Version 1.4	Revision Date: 2016-04-28		DS Number: 0001015908	Print Date: 2016-04-29 Date of last issue: 11.04.2016 Date of first issue: 03.03.2011			
SECTION	I 1. IDENTIFICATION						
Prod	uct name	:	: Shell Morlina S4 B 460				
Prod	uct code	:	001D7829				
Man	ufacturer or supplier's	deta	ails				
Manı	Manufacturer/Supplier		Shell Canada Products 400 - 4th Avenue S.W Calgary AB T2P 0J4 Canada				
Teler Telef	phone fax	:	(+1) 8006611600 (+1) 4033848345				
Eme ber	Emergency telephone num- ber		CHEMTREC (24 hr): 1 (703) 527-3887 or 1 (800) 424-9300 (US) CANUTEC (24 hr): (+1) 613-996-6666; Toll Free: 1-888-CAN- UTEC (226-8832)				
	ommended use of the c	-		ons on use			
		•					
SECTION	I 2. HAZARDS IDENTIF		TION				

GHS Classification

Not a hazardous substance or mixture.

GHS label elements

14	800001015908
Precautionary statements	 Prevention: No precautionary phrases. Response: No precautionary phrases. Storage:
Hazard statements	 PHYSICAL HAZARDS: Not classified as a physical hazard under GHS criteria. HEALTH HAZARDS: Not classified as a health hazard under GHS criteria. ENVIRONMENTAL HAZARDS: Not classified as an environmental hazard under GHS criteria.
Signal word	: No signal word
Hazard pictograms	: No Hazard Symbol required

Version	Revision Date:	SDS Number:	Print Date: 2016-04-29
1.4	2016-04-28	800001015908	Date of last issue: 11.04.2016 Date of first issue: 03.03.2011

No precautionary phrases. **Disposal:** No precautionary phrases.

Other hazards which do not result in classification

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis. Used oil may contain harmful impurities.

Not classified as flammable but will burn.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name	:	Shell Morlina S4 B 460
Chemical nature	:	Synthetic base oil and additives.

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Dialkyl thiophosphate ester	268567-32-4	0.1 - 0.9

SECTION 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 wit ter and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.	h wa-
In case of eye contact	Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.	
If swallowed	In general no treatment is necessary unless large quant are swallowed, however, get medical advice.	ities
Most important symptoms and effects, both acute and delayed	Oil acne/folliculitis signs and symptoms may include forr of black pustules and spots on the skin of exposed area Ingestion may result in nausea, vomiting and/or diarrhoe	S.
Protection of first-aiders	When administering first aid, ensure that you are wearin appropriate personal protective equipment according to incident, injury and surroundings.	
Notes to physician	Treat symptomatically.	

SECTION 5. FIRE-FIGHTING MEASURES

Versio 1.4	on	Revision Date: 2016-04-28	-	0S Number: 0001015908	Print Date: 2016-04-29 Date of last issue: 11.04.2016 Date of first issue: 03.03.2011
Suitable extinguishing media		:	: Foam, water spray or fog. Dry chemical powder, carbon diox- ide, sand or earth may be used for small fires only.		
	Jnsuita nedia	ble extinguishing	:	Do not use water	in a jet.
Specific hazards during fire- fighting		:	A complex mixtur gases (smoke). Carbon monoxide occurs.	ustion products may include: e of airborne solid and liquid particulates and e may be evolved if incomplete combustion nic and inorganic compounds.	
				measures that are appropriate to local cir- the surrounding environment.	
	Special or firefi	protective equipment ghters	:	gloves are to be v large contact with Breathing Appara a confined space.	equipment including chemical resistant vorn; chemical resistant suit is indicated if spilled product is expected. Self-Contained tus must be worn when approaching a fire in Select fire fighter's clothing approved to Is (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protec- tive equipment and emer- gency procedures	Avoid contact with skin and eyes.	
Environmental precautions	Use appropriate containment to avoid environmental contam nation. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.	
	Local authorities should be advised if significant spillages cannot be contained.	
Methods and materials for containment and cleaning up	Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or oth suitable material and dispose of properly.	
Additional advice	For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 this Safety Data Sheet.	of

