Safety Data Sheet

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

1.1 Product Identifier

Material Name : **Shell Gadus S2 V220AC 2**
Product Code : 001D8456

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product Use : Automotive and industrial grease.

Uses Advised Against : This product must not be used in applications other than those recommended in Section 1, without first seeking the advice of the supplier.

1.3 Details of the Supplier of the safety data sheet

Company Information : Ritchie Engineering Company, Inc.
10950 Hampshire Avenue South
Bloomington, MN 55438-2623 U.S.A
Phone: 952-943-1333, Fax: 1-800-322-8684.

1.4 Emergency Telephone:

ChemTel: 1-800-255-3924 (United States, Canada, Puerto Rico, and US Virgin Islands)
ChemTel: 1-813-248-0585 (International)

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

1999/45/EC	
Hazard Characteristics	**R-phrase(s)**
Not classified as dangerous under EC criteria.;	

2.2 Label Elements

Labeling according to Directive 1999/45/EC

EC Symbols : No Hazard Symbol required

EC Classification : Not classified as dangerous under EC criteria.
EC Risk Phrases : Not classified.
EC Safety Phrases : Not classified.

2.3 Other Hazards

Health Hazards : Not expected to be a health hazard when used under normal conditions. 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.

Safety Hazards : Not classified as flammable but will burn.

Environmental Hazards : Not classified as dangerous for the environment.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Material Name : Not applicable.

3.2 Mixtures

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

Hazardous Components

Classification of components according to Regulation (EC) No 1272/2008

Chemical Name	CAS No.	EC Number	REACH Registration No.	Conc.
Zinc alkyl dithiophosphate	68649-42-3	272-028-3	Not available / Not applicable.	< 2,40%

Safety Data Sheet

Chemical Name	Hazard Class & Category	Hazard Statement
Zinc alkyl dithiophosphate	Skin Corr., 2; Eye Dam., 1; Aquatic Chronic, 2;	H315; H318; H411;

Classification of components according to 67/548/EEC

Chemical Name	CAS No.	EC Number	REACH Registration No.	Symbol(s)	R-phrase(s)	Conc.
Zinc alkyl dithiophosphate	68649-42-3	272-028-3	Not available / Not applicable.	Xi, N	R38; R41; R51/53	< 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 R- and H- phrases.

This mixture does not contain any REACH registered substances that are assessed to be a PBT or a vPvB.

SECTION 4. FIRST AID MEASURES

4.1 Description of First Aid Measures

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

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.

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

4.2 Most important symptoms and effects, both acute and 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.
4.3 Indication of any immediate medical attention and special treatment needed	:	Notes to doctor/physician: 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.

SECTION 5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

5.1 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.
5.2 Special hazards arising from the substance or mixture	:	Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds.
5.3 Advice 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).

SECTION 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. Observe the relevant local and international regulations.

6.1 Personal Precautions, Protective Equipment and Emergency Procedures	:	6.1.1 For non emergency personnel: Avoid contact with skin and eyes. 6.1.2 For emergency responders: Avoid contact with skin and eyes.
6.2 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.
6.3 Methods and Material for Containment and Cleaning Up	:	Shovel into a suitable clearly marked container for disposal or reclamation in accordance with local regulations.
6.4 Reference to other sections	:	For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Material Safety Data Sheet.

SECTION 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.
7.1 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. Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers.
7.2 Conditions for safe storage, including any incompatibilities	:	Store at ambient temperature. Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.
Recommended Materials	:	For containers or container linings, use mild steel or high density polyethylene.
Unsuitable Materials	:	PVC.
7.3 Specific end use(s)	:	Not applicable
Additional Information	:	Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SECTION 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.

8.1 Control Parameters

Occupational Exposure Limits

Material	Source	Type	ppm	mg/m3	Notation
Oil mist, mineral	ACGIH	TWA(Inhalable fraction.)		5 mg/m3	
	CZ OEL	PEL(Aerosol.)		5 mg/m3	
	CZ OEL	NPK-P(Aerosol.)		10 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.

PNEC related information : Data not available

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

8.2 Exposure Controls

General Information : 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.

