Environmental precautions	:	Prevent spill from entering municipal sewers and water sources as it may cause blockages. Advise the relevant authorities if contaminations have occurred.

7. HANDLING AND STORAGE

Safe handling advice	:	On rare occasions, Hydrogen Sulphide may be present which can accumulate to hazardous levels in enclosed spaces. Avoid all personal contact and breathing of gas.
Storage information	:	Adequately vented storage tanks should be maintained below 100°C to prevent evolution of Hydrogen sulphide or degradation of the product.
Storage and handling procedures	:	Avoid local overheating when raising to pumping temperature.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits (OELs)

Components	CAS-No.	Source	TWA	Value		Notations
Asphalt	8052-42-4	ACGIH TLV	LTEL	0,5 mg/m3		Fumes

LTEL: Long Term Exposure Limits - Time Weight Average (TWA) over 8 hours.

STEL: Short Term Exposure Limits - Time Weight Average (TWA) over 15 Minutes

Note: Limits Shown for guidance only. Follow applicable regulations.

Personal Protection Equipment (PPE)

Engineering controls	:	Use in well ventilated area.
Respiratory protection	:	Approved respiratory equipment must be used when airborne concentrations are unknown or exceed the recommended exposure limit. Self-Contained Breathing Apparatus may be required for use in confined or enclosed spaces.
Eye protection	:	If splash with liquid is possible, chemical type goggles should be worn.
Skin and body protection	:	If prolonged or repeated skin contact is likely wear oil impervious gloves and clothing. If handling hot material use heat-resistant gloves, apron and/or other clothing. Good personal hygiene practices should always be followed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Semi-solid.
Colour	:	Black
Odour	:	Characteristic
Solubility	:	Immiscible
Boiling point	:	> 316 °C
Flash Point	:	> 230 °C (ASTM D-92)
Vapour pressure	:	< 0,1 hPa
Relative vapour density	:	16,0
Density	:	> 1,01 g/cm3 @ 20 °C (ASTM D-4052)
Viscosity, kinematic	:	> 8.000 mm2/s @ 40 °C (ASTM D-445)

10. STABILITY AND REACTIVITY

Stability	:	Stable.
Conditions to avoid	:	Hot product in contact with water can cause foaming or sudden evolution of steam which could cause pressure build-up and possibly rupture a tank or vessel. Overheating may result in thermal cracking that produces toxic and flammable vapours.
Materials to avoid	:	Halogens, strong acids, alkalis and oxidizers.
Hazardous decomposition products	:	Fumes, smoke, carbon monoxide, sulphur oxides, aldehydes and other decomposition products, in the case of incomplete combustion.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	:	(Rats): Practically non-toxic (LD50: Greater than 2000 mg/kg). Based on testing of similar products and/or components. Warning Hazard category 5. May be harmful if swallowed.
Acute dermal toxicity	:	(Rabbits): Practically non-toxic (LD50: greater than 2000 mg/kg). Based on testing of similar products and/or the components. Warning Hazard category 5. May be harmful in contact with skin.
Acute inhalation toxicity	:	Not Established.
Skin irritation	:	(Rabbits): Practically non-irritating. (Primary Irritation Index: greater than 0.5 but less than 3). Based on testing of similar products and/or the components. Warning Hazard category 3. Causes mild skin irritation.
Eye irritation	:	(Rabbits): Mild irritant. (Draize score: greater than 6 but 15 or less). Based on testing of similar products and/or the components. May cause mild eye irritation. Hazard category 2B. Warning
Respiratory and skin sensitization	:	This product was not a skin sensitizer when tested in a Modified Buehler Guinea Pig Sensitization Assay.
Germ cell mutagenicity	:	This product tested negative in a series of mutagenic tests.
Carcinogenicity	:	Chronic mouse skin painting studies of straight run bitumen showed no evidence of carcinogenic effects. However, some bituminous compounds may contain low levels of polycyclic aromatic hydrocarbons (PCAHs). Dilution with solvents and prolonged repeated contact under conditions of poor personal hygiene, are a suspected cause of skin cancer in humans.
Reproductive toxicity (Teratogenicity)	:	Negative in a series of genetic assays and teratological studies.
Specific target organ toxicity (STOT) - single exposure	:	No significant effects expected.
Specific target organ toxicity (STOT) - repeated exposure	:	No significant adverse effects were found in studies using repeated dermal applications of bitumen to the skin of laboratory animals for 28 days at 2g/kg . Local dermal irritation and some weight loss was observed.
Aspiration hazard	:	Inhalation studies of high concentrations of bitumen fumes in rodents produced bronchitis, pneumonitis and lung changes (fibrosis and cell damage).

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Toxicity to fish	:	Not established.
Toxicity to aquatic organisms	:	This substance is practically non-toxic to aquatic organisms (LL50: >1000 mg/l).

Elimination information (persistence and degradability)

Biodegradability	:	Bitumens are persistent and not subject to biodegradation.
Mobility	:	Adsorption to sediment and soil will be the predominant behaviour.
Bioaccumulation	:	Minimal owing to low water solubility.

Further information on ecology

Remarks	:	In the absence of specific environmental data for this product, this assessment is based on information for representative substances.

13. DISPOSAL CONSIDERATIONS

Waste disposal	:	This product is suitable for recycling or safe disposal at approved facilities.
Contaminated packaging	:	Empty containers retain residue (liquid and/or vapour) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to refill or clean container since residue is difficult to remove. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.
Other regulations	:	The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity, or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.
Flash Point	:	> 230 °C (ASTM D-92)

14. TRANSPORT INFORMATION

Note	:	Product may be transported by air or road if its temperature is below 100°C and its flashpoint.

