

Conforms to Regulation 1907/2006 (Reach), Annex II, as amended by Commission Regulation (EU) 2015/830

Safety Data Sheet: Cationic Bitumen Emulsion & Polymer Modified Bitumen Emulsion

1. Identification of Substance and of the Company.

1.1 Product Identifier: Cationic and Polymer Modified Bitumen Emulsion. See section 16 for further information.

1.2 Intended or recommended uses: Cationic and Polymer modified Bitumen emulsions may be used in a variety of applications including as a surface dressing binder in road maintenance applications.

1.3 Details of Supplier of the Safety Data Sheet: Tennants Bitumen
9 Airport Road West
Belfast
BT3 9ED

1.4 Emergency Telephone

✦ Normal Hours 028 90 455 135

✦ Emergency Number: out of office hours: 07969047411

2. Hazards Identification

2.1 Classification

Product definition: Mixture

Classification according to Regulation (EC) No 1272/2008 [CLP/GHS] Not classified.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label Elements
Hazard pictograms

Signal word	No signal word.
Hazard statements	No known significant effects or critical hazards.
Prevention	Not applicable.
Precautionary statements	Not applicable.
Response	Not applicable.
Storage	Not applicable.
Disposal	Not applicable.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	Not applicable.

(2.0 Hazards identification continued.)

2.3 Other Hazards

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII Not applicable.

Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII Not applicable.

3. Composition / Information on Ingredients.

3.2. Mixtures: This material is defined as a mixture.

Cationic and polymer modified bitumen emulsions consist of specified quantities of bitumen emulsified in water. The amounts of additional ingredients, which are required to emulsify the bitumen, do not present any hazard at the concentrations used.

Product Name	Nominal Binder Content (%)
<i>Cationic 70</i>	70
<i>Cationic 65</i>	65
<i>Cationic 60</i>	60
<i>Cationic 40</i>	40
<i>Bondcoat</i>	65

(3.0 composition / information on ingredients continued.)

Substance / Mixture: Mixture

Product ingredient Name	Identifiers	%	Classification Regulation (EC) No. 1272/2008 [CLP]	Type
Bitumen	REACH #: 01-2119480172-44 EC: 232-490-9 CAS: 8052-42-4	40 to 70	Not Classified	--
Water	REACH #: exempted EC: 231-791-2 CAS: 7732-18-5	30 to 50	Not Classified	--
Polymer*	REACH #: exempted	< 7	Not Classified	--
Hydrochloric Acid	REACH #: 01-2119484862-27 EC: 231-595-7 CAS: 7647-01-0 Index: 017-002-01-X	<1	Met. Corr. 1, H290 Skin Corr. 1B, H314 STOT SE 3, H335	[1] [2]
Calcium Chloride	EC: 233-140-8 CAS: 10043-52-4 Index: 017-013-00-2	<1	Acute Tox. 4, H302 Eye Irrit. 2, H319	[1]
Amine EM22 N-Oleyl	REACH #: 01-2119487002-46 EC:230-528-9 CAS: 7173-62-8	>=40<50	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Damage. 1:H318 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 MFactor (Acute) 10 MFactor (Chronic) 1	[1]

Tall Oil Fatty Acids	REACH #:01-2119492544-31 EC:272-756-1 CAS:68910-93-0	>=30<40	Skin Irrit. 2 H315 EyeDam. 1:H318 Aquatic Acute: H400 Aquatic Chronic1 H410 MFactor (Acute)1 MFactor (Chronic) 1
Diethylene glycol	REACH#: 01-2119457857-21 EC:203-872-2 CAS:111-46-6	>=20<25	Acute Toc 4 H302
Amine EM24			
Tallow Amine	CAS: 68951-72-4 EC:273-160-4	>=50<60	Acute Tox. 4, H302 Skin Corr. 1C, H314 Eye Damage. 1:H318 Aquatic Acute 1, H400 Aquatic Chronic 2, H411 MFactor (Acute) 10
N-Oleyl -1,3 diaminopropane	REACH#:01-2119487002-46 CAS:7173-62-8 EC:230-528-9	>=50<60	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Damage. 1:H318 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 MFactor (Acute) 10 MFactor (Chronic) 1

* Where applicable for polymer modified emulsion.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

- [1] Substance classified with a health or environmental hazard.
- [2] Substance with a workplace exposure limit

