SAFETY DATA SHEET

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

1.1 Identification of the substance/preparation

Product name

Katepal-kumibitumiliuos KBL 20/100, Katepal-gummibitumenlösning, Katepal K-100 Primer

Product code

K-100

1.2 Use of the Substance/Preparation

1.2.1 Expressed in writing

Building material

1.2.2 Standard industrial classification

F 452 House building

1.2.3 Code for the purpose of use

59 Paints and varnishes

13 Building materials

1.3 Company/Undertaking Identification

1.3.1 Manufacturer, importer, supplier

Katepal Oy .

1.3.2 Contact information

Street address	Nurmisaarentie 2	.
Postcode and post office	FIN-37500	.
Post-office box	PL 33	.
Postcode and post office	FIN-37501, Lempäälä, FINLAND	.
Telephone	+358 3 375 9111	.
Telefax	+358 3 375 0974	.
Business ID	Y0150703-0	.
Registered office	Lempäälä	.

1.4 Emergency telephone number

1.4.1 Telephone number, name and address

Fortum Oil and Gas Oy,	010 45 22267	+358 10 45 22267	
Myrkytystietokeskus,	09-471 977 tai 09-4711	+358 9 471 977	+358 9 4711

Fortum Oil and Gas Oy, Porvoon jalostamon paloasema, PL 310, FIN-06101 Porvoo, FINLAND
Myrkytystietokeskus, HYKS, PL 360, Haartmaninkatu 4, FIN-00029 HYKS, Helsinki, FINLAND

2. COMPOSITION/INFORMATION ON INGREDIENTS

2.1 Hazardous components

2.1.1 CAS number or other code	2.1.2 Chemical name of the substance	2.1.3 Concentration	2.1.4 Warning symbol, R phrases and other information
8052-42-4	Bitumen	< 30 %	.
1330-20-7	o-xylene, 0- [1], m-[2], p-[3], mixture of isomers [4]	< 35 %	Xn; R10-20/21-38

64742-82-1	Naphtha (petroleum), hydrodesulfurized heavy Low boiling point hydrogen treated naphtha	< 40 %	Xn; N; R10-51/53-65-66-67 EINECS 200-753-7 (bentzene) < 0,1 %

3. HAZARDS IDENTIFICATION

FIRE AND EXPLOSION HAZARD: Flammable. Volatile. Vapors are heavier than air and together with air may produce explosive mixture..
Harmful: may cause lung damage if swallowed. Repeated exposure may cause skin dryness or cracking.

4. FIRST AID MEASURES

4.2 Inhalation

In the case of symptoms move the person to fresh air. Apply medical assistance after severe exposure.

4.3 Skin contact

Contaminated clothes are to be changed. The skin is to be washed with plenty of water and soap. If needed also cleaning agents may be used. DO NOT USE ANY SOLVENTS. If irritation continues contact doctor.

4.4 Eye contact

Rinse immediately with lashings of water also under the eyelids. Continue rinsing until contacting the doctor.

4.5 Ingestion

The mouth is rinsed with plenty of water and the patient is to be delivered to medical care.

5. FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media

Powder and carbon dioxide. Sand and soil for small fires. Heavy foam and water mist for the professional use.

5.2 Extinguishing media which must not be used for safety reasons

Water and lightweight foam (danger of effervescence or splashing if used for hot product)

5.3 Special exposure hazards in a fire

If the fire heats the containers, there is a risk of explosion due to the increased pressure. There is also an risk of explosion if the vapour which is heavier than air is gathered in cavities or in closed spaces.

5.4 Special protective equipment for firefighters

Respiration apparatus with compressed air and complete protective fitting.

5.5 Specific methods

Containers which are stored near open flame are cooled from a distance with water jets.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions

Unnecessary personnel must be evacuated from the area.

6.3 Methods for cleaning up

Outlet and contaminated soil must be collected and disposed according to moment 13.

6.4 Further information

The accident must be reported immediately to local authorities. In all activities adequate protection must be used (moments 5.4 and 8.2).

7. HANDLING AND STORAGE

7.1 Handling

Isolate from the sources of ignition. Prevent with precautions (for instance grounding) the sparkling caused by static electricity. Take care of adequate ventilation when handling the product. It is not allowed to use the product together with hot bitumen.

7.2 Storage

Store in a dry well ventilated storeroom. Prevent with precautions the contamination of sewer, soil or waterways. Contaminated insulation materials must be replaced (risk of self ignition).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Exposure Limit Values

8.1.1 Exposure limit(s)

CAS-No.	Chemical name of the substance	.	.
95-47-6	o-xylene, 0- [1], m-[2], p- [3], mixture of isomers [4]	50 ppm (8 h)	100 ppm (15 min)
		220 mg/m³ (8 h)	400 mg/m³ (15 min)
64742-82-1	Naphtha (petroleum), hydrodesulfurized heavy Low boiling point hydrogen treated naphtha		.
		770 mg/m³ (8 h)	1000 mg/m³ (15 min)
	Oil fumes		.
		5 mg/m³ (8 h)	.

