

This Safety Data Sheet is in accordance with Regulation (EC) No 1907/2006 (REACH).

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

1.1 Product Identifier

Material Name : Polymer Modified Bitumen

CAS No : Mixture

EC No : Mixture

Other Names of Product: PMB, SBS Modified Bitumen, PMB 40/100-55 (3.5), PMB 40/100-60 (4), PMB 25/55-55 (3.5), PMB 25/55-60 (4), PMB 25/55-65 (4.5), PMB 25/55-70 (5)

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

Industrial use.

1.3 Details of the supplier of the substance or mixture

Manufacturer/Supplier: Tüpraş

Adress : Türkiye Petrol Rafinerileri A.Ş. Genel Müdürlüğü KÖRFEZ/ KOCAELİ

Telephone : +90 262 316 30 00

Fax : +90 262 316 30 10-11

e-mail : selcen.temeltopallar@tupras.com.tr
yasin.ersoz@tupras.com.tr

1.4 Emergency Telephone Number

Company Telephone : +90 262 316 30 00

2. HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

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

2.2 Label Elements (Regulation (EC) No 1272/2008)

Symbols : No hazard symbol required

Signal Word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements : No precautionary phrases.

2.3 Other hazards

This material can contain hydrogen sulfide (H₂S), a very toxic and extremely flammable gas.

Hot product may cause severe eye burns.

Hot product can cause thermal burns which may result in permanent skin damage.

Not expected to be a health hazard at ambient temperature.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

CAS NO	EINECS NO	Chemical Composition	% Conc.	Risk Phrases (Regulation (EC) No 1272/2008)
8052-42-4	232-490-9	Bitumen or vacuum residue	93-97	Not classified.
9003-55-8	618-370-2	Styrene-Butadiene-Styrene Polymer	3-7	Not classified.

NOTE: During storage or transit of hot bitumen, hydrogen sulfide may be generated.

4. FIRST-AID MEASURES

4.1 Description of First Aid Measures

Inhalation: If inhalation of mists, fumes or vapour causes irritation to the nose or throat, or coughing, remove to fresh air. If symptoms persist obtain medical advice.

Skin Contact:

Cold Product : Wash skin thoroughly with soap and water as soon as reasonably practicable. Remove heavily contaminated clothing and wash underlying skin.

Hot Product : Flood cold water to dissipate heat. Burns should be covered with clean cotton or gauze, and the casualty taken to hospital as soon as possible for examination and treatment.

Never use gasoline, kerosene or other solvents to remove bitumen from skin or clothing.

Eye Contact:

Cold Product : Wash eye thoroughly with copious quantities of water, ensuring eyelids are held open. Obtain medical advice if any pain or redness develops or persists.

Hot Product : Flood with cold water to dissipate heat, if possible, ensuring eyelids are held open. Obtain medical attention immediately.

Ingestion: If contamination of the mouth occurs, wash out thoroughly with water. Except as a deliberate act, the ingestion or large amounts of product is unlikely. If it should occur, do not induce vomiting; obtain medical advice.

4.2 Most important symptoms/effects, acute & delayed

Inhalation: Harmful if inhaled. Casualties suffering ill effects as a result of exposure to hydrogen sulfide should be immediately removed to fresh air and medical assistance obtained without delay. Unconscious casualties must be placed in the recovery position. Monitor breathing and pulse rate and if breathing has failed, or is deemed inadequate, respiration must be assisted, preferably by the mouth to mouth method. Seek medical attention immediately.

Skin: Hot product can cause thermal burns which may result in permanent skin damage. Where skin burns occur the area should be immediately immersed in cold water until the bitumen is thoroughly cooled.

Eye: Hot product may cause severe eye burns.

Ingestion: Expected to be a low ingestion hazard.

4.3 Indication of immediate medical attention and special treatment needed

There are no specific antidotes or other therapeutic measures, treat symptomatically.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing Media

Use alcohol resistant foam, dry powder, water spray and sand. DO NOT USE water jets.

5.2 Special hazards arising from substance or mixture

Combustion results from toxic gases. It can burn at high temperatures. Hazardous combustion products are carbon oxides, hydrogen sulfides, sulphur oxides.

5.3 Advice for fire-fighters

For major fires call the Fire Service. Ensure an escape path is always available from any fire. Use alcohol resistant foam, dry powder, water spray and sand. DO NOT USE water jets. Fires in confined spaces should be dealt with by trained personnel wearing approved breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Ensure good ventilation. Wear protective clothing. Depending upon its temperature the product may be liquid, semi-solid or solid. Protect drains from spills and prevent entry of product. This may in blockage on cooling. Scrape up bulk of solid material and remove remainder with sand or other suitable inert absorbent material.

