Basekim
Chemical Production Co.Ltd

MATERIAL SAFETY DATA SHEET (MSDS)

BITUMEN EMULSION K1-60

SECTION 1 – IDENTIFICATION OF THE PRODUCT

Product Name: Bitumen Emulsion K1-60
Product Type: Cationic Rapid-Setting Bitumen Emulsion
Chemical Family: Asphalt / Bitumen Emulsion
Appearance: Brown to black viscous liquid
Recommended Use: Road construction, tack coating, surface dressing, pavement maintenance and waterproofing applications.
Synonyms:
K1-60 Bitumen Emulsion, Asphalt Emulsion K1-60, Cationic Bitumen Emulsion K1-60
Typical Composition: Approximately 60% bitumen dispersed in water with cationic emulsifying agents.

SECTION 2 – HAZARD IDENTIFICATION

Classification
Under normal conditions of use, Bitumen Emulsion K1-60 is generally not considered a highly hazardous material. However, contact with the product may cause irritation.
Potential Hazards
Eye Contact:
May cause temporary irritation, redness or discomfort.
Skin Contact:
Prolonged or repeated exposure may cause skin irritation. Contact with heated material can cause thermal burns.
Inhalation:
Mists or vapours generated during spraying or heating may irritate the nose, throat and respiratory system.
Ingestion:
May cause gastrointestinal discomfort, nausea or irritation.
Important Safety Precaution
Avoid prolonged skin contact and avoid breathing spray mist or vapours.
Heated bitumen-containing materials may release irritating fumes and potentially small amounts of hydrogen sulfide (H_2S), particularly in enclosed storage systems.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS Number	Typical Concentration
Bitumen / Asphalt	8052-42-4	Approx. 55–65%
Water	7732-18-5	Approx. 35–45%
Cationic Emulsifier	Proprietary	<5%
Acid / pH Adjuster	Proprietary	<1%
Additives	Proprietary	Small quantities

The exact formulation may vary according to the manufacturer's production process and required specification.

SECTION 4 – FIRST AID MEASURES

Eye Contact

Immediately rinse the eyes carefully with clean water for at least 15 minutes.
Remove contact lenses if present and easy to remove.
Seek medical attention if irritation continues.

Skin Contact

Wash contaminated skin thoroughly with soap and water.
Remove contaminated clothing.
For contact with heated product, immediately cool the affected area with plenty of cool water.
Do not attempt to remove hardened bitumen from burned skin.
Seek medical attention for thermal burns.

Inhalation

Move the affected person to fresh air.
Keep the person comfortable and at rest.
Seek medical assistance if coughing, dizziness, breathing difficulty or respiratory irritation persists.

Ingestion

Rinse the mouth with water.
Do not induce vomiting.
Seek medical advice if a significant quantity has been swallowed or symptoms develop.

SECTION 5 – FIRE-FIGHTING MEASURES

Bitumen Emulsion K1-60 is a water-based material and is not normally considered readily flammable under normal storage and application conditions.
After evaporation of the water, however, the remaining bitumen is combustible.

Suitable Extinguishing Media

Use:

- Dry chemical powder
- