



SAFETY DATA SHEET (SDS / MSDS)

BITUMEN (ASPHALT) EMULSION – ALL GRADES (CMS / CRS / CSS / C170 / C320 / C600 / SS1 / K140 / K160 / K170 / RUBBERIZED / CB30)

Supplier: ATDM (Advanced Technical Development Materials)

SDS Version: 1.0

Revision Date: 2026-02-21

1. Identification

Product name: Bitumen (Asphalt) Emulsion – Water Based

Grade(s) covered: Bitumen CMS, Bitumen CRS, Bitumen CSS, Bitumen C170, Bitumen C320, Bitumen C600, Bitumen SS1, Bitumen K140, Bitumen K160, Bitumen K170, Rubberized Bitumen Emulsion, Bitumen CB30

Recommended use: Road construction, tack coat, prime coat (where applicable), surface dressing, cold mix, patching, waterproofing, coating applications (depending on grade).

Restrictions on use: Not for consumption. Not for indoor use without ventilation. Do not heat above recommended process limits.

Supplier details:

ATDM – Advanced Technical Development Materials

(Use your company address / phone / email here)

Emergency contact:

(Insert local emergency phone number / 24-hour contact if available)

2. Hazard(s) Identification (GHS)

GHS Classification

Typically not classified as **hazardous** under GHS when supplied as a **water-based emulsion**.

However, it may cause **irritation** and **slip hazards**, and may contain minor amounts of **surfactants / stabilizers / acids or alkalis** depending on emulsion type.

Label Elements

Signal word: None (generally)

Pictograms: None (generally)



Hazards (practical / workplace)

- **Eye irritation** (splash risk)
- **Skin irritation** with prolonged contact
- **Respiratory irritation** if mist/aerosol is generated (spraying)
- **Slip hazard** if spilled
- If heated strongly or burned: can release **irritating fumes/smoke**

Precautionary Statements (recommended)

- Avoid contact with eyes and prolonged skin contact
- Avoid breathing mist/spray
- Wear gloves and eye/face protection
- Keep containers closed; prevent spills to drains

3. Composition / Information on Ingredients

Mixture: Bitumen emulsion (asphalt dispersed in water with emulsifiers and stabilizers)

Typical composition range (may vary by grade and customer specification):

- **Bitumen/asphalt: ~ 45–70%**
- **Water: ~ 30–55%**
- **Emulsifier / surfactant system: 0.1–2%**
- **Stabilizers / salts / pH adjusters: 0.1–1.5%**
- **Additives (polymer/rubber/anti-stripping/latex, optional): 0–5%**

Notes by emulsion type

- **Cationic emulsions (often CMS/CRS/CSS/CB30, many “C” & “K” grades):** may be **acidic** (commonly pH ~2–5) due to acid activation of emulsifier.
- **Anionic emulsions (often SS1):** may be **alkaline** (commonly pH ~10–12).

(Exact formulation is proprietary; provide more detail if your local regulation requires it.)



4. First-Aid Measures

Inhalation (mist/spray):

Move to fresh air. If symptoms (coughing, irritation) persist, get medical advice.

Skin contact:

Remove contaminated clothing. Wash with soap and water. If irritation persists, seek medical attention.

Eye contact:

Rinse cautiously with water for **15 minutes**. Remove contact lenses if easy. Get medical attention if irritation continues.

Ingestion:

Rinse mouth. **Do not** induce vomiting. Give water if conscious. Seek medical advice if large amount swallowed.

Most important symptoms:

Mild-to-moderate irritation to eyes/skin; irritation from aerosol exposure.

5. Fire-Fighting Measures

Suitable extinguishing media:

Foam, dry chemical, CO₂, water spray/fog.

Unsuitable media:

Direct high-pressure water jet (may spread burning material).

Specific hazards:

Although water-based, dried residue and bitumen can burn. Combustion may produce: CO, CO₂, irritating fumes, smoke.

Protective equipment for firefighters:

Self-contained breathing apparatus (SCBA) and full protective gear.



6. Accidental Release Measures

Personal precautions:

Wear gloves and eye protection. Avoid slips. Avoid aerosol generation.

Environmental precautions:

Prevent entry into drains, surface water, or soil. Contain spill.

