SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance
Trade name/designation : Vacuum Tower Bottom
EC-No. : 265-057-8
CAS-No. : 64741-56-6
Product group : Trade product

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

1.2.1. Relevant identified uses

No data available

1.2.2. Uses advised against

No data available

1.3. Details of the supplier of the safety data sheet

Saudi Aramco Luberef Co.
P.O. Box 5518
21432 Jeddah - Saudi Arabia
T +966 12 2296644/ +966 14 328 2300
webmaster@luberef.com - www.luberef.com

1.4. Emergency telephone number

Country	Official advisory body	Address	Emergency number
Ireland	National Poisons Information Centre Beaumont Hospital	Beaumont Hospital Beaumont Road 9 Dublin	+353 1 809 21 66 (public, 8am - 10pm, 7/7) +353 01 809 2566 (Professionals, 24/7)
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit	Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle	0844 892 0111 (UK only, 24/7, healthcare professionals only)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Not applicable.

2.3. Other hazards

Other hazards : PBT/vPvB data : This information is not available.

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance name : Vacuum Tower Bottom
CAS-No. : 64741-56-6

EC-No. : 265-057-8

Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Residues (petroleum), vacuum	(CAS-No.) 64741-56-6 (EC-No.) 265-057-8 (EC Index) -	100	Not classified

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

Additional advice : First aider: Pay attention to self-protection. Never give anything by mouth to an unconscious person. Show this safety data sheet to the doctor in attendance.

Inhalation : Keep at rest. Provide fresh air. In case of doubt or persistent symptoms, consult always a physician.

Skin contact : After contact with skin, wash immediately with plenty of water. In case of doubt or persistent symptoms, consult always a physician.

Eyes contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In case of doubt or persistent symptoms, consult always a physician.

Ingestion : Rinse mouth. Rinse mouth immediately and drink plenty of water. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation : Elevated temperatures or mechanical action may form vapours, mists or fumes which may be irritating to the eyes, nose, throat and lungs.

Skin contact : Hot product (liquid) can cause thermal burns.

Eyes contact : Hot product (liquid) can cause thermal burns. Symptoms of Overexposure. mild eye irritation.

Ingestion : Ingestion is not considered a potential route of exposure.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray, Alcohol resistant foam, Carbon dioxide, Dry extinguishing powder. Sand.

Unsuitable extinguishing media : Strong water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Carbon oxides (CO, CO2). Organic compounds. as appropriate. Sulphur oxides (SOx). Hydrogen sulfide (H2S). sulphuric acid.

5.3. Advice for firefighters

Firefighting instructions : Special protective equipment for firefighters. . In case of fire: Wear self-contained breathing apparatus. (SCBA). Use water spray or fog for cooling exposed containers. Do not allow run-off from fire-fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

For non-emergency personnel : Provide adequate ventilation. Evacuate personnel to a safe area. Use personal protective equipment as required. Concerning personal protective equipment to use, see section 8. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ensure equipment is adequately earthed.

6.1.2. For emergency responders

For emergency responders : Ensure procedures and training for emergency decontamination and disposal are in place. Concerning personal protective equipment to use, see section 8.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

For containment : Stop leak if safe to do so. Dam up the liquid spill.

Methods for cleaning up : Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite or powdered limestone. Collect in closed and suitable containers for disposal. After cleaning, flush traces away with water. Dispose of contaminated materials in accordance with current regulations.

6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8 . Concerning disposal elimination after cleaning, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Hygiene measures : Keep good industrial hygiene. Wash hands and face before breaks and immediately after handling of the product. Separate working clothes from town clothes. Take off contaminated clothing. Keep away from food, drink and animal feedingstuffs.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Refer to the detailed list of incompatible materials in section 10 Stability/Reactivity. Product may release Hydrogen Sulphide: A specific assessment of inhalation risks from the presence of hydrogen sulphide in tank headspaces, confined spaces, product residue, tank waste and waste water, and unintentional releases should be made to help determine controls appropriate to local circumstances.

