

SAFETY DATA SHEET

SHELL GADUS S3 V220 C2



Section 1. Identification of the substance/mixture and of the company/undertaking

Product identifier : SHELL GADUS S3 V220 C2
Cat. No. : 16080801, 16080831, 16080840, 16080847
Container size : 10 ml, 50 ml, 100 ml
Other means of identification : Not available.
Product type : Solid.

Recommended use of the chemical and restrictions on use

Product use : Lubricating grease.
Area of application : Industrial applications, Professional applications.

Supplier's details : Struers ApS
Pederstrupvej 84
DK-2750 Ballerup

Telephone: +45 44 600 800

e-mail address of person responsible for this SDS : sdsquestions@struers.dk

Emergency telephone number (with hours of operation) : 112 (24/7)

Section 2. Hazards identification

Classification of the substance or mixture : H319 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A
H317 SKIN SENSITISATION - Category 1
H361 REPRODUCTIVE TOXICITY - Category 2

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : May cause an allergic skin reaction.
Causes serious eye irritation.
Suspected of damaging fertility or the unborn child.

Precautionary statements

Prevention : P203 - Obtain, read and follow all safety instructions before use.
P280 - Wear protective gloves. Wear protective clothing. Wear eye or face protection: Recommended: Use eye protection according to EN 166.. Wear hearing protection.
P261 - Avoid breathing dust.
P264 - Wash thoroughly after handling.
P272 - Contaminated work clothing should not be allowed out of the workplace.

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Section 2. Hazards identification

- Response** : P318 - IF exposed or concerned, get medical advice.
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P333 + P317 - If skin irritation or rash occurs: Get medical help.
P362 + P364 - Take off contaminated clothing and wash it before reuse.
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 + P317 - If eye irritation persists: Get medical help.
- Storage** : P405 - Store locked up.
- Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : None known.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.

Ingredient name	%	Identifiers
Lithium tetrahydroxyborate	≥1 - ≤2.9	CAS: 12006-96-1
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	≥0.1 - ≤2.9	CAS: 68411-46-1
Naphthenic acids, zinc salts, basic	≥1 - ≤1.49	CAS: 84418-50-8

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.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

Ingestion : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : May cause an allergic skin reaction.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness

Inhalation : Adverse symptoms may include the following:
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations

Skin contact : Adverse symptoms may include the following:
 irritation
 redness
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations

Ingestion : Adverse symptoms may include the following:
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)



Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : In case of fire, use water spray (fog), foam, dry chemical or CO₂.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Remark : Not considered to be a product presenting a risk of explosion.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Absorb spill with inert material (e.g. dry sand or earth) and place in a chemical waste container.

Large spill : Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor.



Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Suitable: mild steel/polyethylene (PE)
Not suitable: polyvinyl chloride (PVC)

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Recommended: Use eye protection according to EN 166.

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Section 8. Exposure controls/personal protection

Skin protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Recommended: polyvinyl chloride (PVC), neoprene, nitrile rubber.
Breakthrough time: >480 minutes
thickness: >0.35 mm
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: Type A/Type P boiling point >65°C (149°F)

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

- Physical state** : Solid.
- Colour** : Red.
- Odour** : Hydrocarbon. [Slight]
- Odour threshold** : Not available.
- pH** : Not applicable.
- Melting point/freezing point** : 240°C (464°F)
- Boiling point or initial boiling point and boiling range** : Not available.
- Flash point** : Not applicable.
- Evaporation rate** : Not available.
- Flammability** : Not available.
- Lower and upper explosion limit/flammability limit** : Lower: 1%
Upper: 10%
- Vapour pressure** : <0.0005 kPa (<0.0037503 mm Hg)
- Relative vapour density** : >1 [Air = 1]
- Relative density** : 1
- Solubility(ies)** :
- | Media | Result |
|-------|-------------|
| water | Not soluble |
- Solubility in water** : Not available.
- Miscible with water** : No.
- Partition coefficient: n-octanol/water** : >6
- Auto-ignition temperature** : >320°C (>608°F)



Section 9. Physical and chemical properties

Decomposition temperature : Not available.