Occupational Exposure Controls

Safety Data Sheet

Personal Protective Equipment	:	The provided information is made in consideration of the PPE directive (Council Directive 89/686/EEC) and the CEN European Committee for Standardisation (CEN) standards. Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
Eye Protection	:	Wear safety glasses or full face shield if splashes are likely to occur. Approved to EU Standard EN166.
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.
Body protection	:	Skin protection not ordinarily required beyond standard issue work clothes.
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)] meeting EN14387.
Thermal Hazards	:	Not applicable.

Environmental Exposure Controls

Environmental exposure control measures	:	Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation. Information on accidental release measures are to be found in section 6.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic 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 175 °C / 347 °F
Flash point	:	> 180 °C / 356 °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))
Evaporation rate (nBuAc=1)	:	Data not available
Decomposition Temperature	:	Data not available
Flammability	:	Data not available
Oxidizing Properties	:	Data not available
Explosive Properties	:	Not classified

9.2 Other Information

Electrical conductivity	:	This material is not expected to be a static accumulator.

Other Information	:	not a VOC
Volatile organic compound	:	0 %

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity	:	The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
10.2 Chemical stability	:	No hazardous reaction is expected when handled and stored according to provisions.
10.3 Possibility of Hazardous Reactions	:	Reacts with strong oxidising agents.
10.4 Conditions to Avoid	:	Extremes of temperature and direct sunlight.
10.5 Incompatible Materials	:	Strong oxidising agents.
10.6 Hazardous Decomposition Products	:	Hazardous decomposition products are not expected to form during normal storage.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 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 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.
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	:	For respiratory and skin sensitisation: Not expected to be a sensitiser.
Aspiration Hazard	:	Not considered an aspiration hazard.

Safety Data Sheet

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

Reproductive and Developmental Toxicity : Not expected to be a hazard.

Summary on evaluation of the CMR properties

Carcinogenicity : This product does not meet the criteria for classification in categories 1A/1B.,
Mutagenicity : This product does not meet the criteria for classification in categories 1A/1B.
Reproductive Toxicity (fertility) : This product does not meet the criteria for classification in categories 1A/1B.

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.
Classifications by other authorities under varying regulatory frameworks may exist.

SECTION 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).

12.1 Toxicity

Acute Toxicity : Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract. Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

12.2 Persistence and 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.

12.3 Bioaccumulative Potential : Contains components with the potential to bioaccumulate.

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

12.5 Result of PBT and vPvB assesment : This mixture does not contain any REACH registered substances that are assessed to be a PBT or a vPvB.

12.6 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.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

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. EU Waste Disposal Code (EWC): 12 01 12 spent waxes and fats. Classification of waste is always the responsibility of the end user. Categorisation of packaging waste according to Catalogue of Waste: Waste code category: 15 01 10 Category of waste: N

SECTION 14. TRANSPORT INFORMATION

Land transport (ADR/RID):
ADR
This product is not classified as dangerous for this mode of transport. Therefore 14.1 UN Number, 14.2 UN Proper Shipping name, 14.3 Transport hazard class(es), 14.4 Packing group, 14.5 Environmental hazards, 14.6 Special precautions for user do not apply.

RID
This product is not classified as dangerous for this mode of transport. Therefore 14.1 UN Number, 14.2 UN Proper Shipping name, 14.3 Transport hazard class(es), 14.4 Packing group, 14.5 Environmental hazards, 14.6 Special precautions for user do not apply.

Inland waterways transport (ADN):
This product is not classified as dangerous for this mode of transport. Therefore 14.1 UN Number, 14.2 UN Proper Shipping name, 14.3 Transport hazard class(es), 14.4 Packing group, 14.5 Environmental hazards, 14.6 Special precautions for user do not apply.

Sea transport (IMDG Code):
This product is not classified as dangerous for this mode of transport. Therefore 14.1 UN Number, 14.2 UN Proper Shipping name, 14.3 Transport hazard class(es), 14.4 Packing group, 14.5 Environmental hazards, 14.6 Special precautions for user do not apply.

Air transport (IATA):
This product is not classified as dangerous for this mode of transport. Therefore 14.1 UN Number, 14.2 UN Proper Shipping name, 14.3 Transport hazard class(es), 14.4 Packing group, 14.5 Environmental hazards, 14.6 Special precautions for user do not apply.

14.7 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.

SECTION 15. REGULATORY INFORMATION

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

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

Other regulatory Information

Authorisations and/or restrictions on use	:	Product is not subject to Authorisation under REACh.
Recommended Restrictions on Use (Advice Against)	:	This product must not be used in applications other than those recommended in Section 1, without first seeking the advice of the supplier.