4. First Aid Measures.

4.1. General Information:

Exposure Route	Description of First Aid Measures
Inhalation	In case of symptoms arising from inhalation of product fumes, mists or vapour : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Remove casualty to a quiet and well ventilated place if safe to do so. If irritation persists, get medical attention.
Eye contact	<p>WARM PRODUCT: Immediately flush eyes with running water for at least 5 minutes, keeping eyelids open. Immediately obtain specialist medical assessment and treatment for the casualty.</p> <p>COLD PRODUCT: In the event of eye contact with cold product, rinse cautiously with water for several minutes.</p> <p>Remove contact lenses, if present and easy to do. Continue rinsing. If irritation, blurred vision or swelling occurs and persists, obtain medical advice from a specialist</p>

(4.0 First Aid measures continued.)

Exposure Route	Description of First Aid Measures

Skin Contact	<p>WARM PRODUCT: Do not put ice on the burn. Remove non-sticking garments carefully. Seek medical attention in all cases of serious burns. Never use gasoline, kerosene or other solvents for washing of contaminated skin.</p> <p>COLD PRODUCT: Wash contaminated skin with soap and water. Wash with soap and water. Remove contaminated clothing and shoes.</p> <p>Handle with care and dispose of in a safe manner.</p>
Ingestion	<p>Do NOT induce vomiting. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. Get medical advice/attention if you feel unwell. Never give anything by mouth to an unconscious person. Remove victim to fresh air and keep at rest in a position comfortable for breathing.</p>
Protection of first-aiders	<p>No action shall be taken involving any personal risk or without suitable training.</p>

4.2. Most Important Symptoms and Effects, both acute and delayed.

Eye contact	<p>WARM PRODUCT: Causes severe burns.</p> <p>COLD PRODUCT: Eye contact may cause redness/transient pain.</p>
Inhalation	<p>Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.</p>
Skin contact	<p>Contact with hot/molten product will cause severe burns. Few or no symptoms expected.</p>
Ingestion	<p>Few or no symptoms expected. If any, slight nausea might occur.</p>

4.3. Indication of any immediate medical attention and special treatment needed. Notes to physician: Treatment should in general be symptomatic and directed to relieving any effects. If for any reason the product must be removed, this can be done using a slightly warmed medicinal liquid paraffin.

5. Fire Fighting Measures

5.1. Extinguishing Media

Suitable Extinguishing Media: Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable Extinguishing Media: Do not use direct water jets on the burning product; they could cause splattering and spread the fire. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

5.2. Special Hazards arising from the substance or mixture.

Hazards from the substance or mixture:

In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products:

Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H₂S, SO_x (sulfur oxides) or sulfuric acid and unidentified organic and inorganic compounds.

5.3. Advice for Fire Fighters

Special precautions for firefighters:

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures.

For non-emergency personnel

Keep non-involved personnel away from the area of spillage. Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency. Stop leak if safe to do so. Avoid direct contact with the product. Stay upwind/keep distance from source. In case of large spillages, alert occupants in downwind areas.

Eliminate all ignition sources if safe to do so. Spillages of limited amounts of product, especially in the open air when vapours will be usually quickly dispersed, are dynamic situations, which will presumably limit the exposure to dangerous concentrations.

Note : recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave/current direction and speed) may significantly influence the choice of appropriate actions. For this reason, local experts should be consulted when necessary. Local regulations may also prescribe or limit actions to be taken.

For emergency responders:

Small spillages: normal antistatic working clothes are usually adequate.

Large spillages: full body suit of chemically resistant and thermal resistant material should be used. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons. If contact with hot product is possible or anticipated, gloves should be heat-resistant and thermally insulated. Safety helmet with integrated full face visor and neck protection. antistatic non-skid safety shoes or boots. Respiratory protection : A half or full-face respirator with filter(s) for organic vapours (and when applicable for H₂S) a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.

(6.0 Accidental Release Measures continued.)

6.2. Environmental Precautions

Prevent product from entering sewers, rivers or other bodies of water. If necessary dike the product with dry earth, sand or similar non-combustible materials. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

Note : solidified product may clog drains and sewers. See Ecological information (Section 12)

6.3. Methods and material for containment and cleaning up.

Small Spill

Stop leak if without risk. Absorb spilled product with suitable non-combustible materials. Collect solidified product with suitable means (e.g. shovels).