8.1.2 Other information on limit values

Xylene: Odor limit 0,5 ppm

8.2 Exposure controls

8.2.1 Occupational exposure controls

Hands are washed before brakes and after the work is finished. When working indoors notice the risk of displacement of oxygen and the risk of hydrocarbons.

8.2.1.1 Respiratory protection

Respirator mask (filter of organic gases, type A2/P2).

8.2.1.2 Hand protection

Protective gloves (for instance. nitrile rubber).

8.2.1.3 Eye protection

Eye protectors if risk of splash. Face protection if needed.

8.2.1.4 Skin and body protection

Protective clothing if needed.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 General Information (appearance, odour)

Black, mobile fluid. Characteristic aromatic odour.

9.2 Important Health Safety and Environmental Information

9.2.1	**PH**	-
9.2.2	**Boiling point/range**	137...143 °C (xylene) 150...200 °C (Naphtha (petroleum))
9.2.3	**Flash point**	At least 25°C (xylene, Abel CC)
9.2.4	**Flammability (solid, gas)**	-
9.2.5	**Explosive properties**	
9.2.5.1	**Lower explosion limit**	about 0,6 vol-% (Naphtha (petroleum))

9.2.5.2	**Upper explosion limit**	about 7 vol-% (Naphtha (petroleum))
9.2.7	**Vapour pressure**	About 1 kPa (20 °C, xylene; water = 6,5 kPa) About 1 kPa (38 °C, Petroleum; water = 6,5 kPa)
9.2.8	**Relative density**	About 0,86 kg/l (25 °C; water = 1)
9.2.9	**Solubility**	
9.2.9.1	**Water solubility**	Xylene insoluble Petroleum fraction low solubility (< 0,1 % wt) Bitumen insoluble
9.2.9.2	**Fat solubility (solvent - oil to be specified)**	Not known
9.2.10	**Partition coefficient (n-octanol/water)**	Xylene log Pow 2,8 - 3,2 (estimated)
9.2.11	**Viscosity**	Kinematic viscosity 12 cP (Brookfield, spindle 1)
9.2.13	**Evaporation rate**	Xylene: Relative evaporation rate 0,7 (n-butyl acetate = 1). Petroleum fraction: Relative evaporation rate 0,110

10. STABILITY AND REACTIVITY

10.1 Conditions to avoid

Avoid heat, sparks, open fire, other sources of ignition and oxidizing conditions. To be protected from direct sunshine.

10.2 Materials to avoid

Avoid strong oxidizing materials, strong nitric acid, sulfuric acid, halogens and molten sulfur.

10.3 Hazardous decomposition products

May produce carbon monoxide or dioxide during fire. Carbon monoxide is poisonous if inhaled. Carbon dioxide can have suffocating influence in certain concentrations.

11. TOXICOLOGICAL INFORMATION

11.1 Acute toxicity

Bitumen: --- (solid).
Petroleum: Oral (rat): LD50 > 2000 mg/kg, extremely slightly poisonous if swallowed.
Dermal (rabbit): LD50 > 2000 mg/kg
Inhaled (rat): LC50 > 5000 mg/m3
Xylene: Oral (rat): LD50 = 4300 mg/kg, moderate
Inhaled (rat, 4h): LC50 = 5000 ppm/4h, low/moderate

11.2 Irritation and corrosion

Bitumen: solid bitumen is neither irritating nor corrosive.
Heavy hydrodesulfurized petroleum fraction (CAS 64742-82-1) is not irritating.
Xylene: 500 mg/24 h, dermal, (rabbit); moderate. 5 mg/24h, eye contact, (rabbit); strong

11.3 Sensitisation

Bitumen and Petroleum are not allergenic, there is no knowledge about xylene.

11.4 Subacute, subchronic and prolonged toxicity

Long-term exposure to solid bitumen has caused respiratory passage and skin irritation of test animals. As solutions bitumen has caused tumors on to the skin of test animals (mouse, at least 30 weeks). Long-term exposure to petroleum vapours has caused species-specific kidney damages to test animals (male rat) and tumors (mouse).
Xylene may contain ethylbentzene. Ethylbenzene may be carcinogenic to humans (carcinogen, group 2B, IARC), but there is not enough knowledge to forecast this.

11.5 Human experience

Vapours irritate eyes and respiratory passages. Over exposure cause dizziness, sickness, headache and at the end intoxication. Long-term or frequent contact irritates and makes the skin dry. May be absorbed through the skin. Irritates alimentary canal if swallowed. May cause severe chemical pneumonia if swallowed. Can damage liver and kidneys.

11.6 Further information

Especially fresh bitumen after its manufacturing can contain small amounts of very poisonous hydrogen sulfide, that irritates strongly eyes and respiratory passages. High concentrations can paralyze central nervous system.
If overheated bitumen releases bitumen vapours, that irritate strongly eyes and respiratory passages. Condensate of these bitumen vapours has found to be mutagenic to microbe cells (Ames tests), and tumors on to the skins of test animals (diluted with solvents, mouse).

