Shell Corena S4 P 100

Version 2.0	Revision Date 11.07.2017	Print Date 12.07.2017	
1. PRODUCT AND COMPANY ID	ENTIFICATION		
Product name	: Shell Corena S4 P 100		
Product code	: 001D7789		
Manufacturer or supplier's o Supplier Telephone Telefax	 Ietails Shell Eastern Petroleum (Pte) Ltd (196000089G) The Metropolis Tower 1, 9 North Buona Vista Drive, #07-01 Singapore 138588 Singapore (+65) 62632975 (+65) 62632049 		
Emergency telephone number Email Contact for Safety Data Sheet	 +65 6263 2975 If you have any enquiries about the please email lubricantSDS@shell.c 		
Recommended use of the chemical and restrictions on use			

Recommended use : Compressor oil.

2. HAZARDS IDENTIFICATION

GHS Classification

Based on available data this substance / mixture does not meet the classification criteria.

GHS label elements	
Hazard pictograms	: No Hazard Symbol required
Signal word	: No signal word
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.
Precautionary statements	: Prevention: No precautionary phrases. Response: No precautionary phrases. Storage: No procautionary phrases

No precautionary phrases.

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	Disposal:	
	No precautionary phrases.	

Sensitising components : Contains Tris(t-butyl-hydroxy-methylphenyl)butane.May produce an allergic reaction.

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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature

: Blend of synthetic esters and additives.

Hazardous components

	10		
Chemical name	CAS-No.	Classification	Concentration
			[%]
Alkaryl amine	68411-46-1	Aquatic Chronic3;	1 - 3
		H412	
1,1,3-Tris (2-Methyl-4-	1843-03-4	Skin Sens.1B; H317	0.1 - 0.9
Hydroxy-5-T ()-			
Butylpheyl) Butan			

For explanation of abbreviations see section 16.

4. FIRST-AID MEASURES

General advice	Not expected to be a health hazard when used un conditions.	der normal
If inhaled	No treatment necessary under normal conditions of If symptoms persist, obtain medical advice.	of use.
In case of skin contact	Remove contaminated clothing. Flush exposed are water and follow by washing with soap if available If persistent irritation occurs, obtain medical attent	
In case of eye contact	Flush eye with copious quantities of water. Remove contact lenses, if present and easy to do. rinsing. If persistent irritation occurs, obtain medical attent	
If swallowed	In general no treatment is necessary unless large are swallowed, however, get medical advice.	quantities
Most important symptoms and effects, both acute and delayed	Oil acne/folliculitis signs and symptoms may includ of black pustules and spots on the skin of exposed Ingestion may result in nausea, vomiting and/or di	d areas.

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Protection of first-aiders	:	When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
Notes to physician	:	Treat symptomatically.
5. FIRE-FIGHTING MEASURES		
Suitable extinguishing media	:	Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable extinguishing media	:	Do not use water in a jet.
Specific hazards during firefighting	:	Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Special protective equipment for firefighters	:	Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Avoid contact with skin and eyes.
Environmental precautions	: Use appropriate containment to avoid environmental contamination. 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 other suitable material and dispose of properly.

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Additional advice	see Chapter 8 of this Safety Data	: 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 of this Safety Data Sheet.	
7. HANDLING AND STORAGE			
General Precautions	vapours, mists or aerosols. Use the information in this data s assessment of local circumstance	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	
Advice on safe handling	: Avoid prolonged or repeated com Avoid inhaling vapour and/or mis When handling product in drums, worn and proper handling equipn Properly dispose of any contamir materials in order to prevent fires	ts. , safety footwear should be nent should be used. nated rags or cleaning	
Avoidance of contact	: Strong oxidising agents.		
Product Transfer	: This material has the potential to Proper grounding and bonding pr during all bulk transfer operations	ocedures should be used	
Storage			
Other data	 Keep container tightly closed and place. Use properly labeled and closable 		
	Store at ambient temperature.		
Packaging material	: Suitable material: For containers steel or high density polyethylene Unsuitable material: PVC.		
Container Advice	: Polyethylene containers should n temperatures because of possible		