Storage conditions : Store in a dry, cool and well-ventilated place. Do not store near or with any of the incompatible materials listed in section 10. Bund storage facilities to prevent soil and water pollution in the event of spillage.

Incompatible substances or mixtures : Oxidizing agent. Strong acids. Bases. Nitrates.

Heat and ignition sources : Keep away from open flames, hot surfaces and sources of ignition. Keep out of direct sunlight.

Special rules on packaging : Keep in properly labelled containers.

Packaging materials : Steel. Stainless steel. Coated steels. metal containers.

7.3. Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Additional information : Threshold limits 5.00 mg/m"

8.2. Exposure controls

Engineering measure(s)	:	Provide adequate ventilation. Use only in area provided with appropriate exhaust ventilation. Ensure equipment is adequately earthed. Organisational measures to prevent /limit releases, dispersion and exposure. See also section 7.
Personal protective equipment	:	The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Hand protection	:	The selection of specific gloves for a specific application and time of use in a working area, should also take into account other factors on the working space, such as (but not limited to): other chemicals that are possibly used, physical requirements (protection against cutting/drilling, skill, thermal protection), and the instructions/specification of the supplier of gloves. (EN374 - EN407)
Eye protection	:	During splash contact: face shield (EN166)
Body protection	:	Overalls, apron and boots recommended.
Respiratory protection	:	In the case of vapour formation use a respirator with an approved filter. Self-contained open-circuit compressed air breathing apparatus (EN 137). Filter type: B
Thermal hazard protection	:	Heat resistant gloves (EN407).

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	liquid
Colour	:	No data available
Odour	:	No data available.
Odour threshold	:	No data available
pH	:	No data available
Relative evaporation rate (butylacetate=1)	:	No data available
Melting / freezing point	:	No data available
Freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flash point	:	260 °C
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapour pressure	:	No data available
Vapour density	:	No data available
Relative density	:	No data available
Density	:	1,021 g/ml
Solubility	:	Water: No information available
Partition coefficient n-octanol/water	:	Substance is complex UVCB.
Kinematic viscosity	:	4581 mm^2/s
Dynamic viscosity	:	No data available
Explosive properties	:	Not applicable. The study does not need to be conducted because there are no chemical groups associated with explosive properties present in the molecule.
Oxidising properties	:	Not applicable. The classification procedure needs not to be applied because there are no chemical groups present in the molecule which are associated with oxidising properties.
Explosive limits	:	Not applicable

9.2. Other information

Other properties	:	Sulfur :5.53 wt%.

Additional information : Penetration index :60-70. CCR (Wt%) :16

SECTION 10: Stability and reactivity

10.1. Reactivity

Reference to other sections: 10.5.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. See also section 7.

10.5. Incompatible materials

Incompatible with strong acids and oxidizing agents. Bases. Nitrates . See also section 7 : Handling and storage .

10.6. Hazardous decomposition products

Carbon oxides. Sulphur oxides. Sulphuric acid. Hydrogen sulfide (H2S).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified (Based on available data, the classification criteria are not met.)

Residues (petroleum), vacuum (64741-56-6)	
LD50/oral/rat	> 5000 mg/kg
LD50/dermal/rat	> 2000 mg/kg
LD50/dermal/rabbit	> 2000 mg/kg

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met.)
pH: No data available

Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met.)
pH: No data available

Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met.)

Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met.)

Carcinogenicity : Not classified (Based on available data, the classification criteria are not met.)

Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met.)

STOT-single exposure : Not classified (Based on available data, the classification criteria are not met.)

STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met.)

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met.)

Vacuum Tower Bottom (64741-56-6)	
Kinematic viscosity	4581 mm²/s

Other information : Symptoms related to the physical, chemical and toxicological characteristics.
Reference to other sections: 4.2.

SECTION 12: Ecological information

12.1. Toxicity

Environmental properties : Ecological injuries are not known or expected under normal use.