Recovery of large spillages should be effected by specialist personnel. Spillages of hot product in confined spaces may be especially hazardous because highly toxic hydrogen sulphide gas may be present. Vapour may collect in any confined space.

In the case of spillage on water, prevent the spread of product by the use of suitable barrier equipment. Recover product from the surface. Protect environmentally sensitive areas and water supplies. In the event of spillages contact the appropriate authorities.

6.2 Environmental precautions

Depending on the temperature, it can be liquid, semi-solid and solid. Spilled product makes the surface slippery. Prevent the spill product from entering the drainage system. Isolate spilled product from sources of ignition. Provide good ventilation. Because H₂S may be emitted from the hot liquid spilled in the enclosed space, it must be intervened by trained personnel using an oxygen mask.

6.3 Methods and material for containment and cleaning up

Recovery of large spillages should be effected by specialist personnel. Small and uncontained spillages should be absorbed with liquid-binding material and collected in suitable containers for disposal. Large spillages should be collected mechanically for disposal.

6.4 Reference to other sections

Refer to sections 8 and 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Ensure good ventilation and avoid as far as reasonably practicable the inhalation and contact with vapours. Use disposable cloths and discard when soiled. Do not put soiled cloths into pockets. Avoid contact with skin, eyes and clothes. Contact with hot product may cause burns. Wash hands before breaks and immediately after using the product. Product may release hydrogen sulfide. A specific assessment of inhalation risks from the presence of hydrogen sulphide in tank headspaces, confined spaces, product tank waste and waste water. Prohibit water contacting hot bitumen because of the danger of boil-over.

7.2 Conditions for safe storage, including any incompatibilities

Store and dispense only in well ventilated areas away from sources of ignition. Store and use only in equipment/containers designed for use with this product. The storage tank should be mixed to provide homogeneity. Store between the following temperatures: 175 to 185°C. Overheating of product may cause thermal decomposition, resulting in the generation of flammable vapours, and crosslinking of the polymers, resulting in solidification of the product. Confined spaces contaminated with hydrogen sulphide must always be considered as constituting potentially life threatening environments. Containers must be properly labelled and kept closed when not in use. Do not remove warning labels from containers. Empty packages may contain some remaining product. Retain hazard warning labels on empty packages as a

guide to the safe handling, storage and disposal of empty packaging. Do not enter storage tanks without breathing apparatus unless the tank has been well ventilated and the tank atmosphere has been shown to contain hydrocarbon vapour concentrations of less than 1% of the lower flammability limit and an oxygen concentration of at least 20% volume.

7.3 Specific end use

Except as provided in Section 1.2 is not required to offer any specific suggestions.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Material	Exposure Limits
Bitumen (CAS 8052-42-4)	ACGIH TLV/TWA : 0.5 mg/m ³ (8 hours)
Hydrogen sulfide (CAS 7783-06-4)	ACGIH TLV/TWA : 1 ppm (8 hours) ACGIH TLV/STEL: 5 ppm (15 minutes)

8.2 Exposure controls

No appropriate occupational exposure limits.

8.2.1 Appropriate engineering controls

Ensure good ventilation.

8.2.2 Personal protective precautions

Personal protective equipment:

Eyes: Hot material: Wear face visor or heat resistant goggles in circumstances where eye contact can accidentally occur.

Cold material: Wear safety glasses with side shields.

Skin: Hot material: Wear suitable heat resistant protective clothing.

Cold material: Wear chemical resistant gloves.

Inhalation: If operations are such that exposure to vapour, mist or fume may be anticipated, then suitable approved respiratory equipment should be worn. Note: Approved air-supplied breathing apparatus must be worn where there may be potential for inhalation of hydrogen sulphide gas.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

	Test Unit	Guarantee	Test Method
Physical state		Black, Semi-solid	
Flash point, min	°C	220	ASTM D 93

9.2 Other Information

No relevant additional information available.

10. STABILITY AND REACTIVITY

10.1 Reactivity

Combustion may generate smoke, carbon dioxide and hazardous gases including carbon monoxide, hydrogen sulphide and oxides of sulphur.

10.2 Chemical Stability

Stable under normal conditions.

10.3 Possibility of Hazardous Reactions

Overheating of product may cause thermal decomposition, resulting in the production of vapours of a flammable nature.

10.4 Conditions to avoid

Keep away from heat, sparks, open flames and other ignition.

10.5 Incompatible materials

Strong oxidising agents.

10.6 Hazardous decomposition products

Thermal decomposition products will vary with conditions. Overheating in storage may cause partial vaporization and decomposition with the production of toxic hydrogen sulphide gas (H₂S).