SECTION 7. HANDLING AND STORAGE

Version 1.4	Revision Date: 2016-04-28	SDS Number: 800001015908	Print Date: 2016-04-29 Date of last issue: 11.04.2016 Date of first issue: 03.03.2011		
General Precautions		vapours, mis Use the infor sessment of	: 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 inhalin When handli worn and pro Properly disp	 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. 		
Avoic	lance of contact	: Strong oxidis	: Strong oxidising agents.		
Product Transfer		Proper grour	This material has the potential to be a static accumulator. Proper grounding and bonding procedures should be used during all bulk transfer operations.		
Storage Other data		place. Use properly	ner tightly closed and in a cool, well-ventilated labeled and closable containers.		
Pack	aging material	 Store at ambient temperature. Suitable material: For containers or container linings, use mi steel or high density polyethylene. Unsuitable material: PVC. 			
Conta	ainer Advice	 Polyethylene containers should not be exposed to high tem- peratures because of possible risk of distortion. 			

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parame- ters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA ((inhal- able frac- tion))	5 mg/m3	US. ACGIH Threshold Limit Values
		TWA (Mist)	5 mg/m3	OSHA Z-1
		TWA (Inhal-	5 mg/m3	ACGIH
		able fraction)		

Biological occupational exposure limits

Version	Revision Date:	SDS Number:	Print Date: 2016-04-29
1.4	2016-04-28	800001015908	Date of last issue: 11.04.2016
			Date of first issue: 03.03.2011

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.

Personal protective equipment

Respiratory protection

: No respiratory protection is ordinarily required under normal

Version 1.4	Revision Date: 2016-04-28	SDS Number: 800001015908	Print Date: 2016-04-29 Date of last issue: 11.04.2016 Date of first issue: 03.03.2011
		tions should be If engineering tions to a level select respirat cific conditions Check with res Where air-filte priate combina Select a filter s	with good industrial hygiene practices, precau- e taken to avoid breathing of material. controls do not maintain airborne concentra- l which is adequate to protect worker health, ory protection equipment suitable for the spe- s of use and meeting relevant legislation. spiratory protective equipment suppliers. ring respirators are suitable, select an appro- ation of mask and filter. suitable for the combination of organic gases Type A/Type P boiling point >65°C (149°F)].
Hand	I protection		
	emarks	gloves approv US: F739) ma suitable chemi gloves Suitabi usage, e.g. fre sistance of glo glove suppliers Personal hygie Gloves must o gloves, hands cation of a nor For continuous through time o 480 minutes w short-term/spla recognize that may not be av time maybe ac and replaceme a good predict dependent on Glove thicknes	ontact with the product may occur the use of ed to relevant standards (e.g. Europe: EN374, de from the following materials may provide ical protection. PVC, neoprene or nitrile rubber lity and durability of a glove is dependent on equency and duration of contact, chemical re- ve material, dexterity. Always seek advice from s. Contaminated gloves should be replaced. ene is a key element of effective hand care. only be worn on clean hands. After using should be washed and dried thoroughly. Appli- n-perfumed moisturizer is recommended. s contact we recommend gloves with break- f more than 240 minutes with preference for > there suitable gloves can be identified. For ash protection we recommend the same, but suitable gloves offering this level of protection ailable and in this case a lower breakthrough cceptable so long as appropriate maintenance ent regimes are followed. Glove thickness is not or of glove resistance to a chemical as it is the exact composition of the glove material. as should be typically greater than 0.35 mm the glove make and model.
Еуе р	protection		andled such that it could be splashed into eyes, wear is recommended.
Skin	and body protection	work clothes.	n is not ordinarily required beyond standard tice to wear chemical resistant gloves.
Therr	mal hazards	: Not applicable	
Prote	ective measures		ective equipment (PPE) should meet recom- nal standards. Check with PPE suppliers.