ADR

Proper shipping name	:	Elevated Temperature Liquid, n.o.s. [contains ASPHALTS (PETROLEUM)]
UN number	:	3257
Class	:	9
Packing group	:	III
Labelling number	:	9

CFR

Proper shipping name	:	Elevated Temperature Liquid, n.o.s. [contains ASPHALTS (PETROLEUM)]

UN number	:	3257
Class	:	9
Packing group	:	III
Labelling number	:	

IATA_C

Proper shipping name	:	Elevated Temperature Liquid, n.o.s. [contains ASPHALTS (PETROLEUM)]
UN number	:	3257
Class	:	9
Packing group	:	III
Labelling number	:	

IMDG

Proper shipping name	:	Elevated Temperature Liquid, n.o.s. [contains ASPHALTS (PETROLEUM)]
UN number	:	3257
Class	:	9
Packing group	:	III
Labelling number	:	9
IMDG code page number	:	9027-1

15. REGULATORY INFORMATION

US OSHA Hazard Communication Standard	:	This product may be used in certain applications where temperature may lead to generation of bitumen fumes.
Governmental Inventory Status	:	All components comply with TSCA, EINECS/ELINCS, AICS, METI, DSL, KECI, ENCS, PICCS and IECSC.
EU Labelling	:	Product is not dangerous as defined by the European Union Dangerous Substances/Preparations Directives. EU labelling not required.

SARA

U.S. Superfund Amendments and Reauthorization Act SARA Title III	:	This product contains no "EXTREMELY HAZARDOUS SUBSTANCES".
SARA (311/312) Reportable Hazard Categories	:	None

The following product ingredients are cited on the lists below

Chemical name	CAS-No.	Concentration [%]	List Citations
Asphalt	8052-42-4	100,00	1, 18, 19, 20, 21, 23, 25, 26

Regulatory List Searched

1 = ACGIH ALL	6 = IARC 1	11 = TSCA 4	17 = CA P65	22 = MI 293
2 = ACGIH A1	7 = IARC 2A	12 = TSCA 5a2	18 = CA RTK	23 = MN RTK
3 = ACGIH A2	8 = IARC 2B	13 = TSCA 5e	19 = FL RTK	24 = NJ RTK
4 = NTP CARC	9 = OSHA CARC	14 = TSCA 6	20 = IL RTK	25 = PA RTK
5 = NTP SUS	10 = OSHA Z	15 = TSCA 12b	21 = LA RTK	26 = RI RTK

Code Key: CARC = Carcinogen; SUS = Suspected Carcinogen

16. OTHER INFORMATION

Note: Engen products do not contain PCBs.

INJECTION INJURY WARNING: If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a doctor as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

Note: No significant changes have been made to this Safety Data Sheet since the previous date.

Disclaimer

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user and we expressly disclaim all warranties of every kind and nature, including warranties of merchantability and fitness for a particular purpose in respect to the use or suitability of the product. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by	:	Product Safety Specialist Corporate Health, Safety, Environment and Quality Department Engen Petroleum Limited P.O.Box 35, Cape Town, 8000
Telephone	:	(021) 403 4805 / 4911 (Office Hours) (021) 403 4099 (After Hours) 083 628 4415 (Cellular)

Penetration Grade 35/50 Bitumen

SAFETY DATA SHEET

Revision Date : 01.04.2012

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Penetration Grade 35/50 Bitumen
Product use	:	Roadmaking and waterproofing
Supplier	:	Engen Petroleum Limited (Tel: 021-403 4911, a/h: 021-403 4099)
Health Emergency Telephone	:	021-689 5227 (Red Cross Poison Service)
Transport Emergency Telephone	:	011-975 1278/83 (Hazchemwise)
Customer Service Centre	:	0860 036 436 (Sales and Technical Information)
Engen Website	:	http://www.engen.co.za/

2. HAZARDS IDENTIFICATION

Emergency response data : Black Semi-solid. Exposure to fire can generate toxic fumes. DOT ERG No. : 128

GHS Classification:

Health		
Skin irritation	Hazard category 3. Causes mild skin irritation.	Warning
Eye irritation	Hazard category 2B. May cause mild eye irritation.	Warning

Environmental
Aquatic toxicity : Insoluble product, no significant effects on the aquatic environment.

Physical
Flammability : Non-flammable, combustible material.

GHS Labels/Pictograms:

Hazard Statements

Fumes from heated product may cause eye and lung irritation. Hot product can cause thermal burns.

On rare occasions, Hydrogen Sulphide may be present which can accumulate to hazardous levels in enclosed spaces.

Precautionary Statements

Response
IN CASE OF FIRE: use Carbon dioxide, foam or dry chemical for extinction. IF INHALED: Call a POISON CENTRE or doctor if you feel unwell.

Disposal
Do not discharge into lakes, streams, ponds and ground water supply.

See Section 11 for further health effects/toxicological data.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS-No.	Weight%
Asphalt	8052-42-4	100,00

See Section 8 for Exposure Limits (if applicable).

4. FIRST AID MEASURES

Inhalation	:	Under certain conditions smoke may be generated. Remove victim from further exposure. However, if respiratory irritation occurs due to excessive vapour or mist exposure, seek immediate medical assistance. If breathing has stopped, assist ventilation with mechanical device or use mouth-to-mouth resuscitation.
Skin contact	:	Hot product can cause thermal burns. Immediately cool the affected area with water. This will form a sterile cover over the burn. Removal of cooled product should not be attempted unless directed by a burns specialist.
Eye contact	:	If hot product is splashed into eyes flush with water and get immediate medical attention.
Ingestion	:	Not expected to be a problem. However, if discomfort occurs seek medical attention.