Large Spill

When inside buildings or confined spaces, ensure adequate ventilation. Transfer collected product and other contaminated materials to suitable containers for recovery or safe disposal. If necessary, cautiously

use water fog to help the cooling. Do not play direct jets of foam or water on the spilled molten product, as this may cause splattering.

6.4. References to other sections

See Section 1 for emergency contact information.

See Section 8 for information on appropriate personal protective equipment.

See Section 13 for additional waste treatment information.

7. Handling and Storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

General information

The product should always be handled and stored at temperatures below 90 °C. Higher temperatures will cause boil-over or splashing of the hot material. The product shall always be stored above the freezing temperature. When loading, always check that receiving tank has sufficient space to accommodate and that the tank temperature is below 90 °C.

In contact with soil material the emulsion will break and the bitumen phase will remain on the soil surface. In contact with water, the emulsion will dissipate across the surface and will be diluted, the bitumen phase will be dispersed.

7.1. Precautions for safe handling:

Protective measures Do not ingest. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with eyes, skin and clothing.

Prevent the risk of slipping. Take precautionary measures against static discharge.

Avoid splash filling of bulk volumes when handling hot liquid product.

Notes: See Section 8 for information on appropriate personal protective equipment.

See section 13 for waste disposal information.

(7.0 Handling and storage continued).

Advice on general occupational hygiene

Ensure that proper housekeeping measures are in place. Contaminated materials should not be allowed to accumulate in the workplaces and should never be kept inside the pockets. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash hands thoroughly after handling. Change contaminated clothes at the end of working shift. Do not use solvents or other products with a defatting effect on the skin. See also Section 8 for additional information on hygiene measures

7.2. Conditions for safe storage, including any incompatibilities:

Storage area layout, tank design, equipment and operating procedures must comply with the relevant regional, national or local legislation. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations.

Recommended materials for containers, or container linings use mild steel, stainless steel.

Recommended materials: iron / steel, Solvent resistant material.

Not suitable: Some synthetic materials may be unsuitable for containers or container linings depending on the material specification and intended use.

Aluminium. Compatibility should be checked with the manufacturer. Self-heating leading to auto ignition at the surfaces of porous or fibrous materials impregnated with oils or bitumen, can occur at temperatures as low as 100°C. Oil and bitumen contamination of thermal insulation materials and the accumulation of oily rags or similar material near hot surfaces, should therefore be avoided, and lagging should be replaced where necessary by a non-absorbent type of insulation.

Keep only in the original container or in a suitable container for this kind of product. Keep container tightly closed and sealed until ready for use. Do not store in unlabelled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Product tanks may be heated by hot oil, electricity or flame tubes. Under circumstances where bitumen is being pumped from a tank containing heater tubes precautions should be taken to prevent the level dropping 150 mm above the tubes unless the heat has been switched off for a period of sufficient cooling. Where the product is being pumped from a storage tank or road tank care should be taken to avoid the risk of fire or explosion as a result of exposing hot heater tubes. ; Protect from sunlight.

7.3. Specified end uses:

Recommendations:

Not Available.

Industrial sector specific solutions: Not Available.

8. Exposure Controls / Personal Protection required:

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1. Control Parameters

Occupational exposure limits

Product / ingredient name	Exposure Limit Value
Bitumen Fume	[Air contaminant] EH40/2005 WELs (United Kingdom (UK), 12/2011). STEL: 10 mg/m ³ 15 minutes. TWA: 5 mg/m ³ 8 hours.
Hydrochloric Acid	[Air contaminant] EH40/2005 WELs (United Kingdom (UK), 12/2011). STEL: 8 mg/m ³ 15 minutes. Form: Gas and aerosol mists STEL: 5 ppm 15 minutes. Form: Gas and aerosol mists TWA: 2 mg/m ³ 8 hours. Form: Gas and aerosol mists TWA: 1 ppm 8 hours. Form: Gas and aerosol mists

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required. (8.0 Exposure controls \ personal protection required continued).

DNELs/DMELs

Product / ingredient name	Type	Exposure	Value	Population	Effects

Asphalt	DNEL	Long term Inhalation	2.9 mg/m ³	Workers	Local
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PNECs

No PNECs available

8.2. Exposure Controls

Appropriate engineering controls

When inside buildings or confined spaces, ensure adequate ventilation. Minimise exposure to fumes. Do not enter empty storage tanks until measurements of available oxygen have been carried out.