Cleanup methods:

- Small spill: absorb with sand/earth/absorbent, collect in suitable container.
- Large spill: dike/contain; pump into salvage container if possible; absorb residues. Dispose according to local regulations.

7. Handling and Storage

Handling

- Avoid eye contact and prolonged skin contact
- Avoid breathing spray/mist (use ventilation during spraying)
- Do not mix with unknown chemicals (risk of emulsion breaking)
- Keep away from strong oxidizers

Storage

- Store in original, tightly closed containers
- Protect from **freezing** (emulsion breaks)
- Avoid prolonged exposure to direct sun/heat
- Typical storage temperature: **5°C to 40°C** (follow ATDM product guidance)
- Keep away from food and feed



8. Exposure Controls / Personal Protection

Occupational exposure limits:

No specific OEL for “bitumen emulsion” as a mixture in many jurisdictions.

If heated or burned, treat fumes as bitumen/asphalt fumes and apply local limits.

Engineering controls:

Local exhaust ventilation where mist/spray forms. Provide eyewash station.

PPE

- **Eye:** safety glasses; face shield if splash risk
- **Hands:** chemical-resistant gloves (nitrile/neoprene recommended)
- **Skin:** long sleeves; protective clothing as needed
- **Respiratory:** if spraying in poor ventilation, use appropriate particulate/mist respirator per local rules

9. Physical and Chemical Properties (Typical)

- Appearance: brown/black liquid emulsion
- Odor: mild asphalt odor
- pH: varies (see Appendix)
- Boiling point: ~100°C (water phase)
- Flash point: not applicable (water-based), but dried residue can burn
- Solubility: dispersible in water (emulsion); not truly soluble
- Viscosity: grade dependent
- Relative density: typically ~1.0–1.1 (grade dependent)
- VOC: typically low (depends on additives)

10. Stability and Reactivity

Reactivity: stable under normal conditions

Chemical stability: stable if stored correctly; may “break” if frozen or contaminated

Possibility of hazardous reactions: none expected under normal handling

Conditions to avoid: freezing, excessive heat, contamination, strong acids/alkalis (depending on type), strong oxidizers

Incompatible materials: strong oxidizers; for some grades, strong electrolytes may destabilize emulsion

Hazardous decomposition: burning produces smoke, CO/CO₂, irritating fumes



11. Toxicological Information (Typical)

Likely routes: skin/eye contact; inhalation of mist during spraying.

Acute toxicity: expected low for the mixture

Skin corrosion/irritation: may cause irritation with prolonged contact

Serious eye damage/irritation: splashes may irritate eyes

Respiratory sensitization: not expected

Carcinogenicity: mixture is water-based; however, **fumes from heated bitumen** can be hazardous—avoid overheating and inhalation of fumes.

(For regulatory submissions, rely on component data and local classification rules.)

12. Ecological Information

Ecotoxicity: not expected to be acutely toxic in normal use, but can harm aquatic environments by physical coating and oxygen transfer reduction if released.

Persistence/degradability: bitumen portion is persistent.

Bioaccumulation: bitumen components may have limited bioavailability; avoid release.

Mobility: may spread on water surfaces; can adhere to soil/sediment.

13. Disposal Considerations

- Dispose of product and contaminated absorbents according to local regulations.
- Do not discharge to drains or waterways.
- Empty containers may contain residue—handle as industrial waste unless cleaned and permitted for recycling.

14. Transport Information

UN number: Not regulated as dangerous goods in many cases (water-based asphalt emulsion).

Proper shipping name: Asphalt/bitumen emulsion (non-hazardous in most transport codes).

Hazard class: None (commonly)

Packing group: None

Marine pollutant: Typically no

Special precautions: Protect from freezing, keep upright and closed.

(Always confirm per local ADR/IMDG/IATA rules and the exact formulation.)



15. Regulatory Information

This product is supplied as an industrial mixture. Regulatory status depends on destination country and exact formulation.

Comply with local requirements for labeling, worker protection, and environmental discharge.

16. Other Information

Prepared for: ATDM product portfolio (Bitumen Emulsions)

Disclaimer: The information is provided in good faith based on typical water-based bitumen emulsion behavior. Actual properties may vary by grade and customer specification. Users are responsible for safe handling and compliance with local laws.