Residues (petroleum), vacuum (64741-56-6)	
LC50 fish 1	48 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [semi-static])

12.2. Persistence and degradability

Vacuum Tower Bottom (64741-56-6)	
Persistence and degradability	No data available.

12.3. Bioaccumulative potential

Vacuum Tower Bottom (64741-56-6)	
Partition coefficient n-octanol/water	Substance is complex UVCB.

Residues (petroleum), vacuum (64741-56-6)	
BCF fish 1	(no bioaccumulation)
Partition coefficient n-octanol/water	> 6

12.4. Mobility in soil

Vacuum Tower Bottom (64741-56-6)	
Surface tension	No data available
Ecology - soil	No data available.

12.5. Results of PBT and vPvB assessment

No data available

12.6. Other adverse effects

Additional information : No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Handle with care. Safe handling: see section 7 : Handling and storage . Dispose of contaminated materials in accordance with current regulations. Refer to manufacturer/supplier for information on recovery/recycling. Collect and dispose of waste product at an authorised disposal facility.

Additional information : Delivery to an approved waste disposal company.

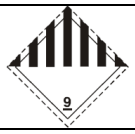
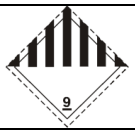
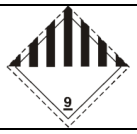
Further ecological information : Do not allow to enter into surface water or drains.

European waste catalogue (2001/573/EC, 75/442/EEC, 91/689/EEC) : The following Waste Codes are only suggestions:
05 01 17 - bitumen .
17 03 02 - bituminous mixtures other than those mentioned in 17 03 01 .
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
3257	3257	3257	3257	3257
14.2. UN proper shipping name				
ELEVATED TEMPERATURE LIQUID, N.O.S. (Residues (petroleum), vacuum)	ELEVATED TEMPERATURE LIQUID, N.O.S. (Residues (petroleum), vacuum)	Elevated temperature liquid, n.o.s. (Residues (petroleum), vacuum)	ELEVATED TEMPERATURE LIQUID, N.O.S. (Residues (petroleum), vacuum)	ELEVATED TEMPERATURE LIQUID, N.O.S. (Residues (petroleum), vacuum)
Transport document description				
UN 3257 ELEVATED TEMPERATURE LIQUID, N.O.S. (Residues (petroleum), vacuum), 9, III, (D)	UN 3257 ELEVATED TEMPERATURE LIQUID, N.O.S. (Residues (petroleum), vacuum), 9, III	UN 3257 Elevated temperature liquid, n.o.s. (Residues (petroleum), vacuum), 9	UN 3257 ELEVATED TEMPERATURE LIQUID, N.O.S. (Residues (petroleum), vacuum), 9, III	UN 3257 ELEVATED TEMPERATURE LIQUID, N.O.S. (Residues (petroleum), vacuum), 9, III

ADR	IMDG	IATA	ADN	RID
14.3. Transport hazard class(es)				
9	9	9	9	9
				
14.4. Packing group				
III	III	Not applicable	III	III
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
Not applicable				

14.6. Special precautions for user

Special precautions for user : Not applicable

- Overland transport

Classification code (ADR) : M9

Special provisions : 274, 643

Limited quantities (ADR) : 0

Excepted quantities (ADR) : E0

Packing instructions (ADR) : P099, IBC99

Portable tank and bulk container instructions (ADR) : T3

Portable tank and bulk container special provisions (ADR) : TP3, TP29

Tank code (ADR) : LGAV

Tank special provisions (ADR) : TU35, TC7, TE6, TE14, TE18, TE24

Vehicle for tank carriage : AT

Transport category (ADR) : 3

Special provisions for carriage - Bulk (ADR) : VC3

Hazard identification number (Kemler No.) : 99

Orange plates :