5. FIRE-FIGHTING MEASURES

Extinguishing media	:	Carbon dioxide, foam and dry chemical.
Special fire fighting procedure	:	Water may cause a rapid expansion of foaming material. Water spray should only be used to keep fire exposed containers cool and to flush spills away from exposure. Prevent runoff from fire control or dilution from entering streams, municipal sewers, or drinking water supply.
Special protective equipment for firefighters	:	Minimise inhaling fumes of decomposition products, and in enclosed areas, fire fighters must use Self-Contained Breathing Apparatus.
Unusual fire and explosive hazards	:	Exposure to fire can generate toxic fumes.
Products of decomposition	:	Fumes, smoke, carbon monoxide, sulphur oxides, aldehydes and other decomposition products, in the case of incomplete combustion.
Flash Point	:	> 230 °C (ASTM D-92)
NFPA Hazard Id	:	Health: 3; Flammability: 0; Reactivity: 0

6. ACCIDENTAL RELEASE MEASURES

Procedure if material is released or spilled	:	Report spills/releases as required to appropriate authorities.
Methods for cleaning up	:	LAND SPILL: Shovel up and dispose of at an appropriate waste disposal facility in accordance with current applicable laws and regulations, and product characteristics at time of disposal. WATER SPILL: Bitumens are immiscible with water but may be adsorped in the sediment. Surface material may be skimmed off for later disposal.
Personal precautions	:	See Section 8.

Environmental precautions	:	Prevent spill from entering municipal sewers and water sources as it may cause blockages. Advise the relevant authorities if contaminations have occurred.

7. HANDLING AND STORAGE

Safe handling advice	:	On rare occasions, Hydrogen Sulphide may be present which can accumulate to hazardous levels in enclosed spaces. Avoid all personal contact and breathing of gas.
Storage information	:	Adequately vented storage tanks should be maintained below 100°C to prevent evolution of Hydrogen sulphide or degradation of the product.
Storage and handling procedures	:	Avoid local overheating when raising to pumping temperature.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits (OELs)

Components	CAS-No.	Source	TWA	Value		Notations
Asphalt	8052-42-4	ACGIH TLV	LTEL	0,5 mg/m3		Fumes

LTEL: Long Term Exposure Limits - Time Weight Average (TWA) over 8 hours.

STEL: Short Term Exposure Limits - Time Weight Average (TWA) over 15 Minutes

Note: Limits Shown for guidance only. Follow applicable regulations.

Personal Protection Equipment (PPE)

Engineering controls	:	Use in well ventilated area.
Respiratory protection	:	Approved respiratory equipment must be used when airborne concentrations are unknown or exceed the recommended exposure limit. Self-Contained Breathing Apparatus may be required for use in confined or enclosed spaces.
Eye protection	:	If splash with liquid is possible, chemical type goggles should be worn.
Skin and body protection	:	If prolonged or repeated skin contact is likely wear oil impervious gloves and clothing. If handling hot material use heat-resistant gloves, apron and/or other clothing. Good personal hygiene practices should always be followed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Semi-solid.
Colour	:	Black
Odour	:	Characteristic
Solubility	:	Immiscible
Boiling point	:	> 316 °C
Flash Point	:	> 230 °C (ASTM D-92)
Vapour pressure	:	< 0,1 hPa
Relative vapour density	:	16,0
Density	:	> 1,01 g/cm3 @ 20 °C (ASTM D-4052)
Viscosity, kinematic	:	> 8.000 mm2/s @ 40 °C (ASTM D-445)

10. STABILITY AND REACTIVITY

Stability	:	Stable.
Conditions to avoid	:	Hot product in contact with water can cause foaming or sudden evolution of steam which could cause pressure build-up and possibly rupture a tank or vessel. Overheating may result in thermal cracking that produces toxic and flammable vapours.
Materials to avoid	:	Halogens, strong acids, alkalis and oxidizers.
Hazardous decomposition products	:	Fumes, smoke, carbon monoxide, sulphur oxides, aldehydes and other decomposition products, in the case of incomplete combustion.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	:	(Rats): Practically non-toxic (LD50: Greater than 2000 mg/kg). Based on testing of similar products and/or components. Warning Hazard category 5. May be harmful if swallowed.
Acute dermal toxicity	:	(Rabbits): Practically non-toxic (LD50: greater than 2000 mg/kg). Based on testing of similar products and/or the components. Warning Hazard category 5. May be harmful in contact with skin.
Acute inhalation toxicity	:	Not Established.
Skin irritation	:	(Rabbits): Practically non-irritating. (Primary Irritation Index: greater than 0.5 but less than 3). Based on testing of similar products and/or the components. Warning Hazard category 3. Causes mild skin irritation.
Eye irritation	:	(Rabbits): Mild irritant. (Draize score: greater than 6 but 15 or less). Based on testing of similar products and/or the components. May cause mild eye irritation. Hazard category 2B. Warning
Respiratory and skin sensitization	:	This product was not a skin sensitizer when tested in a Modified Buehler Guinea Pig Sensitization Assay.
Germ cell mutagenicity	:	This product tested negative in a series of mutagenic tests.
Carcinogenicity	:	Chronic mouse skin painting studies of straight run bitumen showed no evidence of carcinogenic effects. However, some bituminous compounds may contain low levels of polycyclic aromatic hydrocarbons (PCAHs). Dilution with solvents and prolonged repeated contact under conditions of poor personal hygiene, are a suspected cause of skin cancer in humans.
Reproductive toxicity (Teratogenicity)	:	Negative in a series of genetic assays and teratological studies.
Specific target organ toxicity (STOT) - single exposure	:	No significant effects expected.
Specific target organ toxicity (STOT) - repeated exposure	:	No significant adverse effects were found in studies using repeated dermal applications of bitumen to the skin of laboratory animals for 28 days at 2g/kg . Local dermal irritation and some weight loss was observed.
Aspiration hazard	:	Inhalation studies of high concentrations of bitumen fumes in rodents produced bronchitis, pneumonitis and lung changes (fibrosis and cell damage).

