
SAFETY DATA SHEET

A. Identification of the Substance / Preparation and of the Company Undertaking

Product Name: SpEC Bitmul R

Company: Speciality Engineering Chemicals

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B. Composition / Information on Ingredients

Synonyms: Asphalt; Petroleum residue; Binder containing filler and rubber latex suitable for emulsification.

Chemical Nature/Formula: SpEC Bitmul R is a rubberized mineral-filled bitumen emulsion of a creamy consistency.

Other Information: SpEC Bitmul R is prepared by mixing or milling bitumen, water, emulsifier chemicals, filler and rubber latex to ensure that performance criteria are met. This process does not affect the classification or handling information given elsewhere in the Material Data Sheet.

C. Hazards Identification

Main Hazards (Human): SpEC Bitmul R will adhere to the skin. Prolonged exposure to SpEC Bitmul R fumes above the recommended exposure standard may cause irritation to the skin, eyes and upper respiratory tract.

Other Hazards (Environment): SpEC Bitmul R is not classified as dangerous under current SA and EC criteria. Fouling of shorelines and environment. Although SpEC Bitmul R emulsions are biodegradable they can act as a waste pollutant. SpEC Bitmul R emulsions have a high solubility in water thus they should be kept away from natural sources, e.g. dams, streams, etc.

Safety Hazards: Not classified as flammable but will burn once the water phase has evaporated off. Contact of hot bitumen with SpEC Bitmul R emulsion leads to violent expansion and high potential for boil over.

D. First Aid Measures

Symptoms and Effects

Inhalation: Vapours cause light irritation of respiratory system if present in high concentrations. Excessive exposure to the filter (silica) could cause silicosis.

Eyes: Symptoms may include pain, tears, swelling, redness and blurred vision.

Ingestion: Grade 1 – LD50 = 5-15 g/kg.

Skin: Slight burns may result from contact with SpEC Bitmul R emulsion. Cold emulsion may cause skin irritation which could cause dermatitis.

Product Inhalation:	Remove to fresh air. If breathing has stopped, apply respiration and seek immediate medical assistance. If breathing but unconscious, place in the recovery position and seek immediate medical assistance.
Product in Eyes:	Rinse eyes immediately with large amounts of cold water for at least (10) minutes. Keep eye closed. Patient not to rub the eyes. If irritation persists seek medical advice.
Product Ingestion:	Vomiting should not be induced. If the patient is conscious let the patient drink 1 to 2 glasses of water or milk. Protect the airway if vomiting begins. If rapid recovery does not occur, immediately obtain medical assistance.
Product on Skin:	The affected areas should be immediately immersed in or flushed with large amounts of cold water. Speed is crucial, because if the emulsion has not been broken; it may washed off. Prompt medical advice should be sought.

Advice to Physician

Eyes:	Under medical supervision the eyes may be rinsed with medicinally approved vegetable oil or liberal amounts of warm medicinal paraffin. This should be followed by washing with soap and water and the applicants of a medically-approved re-fatting agent.
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E. Fire Fighting Measures

Extinguishing Media:	Small and large fire – SpEC Bitmul R emulsions contain approximately 50% water, thus are unlikely. In the event that all the water has evaporated off and the residual bitumen catches alight then sand or earth can be used to extinguish small fires. Large fires can be extinguished with dry chemical powder, carbon dioxide (CO ₂). Water may be used to cool down surrounding area, exposed surfaces and to protect personnel.
Hazards:	Combustion is likely to give rise to a potentially dangerous complex mixture of gases and airborne. Particulars, including carbon monoxide, oxides of sulfur and unidentified organic compounds. Vapours may travel to ignition sources and flash back.
Protective Equipment:	Proper protective equipment including self-contained breathing apparatus and eye protection must be worn when dealing with fires, especially fires in confined areas.

F. Accidental Release Measures

Personal Protection:	If possible, wait until product has cooled down. Evacuate the area of all non-essential personnel. Remove ignition sources if possible. Shut off leaks if possible without personal risk. Protective clothing should be worn.
Small Spillages:	Use sand, fire retardant-treated saw dust, diatomaceous earth, etc to absorb or contain the spill. Contaminated material should be collected and placed in suitable, clearly marked containers for disposal or reclamation in accordance with local laws and regulations.
Large Spillages:	Prevent the spill from spreading by construction trenches or barriers, with sand, earth, or other contaminated material.
Environmental Precautions:	Prevent further leakage or spillage if safe to do so.

G. Handling and Storage

Handling:	Avoid skin contact with heated and ambient emulsion. Avoid breathing in fumes or vapours from emulsion. When handling product in drums, safety footwear should be worn and proper handling equipment.
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Do not eat, drink or smoke while product is being handled or used.

Handling Temperature: SpEC Bitmul R emulsion is applied at ambient temperature.