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

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	on of substances in the breathing zon	
	o confirm compliance with an OEL and	
	es biological monitoring may also be a	
samples analysed by an accr		
	mmended exposure measurement me	ethods are given below or
	national methods may be available. onal Safety and Health (NIOSH), USA	Nonual of Analytical Moth
http://www.cdc.gov/niosh/		
	alth Administration (OSHA), USA: San	npling and Analytical Method
http://www.osha.gov/		
	(HSE), UK: Methods for the Determin	ation of Hazardous Substan
http://www.hse.gov.uk/		
	tschen Gesetzlichen Unfallversicheru	ng (IFA) , Germany
http://www.dguv.de/inhalt/ind	ex.jsp che et de Securité, (INRS), France htt	n://www.inrs.fr/accueil
	she et de Securite, (inito), i fance fit	p.//www.iiiis.ii/accueii
Engineering measures	: The level of protection and type	es of controls necessary will
	vary depending upon potential e	
	controls based on a risk assess	ment of local circumstances.
	Appropriate measures include:	
	Adequate ventilation to control a	airborne concentrations.
	Where material is heated, spray	ed or mist formed, there is
	greater potential for airborne co	ncentrations to be generated
	General Information:	
	Define procedures for safe hand	lling and maintenance of
	controls. Educate and train workers in the	bazards and control
	measures relevant to normal ac	
	product.	
	Ensure appropriate selection, te	sting and maintenance of
	equipment used to control expo	
	equipment, local exhaust ventila	
	Drain down system prior to equi maintenance.	pment break-in or
	Retain drain downs in sealed st	orage pending disposal or
	subsequent recycle.	
	Always observe good personal	hygiene measures, such as
	washing hands after handling th	
	drinking, and/or smoking. Routi	
	protective equipment to remove contaminated clothing and footv	
	Practice good housekeeping.	
Personal protective equipm	oont	
Protective measures	lent	
		national standards. Oh s
Personal protective equipme	nt (PPE) should meet recommended	national standards. Check w

Respiratory protection	:	No respiratory protection is ordinarily required under normal
		conditions of use.

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	In accordance with good industria precautions should be taken to av If engineering controls do not mai concentrations to a level which is health, select respiratory protection specific conditions of use and me Check with respiratory protective Where air-filtering respirators are appropriate combination of mask Select a filter suitable for the com and vapours [Type A/Type P boil	void breathing of material. intain airborne adequate to protect worker on equipment suitable for the eting relevant legislation. equipment suppliers. suitable, select an and filter. bination of organic gases
Hand protection		
Remarks	: Where hand contact with the proc gloves approved to relevant stand US: F739) made from the followir suitable chemical protection. PVC gloves Suitability and durability of usage, e.g. frequency and duration resistance of glove material, dext from glove suppliers. Contaminate replaced. Personal hygiene is a k care. Gloves must only be worn of gloves, hands should be washed Application of a non-perfumed mod	dards (e.g. Europe: EN374, ng materials may provide C, neoprene or nitrile rubber f a glove is dependent on on of contact, chemical erity. Always seek advice ed gloves should be ey element of effective hand on clean hands. After using and dried thoroughly.
	For continuous contact we recom breakthrough time of more than 2 for > 480 minutes where suitable short-term/splash protection we re recognize that suitable gloves offer may not be available and in this of time maybe acceptable so long a and replacement regimes are follor a good predictor of glove resistant dependent on the exact composit Glove thickness should be typical depending on the glove make and	240 minutes with preference gloves can be identified. For ecommend the same, but ering this level of protection case a lower breakthrough s appropriate maintenance owed. Glove thickness is not ice to a chemical as it is cion of the glove material. Ily greater than 0.35 mm
Eye protection	: If material is handled such that it protective eyewear is recommend	
Skin and body protection	: Skin protection is not ordinarily re work clothes. It is good practice to wear chemic	
Thermal hazards	: Not applicable	
Environmental exposure c	ontrols	
General advice	: Take appropriate measures to ful relevant environmental protection contamination of the environment Chapter 6. If necessary, prevent	l legislation. Avoid by following advice given in

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	being discharged to waste water. V treated in a municipal or industrial before discharge to surface water. Local guidelines on emission limits must be observed for the discharge vapour.	waste water treatment plant for volatile substances

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Liquid at room temperature.	
Colour	: colourless	
Odour	: Slight hydrocarbon	
Odour Threshold	: Data not available	
рН	: Not applicable	
pour point	: -39 °C / -38 °FMethod: ASTM D97	
Initial boiling point and boiling range	: > 280 °C / 536 °Festimated value(s)	
Flash point	: 260 °C / 500 °F Method: ASTM D92 (COC)	
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	: > 1estimated value(s)	
Relative density	: 0.988 (15 °C / 59 °F)	
Density	: 988 kg/m3 (15.0 °C / 59.0 °F) Method: ASTM D1298	
Solubility(ies)		
Water solubility	: negligible	
Solubility in other solvents	: Data not available	
Partition coefficient: n- octanol/water	: Pow: > 6(based on information on similar products)
Auto-ignition temperature	: > 320 °C / 608 °F	

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Viscosity		
Viscosity, dynamic	: Data not available	
Viscosity, kinematic	: 100 mm2/s (40.0 °C / 104.0 °F) Method: ASTM D445	
	10.2 mm2/s (100 °C / 212 °F) Method: ASTM D445	
Explosive properties	: Not classified	
Oxidizing properties	: Data not available	
Conductivity	: This material is not expected to be	a static accumulator.
Decomposition temperature	: Data not available	