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity effects

12.1.1 Aquatic toxicity

Bitumen: --- (solid).
Heavy hydrodesulfurized petroleum fraction (CAS 64742-82-1): May be harmful to aquatic organisms.
Xylene: LC50/96h < 17,3 mg/l, fish (Oncorhynchus Mykiss); moderate

12.1.2 Toxicity to other organisms

Heavy hydrodesulfurized petroleum fraction (CAS 64742-82-1) may decompose in the wastewater treatment plant.

12.2 Mobility

Bitumen becomes solid and do not dissolve to water. Petroleum based hydrocarbons of bitumen evaporate quickly to air. Petroleum mixture evaporates easily from the surface of the soil and water. Some petroleum hydrocarbons are partly water soluble (bentzene, toluene, ethyl benzene and xylene), and they evaporate quickly from the water solution (period of decay in laboratory 2 hours). The product may penetrate through the soil and it may be drifted to groundwater, which spreads the most soluble components. In anaerobic conditions the decomposing is very slowly. The macromolecular petroleum hydrocarbons may be adsorbed to the organic material in soil or sediment (log Kow >3).
Xylene is not water-soluble. The product is less dense than water and it will float on the surface. Depending on the conditions it evaporates from water or from the surface of the soil. Large quantities may contaminate the soil and groundwater.

12.3 Persistence and degradability

12.3.1 Biological degradability

Bitumen: --- (solid).
Heavy hydrodesulfurized petroleum fraction (CAS 64742-82-1): The product may be naturally biologically decomposing. The evaporation is the fastest and the most remarkable decay process on the water surface, sediment and soil.

The main component of xylene: in aerobic conditions fast biological decomposing, permanent in anaerobic conditions.

12.3.2 Chemical degradation

Bitumen: --- (solid).
Petroleum: Does not hydrolyze in water. The volatile hydrocarbons are air chemically decomposing.
Xylene: Does not hydrolyze in water, become quickly oxidized in air through photochemical reactions.

12.4 Bioaccumulative potential

Bitumen: --- (solid).
Petroleum hydrocarbons are possibly cumulative (log Kow 2...7), but they evaporate easily.
Xylene: Is not remarkably biologically cumulative, BCF = 15.

12.5 Other adverse effects

Xylene may be harmful to aquatic organisms. Possible long-term effects to aquatic organisms are not expectable.

13. DISPOSAL CONSIDERATIONS

Solid bitumen can be disposed in the waste disposal site. In liquid state the product is problem-waste, that must be disposed according to local instructions and laws. When dealing with waste the risks must be noticed. Also the safety precautions, warning labels and compulsory registration must be organized.

14. TRANSPORT INFORMATION

14.1	**UN-No**	1999
14.2	**Packing group**	III
14.3	**Land transport**	
14.3.1	**ADR/RID**	3 lk, 31 c), VAK
14.3.2	**Risk code**	30
14.3.3	**Description of the goods**	Bitumen cut-backs
14.3.4	**Further Information**	CEFIC Tremcard 786, 30G37
14.4	**Sea transport**	
14.4.1	**IMDG**	3.3
14.4.2	**Proper technical name**	Bitumen cut-backs
14.4.3	**Further Information**	Page 3382, EmS No. 3-05, MFAG No. 311, MARINE POLLUTANT
14.5	**Air transport**	
14.5.1	**ICAO/IATA**	3
14.5.2	**Proper technical name**	Bitumen cut-backs

15. REGULATORY INFORMATION

15.1 Information on the warning label

15.1.1 Letter code of the warning symbol and indications of danger for the preparation

Xn	Harmful
N	Dangerous for the environment

15.1.2 Names of the ingredients given on the warning label

Naphtha (petroleum), hydrodesulfurized heavy Low boiling point hydrogen treated naphtha

o-xylene, 0- [1], m-[2], p-[3], mixture of isomers [4]

15.1.3 R-phrase(s)

R10	Flammable.
R20/21	Harmful by inhalation and in contact with skin.
R38	Irritating to skin.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65	Harmful: may cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking.
R67	Vapours may cause drowsiness and dizziness.

15.1.4 S-phrase(s)

S2	Keep out of reach of children.
S23	Do not breathe.
S24/25	Avoid contact with skin and eyes.
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S53	Avoid exposure - obtain special instructions before use.
S62	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
S43	In case of fire, use powder and carbon dioxide.
S51	Use only in well ventilated areas.

16. OTHER INFORMATION

16.1 Text of R phrases mentioned in Section 2

R10	Flammable.
R20/21	Harmful by inhalation and in contact with skin.
R38	Irritating to skin.
R51/53	Toxic to aquatic organisms may cause long-term adverse effects in the aquatic environment.
R65	Harmful: may cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking.
R67	Vapours may cause drowsiness and dizziness.

16.4 Further Information

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