Chemical Inventory Status

EINECS	:	All components listed or polymer exempt.
TSCA	:	All components listed.
Other Information	:	· Nařízení Evropského parlamentu a Rady (ES) č. 1907/2006 ze dne 18. prosince 2006 o registraci, hodnocení, povolování a omezování chemických látek (REACH), v platném znění, včetně souvisících předpisů a nařízení · Nařízení Evropského parlamentu a Rady (ES) č. 1272/2008 ze dne 16. prosince 2008 o klasifikaci, označování a balení látek a směsí , v platném znění, včetně souvisících předpisů a nařízení (CLP) · Směrnice Rady 67/548/EHS ze dne 27. června 1967 o sbližování právních a správních předpisů týkajících se klasifikace, balení a označování nebezpečných látek, v platném znění (DSD)

· Směrnice Evropského parlamentu a Rady 1999/45/ES ze dne 31. května 1999 o sbližování právních a správních předpisů členských států týkajících se klasifikace, balení a označování nebezpečných přípravků, v platném znění (DPD)
· Zákon č.86/2002 Sb., o ochraně ovzduší, v platném znění, včetně souvisejících předpisů a nařízení
· Zákon č. 111/1994 Sb., o silniční dopravě, v platném znění, včetně souvisících předpisů a nařízení (ADR)
· Zákon č. 185/2001 Sb., o odpadech, v platném znění, včetně souvisících předpisů a nařízení
· Zákon č. 254/2001 Sb., vodní zákon, v platném znění, včetně souvisících předpisů a nařízení
· Zákon č. 266/1994 Sb., o drahách, v platném znění, včetně souvisících předpisů a nařízení (RID)
· Zákon č. 350/2011 Sb., chemický zákon, v platném znění, včetně souvisících předpisů a nařízení
· Nařízení vlády č. 361/2007 Sb., kterým se stanoví podmínky ochrany zdraví při práci, v platném znění, včetně souvisících předpisů a nařízení

15.2 Chemical Safety Assessment : No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16. OTHER INFORMATION

R-phrase(s)

	Not classified.
R38	Irritating to skin.
R41	Risk of serious damage to eyes.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

CLP Hazard Statements

H315	Causes skin irritation.
H318	Causes serious eye damage.
H411	Toxic to aquatic life with long lasting effects.

Additional Information : No Exposure Scenario annex is attached to this safety data sheet. It is a non-classified mixture containing hazardous substances as detailed in Section 3; relevant information from Exposure Scenarios for the hazardous substances contained have been integrated into the core sections 1-16 of this SDS.

Other Information

Safety Data Sheet

Abbreviations and Acronyms : Acute Tox. = Acute toxicity
Asp. Tox. = Aspiration hazard
Aquatic Acute = Acute hazards to the aquatic environment
Aquatic Chronic = Hazardous to the aquatic environment - Long-term Hazard
Eye Dam. = Serious eye damage/eye irritation
Flam. Liq. = Flammable liquids
Skin Corr. = Skin corrosion/irritation
Skin Sens. = Skin sensitizer
STOT SE = Specific target organ toxicity - single exposure
STOT RE = Specific target organ toxicity - repeated exposure

The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS = Australian Inventory of Chemical Substances
ASTM = American Society for Testing and Materials
BEL = Biological exposure limits
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
CAS = Chemical Abstracts Service
CEFIC = European Chemical Industry Council
CLP = Classification Packaging and Labelling
COC = Cleveland Open-Cup
DIN = Deutsches Institut fur Normung
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DSL = Canada Domestic Substance List
EC = European Commission
EC50 = Effective Concentration fifty
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial Chemical Substances
EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances Inventory
EWC = European Waste Code

Safety Data Sheet

GHS = Globally Harmonised System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level
OE_HPV = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of Chemicals
RID = Regulations Relating to International Carriage of Dangerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

SDS Distribution	:	The information in this document should be made available to all who may handle the product.
SDS Version Number	:	2.1
SDS Effective Date	:	29.01.2013
SDS Revisions	:	A vertical bar (|) in the left margin indicates an amendment from the previous version.
SDS Regulation	:	Regulation 1907/2006/EC as amended by Regulation (EU)

Safety Data Sheet

453/2010

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.