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Toxicity to fish	:	Not established.
Toxicity to aquatic organisms	:	This substance is practically non-toxic to aquatic organisms (LL50: >1000 mg/l).

Elimination information (persistence and degradability)

Biodegradability	:	Bitumens are persistent and not subject to biodegradation.
Mobility	:	Adsorption to sediment and soil will be the predominant behaviour.
Bioaccumulation	:	Minimal owing to low water solubility.

Further information on ecology

Remarks	:	In the absence of specific environmental data for this product, this assessment is based on information for representative substances.

13. DISPOSAL CONSIDERATIONS

Waste disposal	:	This product is suitable for recycling or safe disposal at approved facilities.
Contaminated packaging	:	Empty containers retain residue (liquid and/or vapour) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to refill or clean container since residue is difficult to remove. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.
Other regulations	:	The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity, or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.
Flash Point	:	> 230 °C (ASTM D-92)

14. TRANSPORT INFORMATION

Note	:	Product may be transported by air or road if its temperature is below 100°C and its flashpoint.

ADR

Proper shipping name	:	Elevated Temperature Liquid, n.o.s. [contains ASPHALTS (PETROLEUM)]
UN number	:	3257
Class	:	9
Packing group	:	III
Labelling number	:	9

CFR

Proper shipping name	:	Elevated Temperature Liquid, n.o.s. [contains ASPHALTS (PETROLEUM)]

UN number	:	3257
Class	:	9
Packing group	:	III
Labelling number	:	

IATA_C

Proper shipping name	:	Elevated Temperature Liquid, n.o.s. [contains ASPHALTS (PETROLEUM)]
UN number	:	3257
Class	:	9
Packing group	:	III
Labelling number	:	

IMDG

Proper shipping name	:	Elevated Temperature Liquid, n.o.s. [contains ASPHALTS (PETROLEUM)]
UN number	:	3257
Class	:	9
Packing group	:	III
Labelling number	:	9
IMDG code page number	:	9027-1

15. REGULATORY INFORMATION

US OSHA Hazard Communication Standard	:	This product may be used in certain applications where temperature may lead to generation of bitumen fumes.
Governmental Inventory Status	:	All components comply with TSCA, EINECS/ELINCS, AICS, METI, DSL, KECI, ENCS, PICCS and IECSC.
EU Labelling	:	Product is not dangerous as defined by the European Union Dangerous Substances/Preparations Directives. EU labelling not required.

SARA

U.S. Superfund Amendments and Reauthorization Act SARA Title III	:	This product contains no "EXTREMELY HAZARDOUS SUBSTANCES".
SARA (311/312) Reportable Hazard Categories	:	None

The following product ingredients are cited on the lists below

Chemical name	CAS-No.	Concentration [%]	List Citations
Asphalt	8052-42-4	100,00	1, 18, 19, 20, 21, 23, 25, 26

Regulatory List Searched

1 = ACGIH ALL	6 = IARC 1	11 = TSCA 4	17 = CA P65	22 = MI 293
2 = ACGIH A1	7 = IARC 2A	12 = TSCA 5a2	18 = CA RTK	23 = MN RTK
3 = ACGIH A2	8 = IARC 2B	13 = TSCA 5e	19 = FL RTK	24 = NJ RTK
4 = NTP CARC	9 = OSHA CARC	14 = TSCA 6	20 = IL RTK	25 = PA RTK
5 = NTP SUS	10 = OSHA Z	15 = TSCA 12b	21 = LA RTK	26 = RI RTK

Code Key: CARC = Carcinogen; SUS = Suspected Carcinogen

16. OTHER INFORMATION

Note: Engen products do not contain PCBs.

INJECTION INJURY WARNING: If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a doctor as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

Note: No significant changes have been made to this Safety Data Sheet since the previous date.

Disclaimer

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user and we expressly disclaim all warranties of every kind and nature, including warranties of merchantability and fitness for a particular purpose in respect to the use or suitability of the product. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by	:	Product Safety Specialist Corporate Health, Safety, Environment and Quality Department Engen Petroleum Limited P.O.Box 35, Cape Town, 8000
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PENETRATION GRADE 40/50 BITUMEN

ENGEN

MATERIAL SAFETY DATA SHEET

Revision Date : 01.06.2006

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	PENETRATION GRADE 40/50 BITUMEN
Product use	:	Roadmaking and waterproofing
Supplier	:	Engen Petroleum Limited (Tel: 021-403 4911, a/h: 021-403 4099)
Health Emergency Telephone	:	021-658 5111 (Red Cross Poison Service)
Transport Emergency Telephone	:	011-975 1278/83 (Hazchemwise)
Customer Service Center	:	0860 036 436 (Sales and Technical Information)
MSDS Internet website	:	www.engen.co.za/content/products/default2.htm

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS-No.	Weight%	Symbol Codes	R-Phrase Numbers
Asphalt	8052-42-4	100.00		

See Section 15 for European Label Information.

See Section 8 for Exposure Limits (if applicable).

