulations.

Other Hazards which do not result in classification : Not classified as flammable but will burn.

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis. High-pressure injection under the skin may cause serious damage including local necrosis. Used grease may contain harmful impurities.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

Mixture Description : A lubricating grease containing highly-refined mineral oils and additives.

Classification of components according to GHS

Chemical Identity	Synonyms	CAS	Hazard Class (category)	Hazard Statement	Conc.
Zinc alkyl dithiophosphate		68649-42-3	Eye Dam., 2; Skin Corr., 2; Aquatic Chronic, 2;	H319; H315; H411;	1.00 - 2.40 %
Zinc naphthenate		12001-85-3	Eye Dam., 2; Skin Corr., 2; Aquatic Chronic, 1;	H319; H315; H410;	0.25 - 2.40 %

Additional Information : The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

Refer to Ch 16 for full text of H phrases.

4. FIRST-AID MEASURES

General Information : Not expected to be a health hazard when used under normal conditions.

The first aid measures for different exposure routes:

Inhalation : No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.

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.
Eye Contact	:	Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.
Ingestion	:	In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
Most Important Symptoms/Effects, Acute & Delayed	:	Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection. 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.
Immediate medical attention, special treatment	:	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.
Protection of first-aiders		Refer to Personal protection equipment in Chapter 8.

5. FIRE-FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

Specific fire-fighting methods:

Specific hazards arising from Chemicals	:	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.
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.
Protective Equipment & Precautions for Fire Fighters	:	Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective

equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe the relevant local and international regulations.

Personal Precautions, Protective Equipment and Emergency Procedures	:	Avoid contact with skin and eyes.
Environmental Precautions	:	Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
Methods and Material for Containment and Cleaning Up	:	Shovel into a suitable clearly marked container for disposal or reclamation in accordance with local regulations.

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.
Precautions for 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.
Conditions for Safe Storage	:	Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Store at ambient temperature.
Recommended Materials	:	For containers or container linings, use mild steel or high density polyethylene.
Unsuitable Materials	:	PVC.
Other Advice	:	Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

If the American Conference of Governmental Industrial Hygienists (ACGIH) value is provided on this document, it is provided for information only.

Control parameters:

Occupational Exposure Limits

Material	Source	Type	ppm	mg/m3	Notation
Oil mist, mineral	ACGIH	TWA(Inhalable fraction.)		5 mg/m3	

Safety Data Sheet

	TW OEL	TWA(Mist.)		5 mg/m3	

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

Biological Exposure Index (BEI)

No biological limit allocated.

Appropriate Engineering Controls : 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. 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 for 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.

Individual Protection Measures : Hygiene measures: Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers. See also the following information:

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 combined particulate/organic gases and vapours [boiling point >65°C(149 °F)].

Hand Protection : 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 recognise that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time may be 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 safety glasses or full face shield if splashes are likely to occur.
Protective Clothing	:	Skin protection not ordinarily required beyond standard issue work clothes.
Thermal Hazards	:	Not applicable.
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
Environmental Exposure Controls	:	Take appropriate measures to fulfil the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in

Chapter 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.

Hygiene measures: : Refer to Appropriate Engineering Controls and Individual Protection Measures for details.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Red. Semi-solid at ambient temperature.
Odour	:	Slight hydrocarbon
Odour threshold	:	Data not available
pH	:	Not applicable.
Initial Boiling Point and Boiling Range	:	Data not available
Dropping point	:	Typical 240 °C / 464 °F
Melting / freezing point		Not applicable.
Flash point	:	> 250 °C / 482 °F (COC)
Upper / lower Flammability or Explosion limits	:	Typical 1 - 10 %(V) (based on mineral oil)
Auto-ignition temperature	:	> 320 °C / 608 °F
Vapour pressure	:	< 0.5 Pa at 20 °C / 68 °F (estimated value(s))
Relative Density	:	Typical 0.9 at 15 °C / 59 °F
Density	:	Typical 900 kg/m3 at 15 °C / 59 °F
Water solubility	:	Negligible.
Solubility in other solvents	:	Data not available
n-octanol/water partition coefficient (log Pow)	:	> 6 (based on information on similar products)
Dynamic viscosity	:	Data not available
Kinematic viscosity	:	Not applicable.
Vapour density (air=1)	:	> 1 (estimated value(s))
Electrical conductivity	:	This material is not expected to be a static accumulator.
Evaporation rate (nBuAc=1)	:	Data not available
Decomposition Temperature	:	Data not available
Flammability	:	Data not available

10. STABILITY AND REACTIVITY

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	:	Hazardous decomposition products are not expected to form

Decomposition Products during normal storage.

11. TOXICOLOGICAL INFORMATION

Information on Toxicological effects

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).