Version	Revision Date:	SDS Number:	Print Date: 2016-04-29
1.4	2016-04-28	800001015908	Date of last issue: 11.04.2016
			Date of first issue: 03.03.2011

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 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.
	•

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid at room temperature.
Colour	:	yellow
Odour	:	Slight hydrocarbon
Odour Threshold	:	Data not available
рН	:	Not applicable
pour point	:	-42 °C / -44 °F Method: ISO 3016
Initial boiling point and boiling range	:	> 280 °C / 536 °F estimated value(s)
Flash point	:	274 °C / 525 °F
		Method: ISO 2592
Evaporation rate	:	Data not available
Flammability (solid, gas)	:	Data not available
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	:	> 1 estimated value(s)
Relative density	:	0.8592 (15 °C / 59 °F)
Density	:	859.2 kg/m3 (15.0 °C / 59.0 °F)Method: ISO 12185
11		90000101500

Version 1.4	Revision Date: 2016-04-28		lumber: 1015908	Print Date: 2016-04-29 Date of last issue: 11.04.2016 Date of first issue: 03.03.2011	
	ubility(ies) Vater solubility	: ne	egligible		
S	Solubility in other solvents	: Da	ata not available	9	
	Partition coefficient: n- octanol/water		ow: > 6 ased on inform	ation on similar products)	
Aut	o-ignition temperature	: >	320 °C / 608 °F		
١	Viscosity Viscosity, dynamic Viscosity, kinematic		ata not availabl 60 mm2/s (40.0 ethod: ISO 310	°C / 104.0 °F)	
			5.5 mm2/s (100 ethod: ISO 310		
Exp	Explosive properties :		Not classified		
Oxi	dizing properties	: Data not available		e	
Co	nductivity	: Tł	: This material is not expected to be a static accumulator.		
De	composition temperature	: Data not available			

SECTION 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 reac- tions	:	Reacts with strong oxidising agents.	
Conditions to avoid	:	Extremes of temperature and direct sunlight.	
Incompatible materials	:	Strong oxidising agents.	
Hazardous decomposition products	:	Hazardous decomposition products are not expected to form during normal storage.	

SECTION 11. TOXICOLOGICAL INFORMATION

Version 1.4	Revision Date: 2016-04-28	SDS Number: 800001015908	Print Date: 2016-04-29 Date of last issue: 11.04.2016 Date of first issue: 03.03.2011
		•	nted is representative of the product as a nan 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: Expected to be of low toxicity:
Acute inhalation toxicity	:	Remarks: Not considered to be an inhalation hazard under normal conditions of use.
Acute dermal toxicity	:	LD50 (Rabbit): > 5,000 mg/kg Remarks: Expected to be of low toxicity:

Skin corrosion/irritation

Product:

Remarks: 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/eye irritation

Product:

Remarks: Expected to be slightly irritating.

Respiratory or skin sensitisation

Product:

Remarks: Not expected to be a skin sensitiser.

Components:

Dialkyl thiophosphate ester:

Remarks: May cause an allergic skin reaction in sensitive individuals.

Germ cell mutagenicity

Product:

Genotoxicity in vivo

: Remarks: Not considered a mutagenic hazard.

Carcinogenicity

Product:

Remarks: Not expected to be carcinogenic.

Version 1.4	Revision Date: 2016-04-28	SDS Number: 800001015908	Print Date: 2016-04-29 Date of last issue: 11.04.2016 Date of first issue: 03.03.2011

•

Reproductive toxicity

Product:

Effects on fertility

Remarks: Not expected to impair fertility. Not expected to be a developmental toxicant.

STOT - single exposure

Product:

Remarks: Not expected to be a hazard.

STOT - repeated exposure

Product:

Remarks: Not expected to be a hazard.