3. HAZARDS IDENTIFICATION

Emergency response data : Black Semi-solid. Exposure to fire can generate toxic fumes. DOT ERG No. : 128

Potential health effects

Inhalation : Irritation may be caused if exposed to high concentration of fumes evolved when material is heated. Hydrogen sulphide may be present which can accumulate to hazardous levels in enclosed spaces.

Skin : Hot product can cause thermal burns.

Eye : Irritation may be caused if exposed to high concentration of fumes evolved when material is heated.

See Section 11 for further health effects/toxicological data.

4. FIRST AID MEASURES

Inhalation : Under certain conditions smoke may be generated. Remove victim from further exposure. However, if respiratory irritation occurs due to excessive vapour or mist exposure, seek immediate medical assistance. If breathing has stopped, assist ventilation with mechanical device or use mouth-to-mouth resuscitation.

Skin contact : Hot product can cause thermal burns. Immediately cool the affected area with water. Removal of cooled product should not be attempted unless directed by a burns specialist.

Eye contact : If hot product is splashed into eyes flush with water and get immediate medical attention.

Ingestion : Not expected to be a problem. However, if discomfort occurs seek medical attention.

5. FIRE-FIGHTING MEASURES

Extinguishing media	:	Carbon dioxide, foam and dry chemical.
Special fire fighting procedure	:	Water may cause a rapid expansion of foaming material. Water spray should only be used to keep fire exposed containers cool and to flush spills away from exposure. Prevent runoff from fire control or dilution from entering streams, municipal sewers, or drinking water supply.
Special protective equipment for firefighters	:	Minimise inhaling fumes of decomposition products, and in enclosed areas, fire fighters must use Self-Contained Breathing Apparatus.
Unusual fire and explosive hazards	:	Exposure to fire can generate toxic fumes.
Products of decomposition	:	Fumes, smoke, carbon monoxide, sulphur oxides, aldehydes and other decomposition products, in the case of incomplete combustion.
Flash Point	:	> 230 °C (ASTM D-92)
NFPA Hazard Id	:	Health: 3; Flammability: 0; Reactivity: 0

6. ACCIDENTAL RELEASE MEASURES

Procedure if material is released or spilled	:	Report spills/releases as required to appropriate authorities.
Methods for cleaning up	:	LAND SPILL: Shovel up and dispose of at an appropriate waste disposal facility in accordance with current applicable laws and regulations, and product characteristics at time of disposal. WATER SPILL: Bitumens are immiscible with water but may be adsorped in the sediment. Surface material may be skimmed off for later disposal.
Personal precautions	:	See Section 8.
Environmental precautions	:	Prevent spill from entering municipal sewers and water sources as it may cause blockages. Advise the relevant authorities if contaminations have occurred.

7. HANDLING AND STORAGE

Safe handling advice	:	Hydrogen sulphide may be present which can accumulate to hazardous levels in enclosed spaces. Avoid all personal contact and breathing of gas.
Storage information	:	Adequately vented storage tanks should be maintained below 100°C to prevent evolution of Hydrogen sulphide or degradation of the product.
Storage and handling procedures	:	Avoid local overheating when raising to pumping temperature.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits (OELs)

Components	CAS-No.	Source	TWA	Value		Notations
Asphalt	8052-42-4	ACGIH	LTEL	0.5 mg/m3		Fumes

LTEL: Long Term Exposure Limits - Time Weight Average (TWA) over 8 hours.

STEL: Short Term Exposure Limits - Time Weight Average (TWA) over 15 Minutes

Note: Limits Shown for guidance only. Follow applicable regulations.

Personal Protection Equipment (PPE)

Engineering controls	:	Use in well ventilated area.

Respiratory protection	:	Approved respiratory equipment must be used when airborne concentrations are unknown or exceed the recommended exposure limit. Self-Contained Breathing Apparatus may be required for use in confined or enclosed spaces.
Eye protection	:	If splash with liquid is possible, chemical type goggles should be worn.
Skin and body protection	:	If prolonged or repeated skin contact is likely wear oil impervious gloves and clothing. If handling hot material use heat-resistant gloves, apron and/or other clothing. Good personal hygiene practices should always be followed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Semi-solid.
Colour	:	Black
Odour	:	Characteristic
Solubility	:	Immiscible
Boiling point/range	:	> 316 °C
Flash Point	:	> 230 °C (ASTM D-92)
Vapour pressure	:	< 0.1 hPa
Relative vapour density	:	16.0
Density	:	> 1.01 g/cm3 @ 20 °C (ASTM D-4052)
Viscosity, kinematic	:	> 8,000 mm2/s @ 40 °C (ASTM D-445)

10. STABILITY AND REACTIVITY

Stability	:	Stable.
Conditions to avoid	:	Hot product in contact with water can cause foaming or sudden evolution of steam which could cause pressure build-up and possibly rupture a tank or vessel. Overheating may result in thermal cracking that produces toxic and flammable vapours.
Materials to avoid	:	Halogens, strong acids, alkalis and oxidizers.
Hazardous decomposition products	:	Fumes, smoke, carbon monoxide, sulphur oxides, aldehydes and other decomposition products, in the case of incomplete combustion.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	:	(Rats): Practically non-toxic (LD50: Greater than 2000 mg/kg). Based on testing of similar products and/or components.
Acute inhalation toxicity	:	Not Established.
Acute dermal toxicity	:	(Rabbits): Practically non-toxic (LD50: greater than 2000 mg/kg). Based on testing of similar products and/or the components.
Skin irritation	:	(Rabbits): Practically non-irritating. (Primary Irritation Index: greater than 0.5 but less than 3). Based on testing of similar products and/or the components.
Eye irritation	:	(Rabbits): Practically non-irritating. (Draize score: greater than 6 but 15 or less). Based on testing of similar products and/or the components.
Other acute toxicity data	:	Hydrogen sulphide acts as a chemical asphyxiant, preventing the body from utilizing oxygen in the tissue. It can be irritating to the eyes at 10 ppm and to the respiratory tract at 50-100 ppm after 1-hour exposure. Loss of sense of smell at 100 ppm, drowsiness, loss of consciousness, respiratory failure or death can result from exposure above 100 ppm.
Sensitization	:	This product was not a skin sensitizer when tested in a Modified Buehler Guinea Pig Sensitization Assay.
Repeated dose toxicity	:	No significant adverse effects were found in studies using repeated dermal applications of bitumen to the skin of laboratory animals for 28