Individual protection measures

Hygiene measures	Ensure that eyewash stations and safety showers are close to the workstation location. Wash contaminated clothing before reuse.
Eye / face protection	If splashing is likely, full head and face protection (protective shield and/or safety goggles) should be used. For loading/unloading operations: wear safety helmet with integrated full-face visor and neck protection.

(8.0 Exposure controls \ personal protection required continued).

Skin protection

Hand protection	4 - 8 hours (breakthrough time): nitrile rubber Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons. Gloves must be periodically inspected and changed in case of wear, perforations or contaminations. If contact with hot product is possible or anticipated, gloves should be heat resistant and thermally insulated.
Body protection	For hot products, wear protective clothing for normal operations : heat resistant coveralls (with legs over boots and cuffs over gloves), heat resistant gloves and safety footwear covering the ankle. Coveralls should be changed at the end of the work shift and cleaned as necessary to avoid transfer of product to clothes or underwear. For loading/unloading operations: wear safety helmet with integrated full face visor and neck protection.
Other skin protection	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection	Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If exposure levels cannot be determined or estimated with adequate confidence, or an oxygen deficiency is possible, only SCBA's should be used. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and Chemical Properties

9.1. Information on Basic Physical and Chemical Properties.

Physical State: Liquid

Colour: Not available

Odour: Not available

Odour Threshold: Not applicable pH: >2

Melting Point: Not available

Freezing Point: Not available

Initial Boiling Point / and Boiling: Not available

Flash Point [Method]: Open Cup: Not applicable

Evaporation Rate (n-butyl acetate = 1): >1 (butyl acetate = 1)

Flammability (Solid, Gas): Not available

Upper/Lower Flammable Limits or explosive limits: Not available Vapour Vapour

Pressure: 100 Pa @ 20 °C

Density (Air = 1): 0.99 to 1.1 g/cm³ [15°C]

Solubility(ies): water Insoluble in water

Partition coefficient (n-Octanol/Water Partition Coefficient): Not applicable

Autoignition Temperature: >300°C

Decomposition Temperature: >350°C Viscosity: Kinematic

(40°C): Not applicable Explosive Properties: Not available.

Oxidizing Properties: Not available.

9.2. Other Information

None

10. Stability and Reactivity

10.1. Reactivity: Stable under normal conditions.

10.2. Chemical Stability: Stable under normal conditions.

10.3. Possibility of Hazardous Reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

10.4. Conditions to Avoid: The product should always be handled and stored at temperatures below 90 °C.

Higher temperatures will cause boil-over or splashing of the hot material. Change bitumen or oil contaminated insulation. If necessary, a non-absorbent type of insulation should be used. Keep away from acids or bases. The product shall always be stored above the freezing temperature.

10.5. Incompatible Materials: Oil and bitumen contamination of thermal insulation materials and the accumulation of oily rags or similar material near hot surfaces, should therefore be avoided, and lagging should be replaced where necessary by a non-absorbent type of insulation.

10.6. Hazardous Decomposition Products: None under normal conditions at ambient temperatures. Combustion (incomplete) will likely generate oxides of carbon, sulphur and nitrogen, as well as additional undetermined organic compounds of the same elements.

11 Toxicological Information

11.1 Information on Toxicological Effects

Acute toxicity

Product/ Ingredient name	Result	Species	Dose	Exposure	Remarks
Bitumen*	LC50 Inhalation Vapour	Rat	>94.4 mg/m ³	4 hours	--

Bitumen*	LD50 Dermal	Rabbit	>5000 mg/kg	--	--
Bitumen*	LD50 Oral	Rat	>5000 mg/kg	--	--

Conclusion/Summary

No known significant effects or critical hazards

Product/ ingredient name	Result	Species	Score	Observatio n	Remarks
Bitumen*	Skin - Non-irritant to skin.	Rabbit	8	--	--
	Eyes - Non-irritating to the eyes.	Rabbit	8	--	--

Skin

No known significant effects or critical hazards

Eyes

No known significant effects or critical hazards

Respiratory

No known significant effects or critical hazards

(11.0 Toxicological Information continued).