Storage and Storage Conditions: SpEC Bitmul R emulsions are stored at ambient temperatures. Precautions must be taken to prevent the ingress of water and/or dirt into the product. Different types and grades may not be mixed. SpEC Bitmul R emulsions stored for excessive periods must be thoroughly circulated and drums well rolled prior to application.

H. Exposure Controls / Personal Protection

Occupational Exposure Standards

<u>Component</u>	<u>Limit</u>	<u>Limit Type</u>	<u>Reference</u>
Bitumen Fume	5mg/m ³	TWA*	ACGIH*
H ₂ S	14mg/m ³	TWA*	ACGIH*
H ₂ S	21mg/m ³	STEL*	ACGIH*

ACGIH* - Threshold Limit Values for Chemical Substance and Physical Agents and Biological Exposure Indices, American Conference of Industrial Hygienists, Abu Dhabi, UAE current edition.

TWA* - Time Weighed Average. The time weighed average concentration for a normal 8 hour working day and 40 hour work week.

STEL* - Short-term Exposure Levels. The concentration to which workers can be exposed continuously for a short period of time without suffering from:

- 1.) Irritation
- 2.) Chronic irreversible tissue damage
- 3.) Narcosis of sufficient degree to increase the likelihood of accidental injury; impair self rescue or materially reduce work efficiency and provided that the daily TWA is not exceeded.

Engineering Control Measures: Use engineering controls to keep airborne concentrations below the exposure limits. Locate emergency equipment at well-marked and clearly identified stations in case emergency escape is necessary.

Personal Protection

Respiratory: Avoid excessive inhalation. Wear a fresh air mask.

Hand: Heat and solvent resistant rubber or plastic gloves close fitting at the wrist and with arm protection.

Eyes: Safety goggles and/or face shield.

Skin: Protective clothing comprising of safety shoes or boots, cotton acid resistant overalls, close fitting at neck and wrist.

Hygiene Measures: Wash overalls and undergarments regularly. Dispose of soiled gloves. Wash hands before eating, drinking and if one smokes. Do not eat, drink or smoke while product is being handled.

I. Physical and Chemical Properties

Appearance: Brown liquid at ambient temperature

Odour: Wood resin

pH: Anionic – basic nature

Boiling Point/Range: 100°C

Melting Point/Range:	-
Flammable Limits:	Non-flammable
Explosive Properties:	Potential low
Oxidizing Properties:	-
Density @ 20°C kg/l:	1.0 gm/cm ³ at 25°C
Solubility in Water:	Highly soluble
Solubility in Solvents:	Soluble
Partition Coefficient:	-
Relative Vapour Density:	-
Solids Content, %:	29 min
Viscosity:	15-25 Poises

J. Stability and Reactivity

Conditions to Avoid:	SpEC Bitmul R emulsions are incompatible with bitumen and tar products. SpEC Bitmul R emulsions are not compatible with cationic emulsions and polar acidic solutions.
Hazardous Decomposition Products:	None expected under normal use conditions.

K. Toxicological Information

Acute Toxicity:	Oral – toxicological information has not been determined for SpEC Bitmul R bitumen emulsions. Dermal Inhalation – not considered being an inhalation hazard under normal conditions of use.
Chronic Toxicity:	No effects and data found that supports the long-term toxicity of bitumen.
Irritation:	Skin – LD50 expected to be above 2000 mg/kg. Condensed vapours to be slightly irritate to the skin. Not expected to be a skin sensitizer. Eyes – vapours from hot emulsion can be expected to be a slight irritant. Respiratory – slight irritation of respiratory system in high concentrations. The effect is temporary.
Carcinogenicity:	There is no evidence that bitumen is carcinogenic to humans. Repeated and prolonged exposure to bitumen emulsions can result in skin eye irritations and allergic responses in some individuals.
Mutagenicity:	No history or data to support mutagenicity.
Reproductive Hazard:	No data available.

L. Ecological Information

Ecotoxicity:	Soluble in water. Practically non-toxic, LC/EC50} 100mg/ to aquatic organisms.
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Persistence: Biodegradation – not inherently biodegradable.

Bioaccumulation – SpEC Bitmul R do not bio-accumulate.

Mobility – SpEC Bitmul R emulsions are liquid at ambient temperatures, thus must be considered mobile. Once the water has evaporated off, they become a solid reverting to the bitumen state.

M. Disposal Considerations

Disposal: Waste product should not allow contaminating soil or water. Waste arising from spillage or tank cleaning operations should be disposed of in accordance with prevailing regulations (Section 20 (1) of the Environment Conservation Act) preferably by a recognized collector or contractor. The competence of the collector or contractor should be established beforehand.

Disposal Packaging: SpEC Bitmul R emulsion packaging should be drained bunged prior to being returned to the supplier. Do not remove or deface marking or labels presently on drum.

N. Transport Information

No information available.

O. Regulatory Information

No information available.

P. Other Information

No information available.