Aspiration toxicity

Product:

Not considered an aspiration hazard.

Further information

Product:

Remarks: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal.

ALL used oil should be handled with caution and skin contact avoided as far as possible.

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

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 representa- tive of the product as a whole, rather than for individual com- ponent(s).(LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).
•

Ecotoxicity

Product:

Toxicity to fish (Acute toxici-	:
ty)	Remarks: Expected to be practically non toxic:
	LL/EL/IL50 > 100 mg/l

ersion .4	Revision Date: 2016-04-28		0S Number: 0001015908	Print Date: 2016-04-29 Date of last issue: 11.04.2016 Date of first issue: 03.03.2011	
	Toxicity to crustacean (Acute toxicity)		Remarks: Expect LL/EL/IL50 > 100	ed to be practically non toxic: mg/l	
	sity to algae/aquatic s (Acute toxicity)	:	Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l		
Toxic icity)	to fish (Chronic tox-	:	Remarks: Data no	ot available	
	to crustacean	:	Remarks: Data no	ot available	
Ťoxic	onic toxicity) sity to microorganisms te toxicity)	:	Remarks: Data not available		
Pers	istence and degradabil	ity			
<u>Prod</u> Biode	<u>uct:</u> egradability	:	Major constituent	ed to be not readily biodegradable. s are expected to be inherently biodegrada- components that may persist in the environ-	
Bioa	ccumulative potential				
Prod					
Bioad	ccumulation	:	Remarks: Contair cumulate.	ns components with the potential to bioac-	
	tion coefficient: n- nol/water	:	: Pow: > 6 Remarks: (based on information on similar products)		
Mobi	lity in soil				
Prod	<u>uct:</u>				
Mobi	lity	:		under most environmental conditions. will adsorb to soil particles and will not be	
			Remarks: Floats	on water.	
Othe	r adverse effects				
Prod	<u>uct:</u>				
Addit matic	ional ecological infor- on	:	expected to be re Not expected to h	are of non-volatile components, which are not leased to air in any significant quantities. have ozone depletion potential, photochemi- n potential or global warming potential.	
			Poorly soluble mi	xture.	
/ 14				800001015908	

Version 1.4	Revision Date: 2016-04-28	SDS Number: 800001015908	Print Date: 2016-04-29 Date of last issue: 11.04.2016 Date of first issue: 03.03.2011		
		May cause physi	May cause physical fouling of aquatic organisms.		
SECTION 13. DISPOSAL CONSIDERATIONS					
Disposal methods Waste from residues :		ground water, or Waste, spills or u Disposal should I national, and loca	 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. Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or na- 		
Contaminated packaging		 tional requirement Dispose in according to a recognized of the collector or conductor or conduct	 tional requirements and must be complied with. 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. 		

SECTION 14. TRANSPORT INFORMATION

National Regulations

TDG

Not regulated as a dangerous good

International Regulation

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

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 precautions	: Not applicable

Special precautions for user

Remarks

: Special Precautions: Refer to Chapter 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	: MARPOL Annex 1 rules apply for bulk shipments by sea.
------------------------	---

Version	Revision Date:	SDS Number:	Print Date: 2016-04-29
1.4	2016-04-28	800001015908	Date of last issue: 11.04.2016
			Date of first issue: 03.03.2011

SECTION 15. REGULATORY INFORMATION

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

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

The components of this product are reported in the following inventories:		
EINECS	: All components listed or polymer exempt.	
TSCA	: All components listed.	
	•	
DSL	: All components listed.	
-	F	

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR -Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN -Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China: IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC -No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS -Workplace Hazardous Materials Information System

A vertical bar (|) in the left margin indicates an amendment from the previous version. Revision Date : 2016-04-28

Version	Revision Date:	SDS Number:	Print Date: 2016-04-29
1.4	2016-04-28	800001015908	Date of last issue: 11.04.2016
			Date of first issue: 03.03.2011

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

CA / EN