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	: Not available.
Skin Irritation/Corrosion	: Will cause burns if hot material contacts skin.
Eye Irritation/Corrosion	: Will cause burns if hot material contacts eyes.
Sensitization	: Not available.

Mutagenicity : Not available.
Carcinogenicity : Not available.
Reproductive Toxicity : Not available.
Specific Target Organ Toxicity (single exposure) : Not available.
Specific Target Organ Toxicity (repeated exposure) : Not available.

Potential acute health effects

Eye contact: Will cause burns if hot material contacts eyes.

Skin contact: Will cause burns if hot material contacts skin. When product is heated to high temperatures vapours, mists or fumes will be given off and may condense, contaminating the skin. Prolonged or repeated skin contact may eventually result in dermatitis or more serious irreversible skin disorders.

Inhalation: May cause irritation to nose and throat at high vapour concentrations. May be toxic by inhalation when hydrogen sulphide is present in the vapour.

Ingestion: Unlikely to cause harm if accidentally swallowed in small doses, larger quantities may cause nausea and diarrhoea.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Data is not available.

12.2 Persistence and degradability

This product is not biodegradable.

12.3 Bioaccumulative potential

This material is expected to bioaccumulate.

12.4 Mobility in soil

Soil penetration and mobility is low.

12.5 Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

12.6 Other adverse effects

Data is not available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Material Disposal: Dispose of by incineration or other suitable means under conditions approved by the local authority or via a licensed waste disposal contractor. Do not allow to

enter into surface water or drains. Dispose of contaminated materials in accordance with current regulations.

Container Disposal: Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard if heated above the flash point. Hydrogen sulfide gas may accumulate in storage tanks.

Local Legislation: Ministry of Environment and Urbanism "Regulation on Control of Waste"

14. TRANSPORT INFORMATION

Land transport (ADR/RID):

14.1 UN Number: 3257

14.2 UN proper shipping name: Elevated temperature liquid, n.o.s., at or above 100 °C and below its flashpoint (including molten metals, molten salts, etc.)

14.3 Transport hazard class(es): 9

14.4 Packing group: III

14.5 Environmental hazards: No

14.6 Special precautions for user: Refer to Chapter 7

Land transport (AND):

14.1 UN Number: 3257

14.2 UN proper shipping name: Elevated temperature liquid, n.o.s., at or above 100 °C and below its flashpoint (including molten metals, molten salts, etc.)

14.3 Transport hazard class(es): 9

14.4 Packing group: III

14.5 Environmental hazards: No

14.6 Special precautions for user: Refer to Chapter 7

Sea transport (IMDG Code):

14.1 UN Number: 3257

14.2 UN proper shipping name: Elevated temperature liquid, n.o.s., at or above 100 °C and below its flashpoint (including molten metals, molten salts, etc.)

14.3 Transport hazard class(es): 9

14.4 Packing group: III

14.5 Marine pollutant: No

14.6 Special precautions for user: Refer to Chapter 7

Air transport (IATA):

Not regulated.

*Material is in solid form under 100°C. It could be transport in solid state.

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

No data.

15. REGULATORY INFORMATION

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

The contents and format of this SDS are in accordance with EEC Commission Directive 1272/2008/EC and EEC Commission Regulation 1907/2006/EC (REACH).

15.2 National Regulations

This Safety Data Sheet is accordance with "Regulation on Safety Data Sheets regarding the Hazardous Substances and Mixtures" published on 13 December 2014 on the official Gazette with No:29204.

16. OTHER INFORMATION

16.1 Other Information

The information presented about health, safety and environment issues in this safety data sheet was given by considering of best knowledge and reliable sources at the date of its preparation. Although maximum effort was shown, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Health and safety precautions and environmental advice noted in this data sheet may not be accurate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. No statement made in this data sheet shall be construed as a permission, recommendation or authorization given or implied to practise any patented invention without a valid licence. The TÜPRAŞ shall not be responsible for any damage or injury resulting from abnormal use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material.

Abbreviations :

- REACH : European Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals
- EINECS : European Inventory of Existing Commercial
- CAS : Chemical Abstract Service
- ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road

RID : Regulations Concerning the International Transport of Dangerous Goods by Rail
IMDG : International Maritime Code for Dangerous Goods
ICAO : International Civil Aviation Organization
IATA : International Air Transport Association
CLP : Classification, Labelling and Packaging Regulation according to 1272/2008/EC
TWA : Time weighted average
STEL : Short-term exposure limit.

16.2 Related Person

Competent Person Accreditation no: TSE GBF-A-0-2828