Tunnel restriction code : D

EAC code : 2Y

- Transport by sea

Special provisions (IMDG) : 232, 274

Limited quantities (IMDG) : 0

Excepted quantities (IMDG) : E0

Packing instructions (IMDG) : P099

IBC packing instructions (IMDG) : IBC01

Tank instructions (IMDG) : T3

Tank special provisions (IMDG) : TP3, TP29

EmS-No. (Fire) : F-A

EmS-No. (Spillage) : S-P

Stowage category (IMDG)	: A
Stowage and handling (IMDG)	: SW5
Flash point (IMDG)	: above 100°C
Properties and observations (IMDG)	: Any liquid which is transported at or above 100°C but below its flashpoint. May cause fire if in contact with combustible material due to extreme temperature.
MFAG-No	: 127;128

- Air transport

PCA Excepted quantities (IATA)	: E0
PCA Limited quantities (IATA)	: Forbidden
PCA limited quantity max net quantity (IATA)	: Forbidden
PCA packing instructions (IATA)	: Forbidden
PCA max net quantity (IATA)	: Forbidden
CAO packing instructions (IATA)	: Forbidden
CAO max net quantity (IATA)	: Forbidden
ERG code (IATA)	: 9L

- Inland waterway transport

Classification code (ADN)	: M9
Special provisions (ADN)	: 274, 58, 643
Limited quantities (ADN)	: 0
Excepted quantities (ADN)	: E0
Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP
Number of blue cones/lights (ADN)	: 0

- Rail transport

Classification code (RID)	: M9
Special provisions (RID)	: 274, 643
Limited quantities (RID)	: 0
Excepted quantities (RID)	: E0
Packing instructions (RID)	: P099, IBC99
Portable tank and bulk container instructions (RID)	: T3
Portable tank and bulk container special provisions (RID)	: TP3, TP29
Tank codes for RID tanks (RID)	: LGAV
Special provisions for RID tanks (RID)	: TU35, TE6, TE14
Transport category (RID)	: 3
Special provisions for carriage – Bulk (RID)	: VC3
Special provisions for carriage - Loading, unloading and handling (RID)	: CW17, CW31
Hazard identification number (RID)	: 99

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

Code: IBC	: Not applicable.

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Vacuum Tower Bottom is not on the REACH Candidate List

Vacuum Tower Bottom is not on the REACH Annex XIV List

15.1.2. National regulations

Germany

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV	:	Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

Waterbezwaarlijkheid	:	11 - Weinig schadelijk voor in het water levende organismen (B)
SZW-lijst van kankerverwekkende stoffen	:	Vacuum Tower Bottom is listed
SZW-lijst van mutagene stoffen	:	Vacuum Tower Bottom is listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding	:	The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid	:	The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling	:	The substance is not listed

15.2. Chemical safety assessment

No data available

SECTION 16: Other information

Abbreviations and acronyms:

	ADN = Accord Européen relatif au Transport International des Marchandises Dangereuses par voie de Navigation du Rhin ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route CLP = Classification, Labelling and Packaging Regulation according to 1272/2008/EC IATA = International Air Transport Association IMDG = International Maritime Dangerous Goods Code LEL = Lower Explosive Limit/Lower Explosion Limit UEL = Upper Explosion Limit/Upper Explosive Limit REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
	N.O.S. = Not Otherwise Specified
	NOAEL = No observed adverse effect level
	vPvB = very persistent and very bioaccumulating
	PBT = persistent, bioaccumulating and toxic (PBT).

Sources of key data used to compile the datasheet	:	European Chemicals Bureau (http://esis.jrc.ec.europa.eu) CONCAWE Hazard classification and labelling of petroleum substances in the European Economic Area – 2010 (revised).
Training advice	:	Normal use of this product shall imply use in accordance with the instructions on the packaging. Manipulations are to be done only by qualified and authorised persons.

Other information : Assessment/classification CLP. Article 9. Calculation method.

According to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Classification according to Regulation (EC) No. 1272/2008 [CLP]
Labelling according to Regulation (EC) No. 1272/2008 [CLP]