		days at 2g/kg . Local dermal irritation and some weight loss was observed.
Carcinogenicity	:	Chronic mouse skin painting studies of straight run bitumen showed no evidence of carcinogenic effects. However, some bituminous compounds may contain low levels of polyaromatic compounds (PACs). Dilution with solvents and prolonged repeated contact under conditions of poor personal hygiene, are a suspected cause of skin cancer in humans.
Other toxicological information	:	Inhalation studies of high concentrations of bitumen fumes in rodents produced bronchitis, pneumonitis and lung changes (fibrosis and cell damage).

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Biodegradability	:	Bitumens are persistent and not subject to biodegradation.
Physico-chemical removability	:	Adsorption to sediment and soil will be the predominant behaviour.
Bioaccumulation	:	Minimal owing to low water solubility.

Ecotoxicity effects

Toxicity to aquatic organisms	:	This substance is practically non-toxic to aquatic organisms (LL50 >1000 mg/l).

Further information on ecology

Remarks	:	In the absence of specific environmental data for this product, this assessment is based on information for representative substances.

13. DISPOSAL CONSIDERATIONS

Waste disposal	:	This product is suitable for recycling or safe disposal at approved facilities.
Contaminated packaging	:	Empty containers retain residue (liquid and/or vapour) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to refill or clean container since residue is difficult to remove. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.
Other regulations	:	The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity, or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.
Flash Point	:	> 230 °C (ASTM D-92)

14. TRANSPORT INFORMATION

Note	:	Product may be transported by air or road if its temperature is below 100°C and its flashpoint.

ADR

Proper shipping name	:	Elevated Temperature Liquid, n.o.s. [contains ASPHALTS (PETROLEUM)]
UN number	:	3257

Class : 9
Packing group : III
Labelling number : 9

CFR

Proper shipping name : Elevated Temperature Liquid, n.o.s. [contains ASPHALTS (PETROLEUM)]
UN number : 3257
Class : 9
Packing group : III
Labelling number :

IATA_C

Proper shipping name : Elevated Temperature Liquid, n.o.s. [contains ASPHALTS (PETROLEUM)]
UN number : 3257
Class : 9
Packing group : III
Labelling number :

IMDG

Proper shipping name : Elevated Temperature Liquid, n.o.s. [contains ASPHALTS (PETROLEUM)]
UN number : 3257
Class : 9
Packing group : III
Labelling number : 9
IMDG code page number : 9027-1

15. REGULATORY INFORMATION

US OSHA Hazard Communication Standard : This product may be used in certain applications where temperature may lead to generation of bitumen fumes.

Governmental Inventory Status : All components comply with TSCA, EINECS/ELINCS, AICS, METI, DSL, KECI, ENCS, PICCS and IECSC.

EU Labelling : Product is not dangerous as defined by the European Union Dangerous Substances/Preparations Directives. EU labelling not required.

SARA

U.S. Superfund Amendments and Reauthorization Act SARA Title III : This product contains no "EXTREMELY HAZARDOUS SUBSTANCES".

SARA (311/312) Reportable Hazard Categories : None

The following product ingredients are cited on the lists below

Chemical name	CAS-No.	Concentration [%]	List Citations
Asphalt	8052-42-4	100.00	1, 18, 19, 20, 21, 23, 25, 26

Regulatory List Searched

1 = ACGIH ALL	6 = IARC 1	11 = TSCA 4	17 = CA P65	22 = MI 293
2 = ACGIH A1	7 = IARC 2A	12 = TSCA 5a2	18 = CA RTK	23 = MN RTK
3 = ACGIH A2	8 = IARC 2B	13 = TSCA 5e	19 = FL RTK	24 = NJ RTK
4 = NTP CARC	9 = OSHA CARC	14 = TSCA 6	20 = IL RTK	25 = PA RTK
5 = NTP SUS	10 = OSHA Z	15 = TSCA 12b	21 = LA RTK	26 = RI RTK

Code Key: CARC = Carcinogen; SUS = Suspected Carcinogen

16. OTHER INFORMATION

Note: Engen products do not contain PCBs.

Health studies have shown that many hydrocarbons pose potential human health risks which may vary from

person to person. Information provided on this MSDS reflects intended use. This product should not be used for any other applications. In any case, the following advice should be considered:

INJECTION INJURY WARNING: If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a doctor as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

Precautionary Label Text:

Contains Bitumen.

CAUTION!

SAFETY: Exposure to high fume concentrations from heated product may cause eye and respiratory tract infection. Toxic hydrogen sulphide may be released. Hot product may cause thermal burns and form flammable vapours when contained.

FIRST AID: Under certain conditions smoke may be generated. Remove victim from further exposure. However, if respiratory irritation occurs due to excessive vapour or mist exposure, seek immediate medical assistance. If breathing has stopped, assist ventilation with mechanical device or use mouth-to-mouth resuscitation. Hot product can cause thermal burns. Immediately cool the affected area with water. Removal of cooled bitumen should not be attempted unless directed by a burns specialist. If hot product is splashed into eyes flush with water and get immediate medical attention.