10. STABILITY AND REACTIVITY

Reactivity	: The product does not pose any further reactivity hazards ir addition to those listed in the following sub-paragraph.	I
Chemical stability	: Stable.	
Possibility of hazardous reactions	Reacts with strong oxidising agents.	
Conditions to avoid	Extremes of temperature and direct sunlight.	
Incompatible materials	: Strong oxidising agents.	
Hazardous decomposition products	 Hazardous decomposition products are not expected to for during normal storage. 	m

11. TOXICOLOGICAL INFORMATION

	Basis for assessment	:	Information given is based on data on the components and the toxicology of similar products.Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
	Information on likely routes of exposure	:	Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.
Ас	ute toxicity		
	Product:		
	Acute oral toxicity	:	LD50 rat: > 5,000 mg/kg Remarks: Expected to be of low toxicity:

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Acute inhalation toxicity	: Remarks: Not considered to be ar normal conditions of use.	n inhalation hazard under
Acute dermal toxicity	: LD50 Rabbit: > 5,000 mg/kg Remarks: Expected to be of low to	oxicity:

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.

Germ cell mutagenicity

Product:

: Remarks: Not considered a mutagenic hazard.

Carcinogenicity

Product:

Remarks: Not expected to be carcinogenic.

:

Material	GHS/CLP Carcinogenicity Classification
Alkaryl amine	No carcinogenicity classification.
1,1,3-Tris (2-Methyl-4- Hydroxy-5-T ()-Butylpheyl) Butan	No carcinogenicity classification.

Reproductive toxicity

Product:

Remarks: Not expected to impair fertility., Not expected to be

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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.

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).(LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).
Ecotoxicity	
Product:	
Toxicity to fish (Acute : toxicity)	Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l
Toxicity to crustacean (Acute : toxicity)	Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l

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Toxicity to algae/aquatic plants (Acute toxicity)	: Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l
Toxicity to fish (Chronic toxicity)	: Remarks: Data not available
Toxicity to crustacean (Chronic toxicity)	: Remarks: Data not available
Toxicity to microorganisms (Acute toxicity)	: Remarks: Data not available
Persistence and degradability	
Product:	
Biodegradability	: Remarks: Expected to be not readily biodegradable., Major constituents are expected to be inherently biodegradable, but contains components that may persist in the environment.
Bioaccumulative potential	
Product:	
Bioaccumulation	: Remarks: Contains components with the potential to bioaccumulate.
Partition coefficient: n- octanol/water	: Pow: > 6Remarks: (based on information on similar products)
Mobility in soil	
Product:	
Mobility	 Remarks: Liquid under most environmental conditions., If it enters soil, it will adsorb to soil particles and will not be mobile. Remarks: Floats on water.
Other adverse effects	
no data available Product:	
Additional ecological information	 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. Poorly soluble mixture., May cause physical fouling of aquatic organisms.

Waste fro	om residues	:	Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal
			determine the proper waste classification and disposal

Disposal methods

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	methods in compliance with applicab Do not dispose into the environment, courses	
	Waste product should not be allowed ground water, or be disposed of into Waste, spills or used product is dang	the environment.
Contaminated packaging	: Dispose in accordance with prevailing to a recognized collector or contracto the collector or contractor should be Disposal should be in accordance with national, and local laws and regulation	r. The competence of established beforehand. the applicable regional,
Local legislation Remarks	: Disposal should be in accordance with national, and local laws and regulatio	

14. TRANSPORT INFORMATION

International Regulations

ADR

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

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.

15. REGULATORY INFORMATION

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

Workplace Safety and Health Act & Workplace This product is not subject to the requirements

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Safety and Health (General P Regulations	Provision)	in the Act/Regulations	
Fire Safety Act and Fire Safe	ty (Petroleum &	This product is not sub	pject to the requirements
Flammable Materials) Regula	tions	in the Act/Regulations	
Maritime and Port Authority o (Dangerous Goods, Petroleur Regulations		This product is not sub in the Act/Regulations	pject to the requirements
Environmental Protection and	Management Act		bject to control under this
and Environmental Protectior Management (Hazardous Sul Regulations		Act/ Regulation.	
Other international regulation	ons		

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

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

16. OTHER INFORMATION

Full text of H-Statements

H317	May cause an allergic skin reaction.		
H412	Harmful to aquatic life with long lasting effects.		
Full text of other abbreviations			

Aquatic Chronic	Chronic aquatic toxicity
Skin Sens.	Skin sensitisation

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 -

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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				
Further information					
Training advice	: Provide adequate information, in operators.	struction and training for			
Other information	: A vertical bar () in the left margin from the previous version.	n indicates an amendment			

Sources of key data used to	:	The quoted data are from, but not limited to, one or more
compile the Safety Data		sources of information (e.g. toxicological data from Shell
Sheet		Health Services, material suppliers' data, CONCAWE, EU
		IUCLID date base, EC 1272 regulation, etc).

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.

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