Viscosity : Dynamic (room temperature): Not applicable.
Kinematic (room temperature): Not applicable.
Kinematic (40°C (104°F)): Not applicable.

Particle characteristics

Median particle size : Not available.

Other information

Physical/chemical properties comments : No additional information.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerisation will not occur.

Conditions to avoid : Keep away from heat and direct sunlight.

Incompatible materials : Reactive or incompatible with the following materials: oxidising materials.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result
 SHELL GADUS S3 V220 C2	Rat - Oral - LD50 >5000 mg/kg - (similar material)
	Rabbit - Dermal - LD50 >5000 mg/kg - (similar material)
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	Rat - Oral - LD50 >5000 mg/kg
	Rat - Dermal - LD50 >2000 mg/kg
Naphthenic acids, zinc salts, basic	Rat - Female - Oral - LD50 >2000 mg/kg
	OECD 423 [Acute Oral toxicity - Acute Toxic Class Method]

Conclusion/Summary[Product] : Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Conclusion/Summary[Product] : Slightly irritating to the skin. Based on available data, the classification criteria are not met.



Section 11. Toxicological information

Serious eye damage/eye irritation

Conclusion/Summary[Product] : Causes serious eye irritation.

Respiratory corrosion/irritation

Conclusion/Summary[Product] : Not available.

Respiratory or skin sensitization

Skin

Conclusion/Summary[Product] : Not available.

Respiratory

Conclusion/Summary[Product] : Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Conclusion/Summary[Product] : Based on available data, the classification criteria are not met.

Carcinogenicity

Conclusion/Summary[Product] : The mineral oils in the product contain < 3% DMSO extract (IP 346).
Based on available data, the classification criteria are not met.

Reproductive toxicity

Conclusion/Summary[Product] : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure

Routes of entry anticipated: Dermal, Eyes.

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : May cause an allergic skin reaction.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

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Section 11. Toxicological information

Eye contact	: Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	: Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
Skin contact	: Adverse symptoms may include the following: irritation redness reduced foetal weight increase in foetal deaths skeletal malformations
Ingestion	: Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Long term exposure

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Potential chronic health effects

Conclusion/Summary[Product] : Not available.

General	: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Reproductive toxicity	: Suspected of damaging fertility or the unborn child.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Lithium tetrahydroxyborate	500	N/A	N/A	N/A	N/A



Section 12. Ecological information

Toxicity

Product/ingredient name	Result
SHELL GADUS S3 V220 C2	Acute - LC50 Fish >100 mg/l - (similar material) [96 hours]
	Acute - EC50 Daphnia >100 mg/l - (similar material) [48 hours]
	Acute - EC50 Algae >100 mg/l - (similar material) [72 hours]
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	Acute - LC50 Fish >100 mg/l [96 hours]

Conclusion/Summary[Product] : Not available.

Persistence and degradability

Conclusion/Summary[Product] : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
SHELL GADUS S3 V220 C2	-	-	Not readily
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	-	-	Not readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
SHELL GADUS S3 V220 C2	>6	-	High
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	5.1	1730 [METI guideline (concentration test on chemical substances in fish)]	High
Naphthenic acids, zinc salts, basic	-	60960	High

Mobility in soil

Soil/water partition coefficient : Not available.

Other adverse effects

No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	UN	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Other information

History

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Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods IMO = International Maritime Organization LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) N/A = Not available SGG = Segregation Group UN = United Nations

Procedure used to derive the classification

Classification	Justification
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A	Calculation method
SKIN SENSITISATION - Category 1	Calculation method
REPRODUCTIVE TOXICITY - Category 2	Calculation method

References	: GHS - Globally Harmonised System of Classification and Labelling of Chemicals International transport regulations
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Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