Likely Routes of Exposure : Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute Toxicity

Acute Oral Toxicity : Expected to be of low toxicity: LD50 > 5000 mg/kg , Rat

Acute Dermal Toxicity : Expected to be of low toxicity: LD50 > 5000 mg/kg , Rabbit

Acute Inhalation Toxicity : Not considered to be an inhalation hazard under normal conditions of use.

Symptoms:

Skin corrosion/irritation : Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Serious eye damage/irritation : Expected to be slightly irritating.

Respiratory Irritation : Inhalation of vapours or mists may cause irritation.

Respiratory or skin sensitisation : Not expected to be a skin sensitiser.

Aspiration Hazard : Not considered an aspiration hazard.

Chronic Toxicity

Germ cell mutagenicity : Not considered a mutagenic hazard.

Carcinogenicity : Not expected to be carcinogenic. 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	:	**Carcinogenicity Classification**
Highly refined mineral oil (IP346 <3%)	:	ACGIH Group A4: Not classifiable as a human carcinogen.
Highly refined mineral oil (IP346 <3%)	:	IARC 3: Not classifiable as to carcinogenicity to humans.
Highly refined mineral oil (IP346 <3%)	:	GHS / CLP: No carcinogenicity classification

Safety Data Sheet

Reproductive and Developmental Toxicity	:	Not expected to be a hazard.
Specific target organ toxicity - single exposure	:	Not expected to be a hazard.
Specific target organ toxicity - repeated exposure	:	Not expected to be a hazard.
Additional Information	:	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. High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

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:		
Acute Toxicity	:	Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be harmful: LL/EL/IL50 10-100 mg/l (to aquatic organisms) LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract.
Microorganisms	:	Data not available
Mobility	:	Semi-solid under most environmental conditions. If it enters soil, it will adsorb to soil particles and will not be mobile. Floats on water.
Persistence/degradability	:	Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.
Bioaccumulative Potential	:	Contains components with the potential to bioaccumulate.
Other Adverse Effects	:	Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential. Contains zinc naphthenate. Very toxic: LC/EC/IC50 0.1 - 1 mg/l (to aquatic organisms)

13. DISPOSAL CONSIDERATIONS

Methods of waste disposal:

Material Disposal	:	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.
Container Disposal	:	Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
Local Legislation	:	Disposal should be in accordance with applicable regional, national, and local laws and regulations.

14. TRANSPORT INFORMATION

Transport hazard class(es)
Land (as per ADR classification): Not regulated
UN No: not classified as hazard
UN proper shipping name: Not applicable
Transport hazard class: Not applicable
Packing group (if applicable): Not applicable
Environmental hazards: No
Specific transport measures and precautionary conditions: No

IMDG
UN No: not classified as hazard
UN proper shipping name: Not applicable
Transport hazard class: Not applicable
Packing group (if applicable): Not applicable
Marine pollution (yes/no): No
Specific transport measures and precautionary conditions: No

IATA (Country variations may apply)
UN No: not classified as hazard
UN proper shipping name: Not applicable
Transport hazard class: Not applicable
Packing group (if applicable): Not applicable
Specific transport measures and precautionary conditions: No

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution Category	**:**	Not applicable.
Ship Type	**:**	Not applicable.
Product Name	**:**	Not applicable.
Special Precaution	**:**	Not applicable.
Additional Information	**:**	MARPOL Annex 1 rules apply for bulk shipments by sea.

Safety Data Sheet

15. REGULATORY INFORMATION

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

Chemical Inventory Status

EINECS	:	All components listed or polymer exempt.
TSCA	:	All components listed.

Applicable regulations:

Other Information	:	Rules on hazard communication of dangerous and harmful materials. Rules on public hazardous products and flammable pressurized gases installation and safety management. Rules on labour safety and hygiene facilities. Standards on workplace atmosphere of dangerous and hazardous materials. Rules on waste storage and disposal installation standard. Rules on road transport safety. Rules on toxic chemicals. Standard on harm prevention of specific chemical substance. Rules on organic solvent poison prevention. Rules on pressurized gas labour safety.

16. OTHER INFORMATION

Hazard Statement

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

SDS Version Number	:	2.1
SDS Effective Date	:	2013/12/24
SDS Revisions	:	A vertical bar (|) in the left margin indicates an amendment from the previous version.
SDS Distribution	:	The information in this document should be made available to all who may handle the product.
Organization that prepared the SDS	:	Shellfone International Co., LTD.
Address / telephone number	:	5F, No.33, Lane 146, Xinhu 2nd Road, Neihu District, Taipei, Taiwan 11494 +886 2 8792 6662

Safety Data Sheet

Person who prepared the MSDS (Title)	:	Jimmy Wang (王誦平)
Signature	:	
Key Literature References	:	The content and format of this safety data sheet is in accordance with the GHS guidelines.
Disclaimer	:	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.