



Material Safety Data Sheet (MSDS) – Bitumen PMB AE1

Product Name: Polymer Modified Bitumen AE1 (PMB AE1)

Chemical Family: Bituminous Binder

Website: www.atdmco.com

1. PRODUCT IDENTIFICATION

Synonyms: PMB AE1, Polymer Bitumen, Modified Asphalt

CAS Number: 8052-42-4 (Base Bitumen)

UN Number: 3257 (Elevated Temperature Liquid, N.O.S.)

HS Code: 27150000

Use: Road construction, waterproofing, and industrial binder applications

2. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS No.	Content (%)
Bitumen	8052-42-4	85–95%
Styrene-Butadiene-Styrene (SBS) Polymer	9003-55-8	3–7%
Additives / Stabilizers	-	0.5–2%
Mineral Fillers (optional)	-	<5%

3. HAZARDS IDENTIFICATION

Physical State: Solid or semi-solid at ambient temperature; liquid at >150°C.

Primary Hazards: Hot material may cause severe thermal burns.

Health Hazards:

- Vapors/fumes during heating may irritate eyes, skin, and respiratory tract.
- Prolonged skin contact with cold bitumen may cause dermatitis.

Environmental Hazards: Not classified as environmentally hazardous under normal use.

4. FIRST AID MEASURES

- **Inhalation:** Move to fresh air. Seek medical attention if symptoms persist.

- **Skin Contact:** Cool affected area with water (do not remove hardened bitumen). Get medical help.
- **Eye Contact:** Rinse immediately with water for at least 15 minutes. Seek medical advice.
- **Ingestion:** Do not induce vomiting. Seek medical attention immediately.

5. FIRE-FIGHTING MEASURES

Flash Point: $\geq 230^{\circ}\text{C}$ (ASTM D92)

Suitable Extinguishing Media: Foam, dry chemical, CO_2 , sand.

Unsuitable Media: Do not use water jet.

Combustion Products: Carbon monoxide (CO), carbon dioxide (CO_2), and hydrogen sulfide (H_2S).

Firefighter Advice: Use self-contained breathing apparatus and protective gear.

6. ACCIDENTAL RELEASE MEASURES

- Allow hot material to cool before handling.
 - Use sand or earth to contain spill.
 - Avoid entry into drains or watercourses.
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7. HANDLING AND STORAGE

- Handle only at temperatures below 180°C .
 - Avoid inhaling fumes during heating.
 - Store in closed containers, away from direct sunlight.
 - Use adequate ventilation in hot-mix plants or production areas.
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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Parameter	Limit
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Bitumen Fume (ACGIH TLV)**	0.5 mg/m^3 (as benzene-soluble aerosol)
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Protective Equipment:

- Gloves, long sleeves, and safety shoes
- Eye protection (goggles)

- Respiratory mask when fumes are present

9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Value (Typical)
Appearance	Black viscous liquid (hot) / solid (cold)
Softening Point	55–65°C
Elastic Recovery @ 15°C	>50%
Dynamic Viscosity @ 165°C	≤0.60 Pa·s
Density @ 25°C	~1.02 g/cm ³
Flash Point	≥230°C
Solubility	Insoluble in water

10. STABILITY AND REACTIVITY

- **Stability:** Stable under normal use.
- **Avoid:** Overheating (>200°C).
- **Decomposition Products:** CO, CO₂, H₂S, and hydrocarbons.

11. TOXICOLOGICAL INFORMATION

- **Acute Toxicity:** Low.
- **Skin Contact:** Prolonged exposure may cause irritation.
- **Inhalation:** Excessive exposure to fumes may cause headache, dizziness, or nausea.
- **Carcinogenicity:** Not classified as carcinogenic by IARC (Group 3).

12. ECOLOGICAL INFORMATION

- Not biodegradable, but inert in the environment.
- Avoid contamination of soil and water.

- Not bioaccumulative under normal use conditions.

13. DISPOSAL CONSIDERATIONS

- Dispose of in accordance with local regulations.
- Solidified material can be disposed of as non-hazardous waste.

14. TRANSPORT INFORMATION

UN Number **3257**

Proper Shipping Name Elevated Temperature Liquid, N.O.S. (Bitumen)

Class **9**

Packing Group **III**

Marine Pollutant **No**

15. REGULATORY INFORMATION

- Complies with EU Regulation (EC) No. 1907/2006 (REACH).
- Not classified as hazardous under OSHA or GHS.