Sensitisation

Skin

No known significant effects or critical hazards

Respiratory

No known significant effects or critical hazards

Mutagenicity

Conclusion/Summary No known significant effects or critical hazards

Bitumen*	Acute NOEC \geq 1000 mg/l Fresh water	Fish	21 days
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Conclusion/Summary No known significant effects or critical hazards

12.2. Persistence and Degradability

Product/ingredient name	Aquatic half-life	photolysis	Biodegradability
Bitumen*	--	--	Not readily

Conclusion/Summary Not applicable

12.3. Bioaccumulative Potential

Conclusion/Summary Bitumen : Although all constituents of bitumen have log

Kow in excess of 6 and hence, are potentially bio-accumulative, the low water solubility and high molecular weight make the bio-availability to aquatic organisms limited. Bio-accumulation is unlikely

12.4. Mobility in Soil

Mobility In contact with soil material the emulsion will break and the bitumen phase will remain on the soil surface. Low mobility in soil, based on experimental data

(12.0 Ecological Information continued).

12.5. Results of PBT and vPvB assessment

Not applicable

Not applicable.

12.6. Other Adverse Effects

The main effect of spillage of the product in water or onto soil is adsorption to ground material, which causes physical fouling..

13. Disposal Considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1. Waste Treatment Methods

Methods of disposal Contaminated or waste substance (not directly recyclable): Disposal can be carried out directly, or by delivery to qualified waste handlers. National legislation may identify a specific organization, and/or prescribe composition limits and methods for recovery or disposal

Hazardous waste Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

European waste catalogue (EWC)

Waste code	Waste designation
17 03 02	bituminous mixtures other than those mentioned in 17 03 01

Packaging

Methods of Disposal The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special Precautions This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

14. Transport Information

	ARD/RID	AND	IMO/IMDG Classification	ICAO/IATA Classification
14.1 UN Number	--	--	--	--
14.2 UN Proper Shipping Name	--	--	--	--
14.3 Transport Hazard Class(es):	--	--	--	--
14.4 Packing Group:	No.	No.	No.	No.
14.5 Environmental Hazards	--	--	--	--
Additional information	--	--	--	--

14.6 Special Precautions for user

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex I of MARPOL 73/78 and the IBC Code: Not Applicable,

15. Regulatory Information

15.1. Safety, health and Environmental Regulations/Legislation Specific for the Substance or Mixture:

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed. Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on Not the manufacture, placing on the market and use of certain dangerous Not applicable applicable.

substances, mixtures and articles

Other EU Directives

Seveso Directive

Annex XIV

This product is controlled under the Seveso Directive

15.2. Chemical Safety Assessment

This product contains substances for which Chemical Safety Assessments are still required.

16. Other Information

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road

ATE = Acute Toxicity Estimate

CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]

CMR = Carcinogen, Mutagen or Reproductive toxicant

CSA = Chemical Safety Assessment

CO₂ = carbon dioxide

DNEL = Derived No Effect Level

EC50 = Half maximal effective concentration

EUH statement = CLP-specific Hazard statement

IATA = International Air Transport Association

IC50 = Half maximal inhibitory concentration

IMDG = International Maritime Dangerous Goods

LC50 = Median lethal concentration

LD50 = Median lethal dose

PNEC = Predicted No Effect Concentration

PBT = Persistent, Bioaccumulative and Toxic

RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail

REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals

Regulation [Regulation (EC) No. 1907/2006]

SCBA = Self-Contained Breathing Apparatus

SVHC = Substances of Very High Concern

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Not classified.	

Full Text of abbreviated H Statement	H302 – Harmful if swallowed H319 – Causes serious eye irritation	
Full Text of Classifications [CLP/GHS]	Acute Tox. 4, H302 Eye Irrit. 2, H319	ACUTE TOXICITY (oral) - Category 4 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2

* This product could be a pure substance or a blend of the below given CAS numbers:

Substances	CAS Number	REACH Registration Number
Bitumen	8052-42-4	01-2119480172-44-0007 01-2119480172-44-0008 01-2119480172-44-0082
Bitumen, oxidized (PI<2)	64742-93-4	01-2119498270-36-0027 01-2119498270-36-0028
Residues (petroleum), vacuum	64741-56-6	01-2119498291-32-0035 01-2119498291-32-0034 01-2119498291-32-0065

Residues (petroleum), thermal cracked vacuum	92062-05-0	01-2119498290-34-0010
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Notes:

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.