For industrial use only. Not intended or suitable for use in or around a household or dwelling.

Disclaimer

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user and we expressly disclaim all warranties of every kind and nature, including warranties of merchantability and fitness for a particular purpose in respect to the use or suitability of the product. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Prepared by	:	Product Safety Adviser Health, Safety, Environment and Quality Department Engen Petroleum Limited P.O.Box 35, Cape Town, 8000
Telephone	:	(021) 403 4805 / 4911 (Office Hours) (021) 403 4099 (After Hours) 083 628 4415 (Cellular)

BRENNTAG EXPORT

BRENNTAG

PROFORMA INVOICE

INGENIERIE BETON SYSTEME S.A (IBS)
CARRIERE DE KANGANI BP 429
97600 MAMOUDZOU
Mayotte

Page: 1/1

Vitrolles le , 03-02-2010
21, bd de l'Europe, B.P 60026
Vitrolles France

PROFORMA INVOICE NO. : 10030396
Votre référence : mail 26/01 69 COM
CONTRAT NO. : 10030396

MATERIAL / PACKING / QUANTITY			TOTAL EUR
Spécification	:	**ACIDE CHLORHYDRIQUE 32-34%**	
ORIGINE	:	**FRANCE**	
HS code :	:	**28061000**	
		DRUG PRECURSORS (REGULATION 111/2005 EC)	
Emballage	:	8 fûts métal de 234 kgs net, 8.424 kgs tare	
Quantité	:	1.872,000 kgs net	
Prix	:	EUR 755,00 la tonne métrique net	1.413,36
			1.413,36

EXONERATION DE T.V.A -CGI : ART. 261 I

L'exportateur des produits couverts par le présent document déclare que,sauf indication claire du contraire,ces produits ont l'origine préférentielle Union européenne.

Destination Finale : MAYOTTE

Lieu de livraison	:	AMIENS
Marques	:	ACIDE CHLORHYDRIQUE 32-34% NET : 234 KGS/
Conditions de livraison	:	FCA AMIENS
Conditions de paiement	:	In EUR nett par avance.
Bank	:	Societe Generale, Marseille Acc. No. 00025155734 (EUR) Swift/BIC : SOGEFRPP IBAN : FR76 30003 01276 00025155734 74

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

Material Name	:	**ShellSol 2325**
Uses	:	Industrial Solvent.
Product Code	:	Q3351
Manufacturer/Supplier	:	**Shell South Africa Chemicals** Reunion Rocks Road 4110 Isipingo South Africa
Telephone	:	+27 (0)31 913 2000
Fax	:	+27 (0)31 902 5228 / 902 5768
Emergency Telephone Number	:	South Africa :+27 (0)31 902 4075 or +27 (0) 836291307 Zimbabwe : Normal; (04) 703115/117 or 011 200072/73 Kenya :0925411 491 328
Other Information	:	ShellSol is a trademark owned by Shell Trademark Management B.V. and Shell Brands Inc. and used by affiliates of Royal Dutch Shell plc.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Material Formal Name	:	Kerosine (petroleum), hydrodesulfurized
CAS No.	:	64742-81-0
INDEX No.	:	649-423-00-8
EINECS No.	:	265-184-9

3. HAZARDS IDENTIFICATION

Health Hazards	:	May cause moderate irritation to skin. Repeated exposure may cause skin dryness or cracking. Harmful: may cause lung damage if swallowed. Possibility of organ or organ system damage from prolonged exposure; see Chapter 11 for details. Target organ(s): Auditory system. Central nervous system (CNS).
Signs and Symptoms	:	Defatting dermatitis signs and symptoms may include a burning sensation and/or a dried/cracked appearance. Other signs and symptoms of central nervous system (CNS) depression may include headache, nausea, and lack of coordination. Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing.
Environmental Hazards	:	Expected to be harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

4. FIRST AID MEASURES

Inhalation	:	Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.
Skin Contact	:	Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
Eye Contact	:	Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.
Ingestion	:	If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
Advice to Physician	:	Causes central nervous system depression. Dermatitis may result from prolonged or repeated exposure. Potential for chemical pneumonitis. Consider: gastric lavage with protected airway, administration of activated charcoal. Call a doctor or poison control center for guidance.

5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

Specific Hazards	:	Carbon monoxide may be evolved if incomplete combustion occurs. Will float and can be reignited on surface water. The vapour is heavier than air, spreads along the ground and distant ignition is possible.
Extinguishing Media	:	Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only. Do not discharge extinguishing waters into the aquatic environment.
Unsuitable Extinguishing Media	:	Do not use water in a jet.
Protective Equipment for Firefighters	:	Wear full protective clothing and self-contained breathing apparatus.
Additional Advice	:	Keep adjacent containers cool by spraying with water.

6. ACCIDENTAL RELEASE MEASURES

Observe all relevant local and international regulations.

Protective measures	:	Avoid contact with spilled or released material. Immediately remove all contaminated clothing. 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. Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment (of product and fire-fighting water) to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all

equipment.

Clean Up Methods	:	For small liquid spills (< 1 drum), transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
Additional Advice	:	See Chapter 13 for information on disposal. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.

7. HANDLING AND STORAGE

General Precautions	:	Avoid breathing vapours or contact with material. Only use in well ventilated areas. Wash thoroughly after handling. On guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. 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.
Handling	:	Avoid contact with skin, eyes, and clothing. Handle and open container with care in a well-ventilated area. Ventilate workplace in such a way that the Occupational Exposure Limit (OEL) is not exceeded. Do not empty into drains.
Storage	:	Must be stored in a diked (bunded) area. Bulk storage tanks should be diked (bunded). Storage Temperature: Ambient. Maximum storage time: 6 months
Product Transfer	:	If positive displacement pumps are used, these must be fitted with a non-integral pressure relief valve. Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire.
Recommended Materials	:	For containers, or container linings use mild steel, stainless steel. For container paints, use epoxy paint, zinc silicate paint.
Unsuitable Materials	:	Avoid prolonged contact with natural, butyl or nitrile rubbers.
Container Advice	:	Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers.
Additional Information	:	Ensure that all local regulations regarding handling and storage facilities are followed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

In the absence of occupational exposure standards for this product, it is recommended that the following are adopted.
UK Workplace Exposure Limits

11. TOXICOLOGICAL INFORMATION

Basis for Assessment	:	Information given is based on product testing, and/or similar products, and/or components.
Acute Oral Toxicity	:	Expected to be of low toxicity: LD50 >2000 mg/kg , Rat Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.
Acute Dermal Toxicity	:	Expected to be of low toxicity: LD50 >2000 mg/kg , Rat
Acute Inhalation Toxicity	:	Expected to be of low toxicity: LC50 greater than near-saturated vapour concentration. / 4 hours, Rat
Skin Irritation	:	May cause moderate skin irritation (but insufficient to classify). Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.
Eye Irritation	:	Expected to be non-irritating to eyes.
Respiratory Irritation	:	Inhalation of vapours or mists may cause irritation to the respiratory system.
Sensitisation	:	Not expected to be a skin sensitiser.
Repeated Dose Toxicity	:	Kidney: caused kidney effects in male rats which are not considered relevant to humans Auditory system: prolonged and repeated exposures to high concentrations have resulted in hearing loss in rats. Solvent abuse and noise interaction in the work environment may cause hearing loss. Central nervous system: repeated exposure effects the nervous system.
Mutagenicity	:	Not expected to be mutagenic.
Reproductive and Developmental Toxicity	:	Causes foetotoxicity in animals at doses which are maternally toxic. Not expected to impair fertility.

12. ECOLOGICAL INFORMATION

Acute Toxicity		
Fish	:	Expected to be harmful: 10 < LC/EC/IC50 <= 100 mg/l
Aquatic Invertebrates	:	Expected to have low toxicity: LC/EC/IC50 > 100 mg/l
Algae	:	Expected to be harmful: 10 < LC/EC/IC50 <= 100 mg/l
Microorganisms	:	Expected to be harmful: 10 < LC/EC/IC50 <= 100 mg/l
Mobility	:	Floats on water. Adsorbs to soil and has low mobility.
Persistence/degradability	:	Oxidises rapidly by photo-chemical reactions in air. Expected to be readily biodegradable.
Bioaccumulation	:	Has the potential to bioaccumulate.
Other Adverse Effects	:	In view of the high rate of loss from solution, the product is unlikely to pose a significant hazard to aquatic life.

13. DISPOSAL CONSIDERATIONS

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. Waste product should not be allowed to contaminate soil or water.

Container Disposal : Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Refer to Section 7 before handling the product or containers. Residues may cause an explosion hazard if heated above the flash point. Do not puncture, cut or weld uncleaned drums. Send to drum recoverer or metal reclaimer.

Local Legislation : Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

14. TRANSPORT INFORMATION

ADR
This material is not classified as dangerous under ADR regulations.

RID
This material is not classified as dangerous under RID regulations.

IMDG
This material is not classified as dangerous under IMDG regulations.

IATA (Country variations may apply)
This material is not classified as dangerous under IATA regulations.

Additional Information : **Packaging and Transportation of Dangerous Goods is in compliance with Chapter VIII of the Regulations in terms of the National Road Traffic Act of 1996. This regulation is supported by SABS codes of practice SABS 0229 - Packaging of DG for Road Transport, SABS 0233 - IBC for DG and SABS 0232 Parts 1 & 3 - Emergency Response.**

15. REGULATORY INFORMATION

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

EC Label Name	:	KEROSINE (PETROLEUM), HYDRODESULFURIZED
EC label/EC Number	:	265-184-9
EC Annex I Number	:	649-423-00-8
EC Symbols	:	Xn Harmful.
EC Risk Phrases	:	R65 Harmful: May cause lung damage if swallowed. R66 Repeated exposure may cause skin dryness or cracking.
EC Safety Phrases	:	S53 Avoid exposure - obtain special instructions before use. S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
AICS	:	Listed.
DSL	:	Listed.

INV (CN)	: Listed.	
TSCA	: Listed.	
EINECS	: Listed.	265-185-4
KECI (KR)	: Listed.	KE-25620
PICCS (PH)	: Listed.	

National Legislation
OE_HPV : Listed.

Other information : In compliance with the Occupational Health and Safety Act 85 of 1993 and satisfying the requirements of Regulation GN1179 being the Hazardous Chemicals Subsatnce Regulation. Ambient Air Quality Regulation (New)

16. OTHER INFORMATION

R-phrase(s)

R65	Harmful: May cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking.

MSDS Version Number : 3.1

MSDS Effective Date : 16.02.2007

MSDS Revisions : A vertical bar (|) in the left margin indicates an amendment from the previous version.

MSDS Regulation : The content and format of this safety data sheet is in accordance with Commission Directive 2001/58/EC of 27 July 2001, amending for the second time Commission Directive 91/155/EEC.

Uses and Restrictions : Industrial Solvent.

MSDS Distribution : The information in this document should be made available to all who may handle the product

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.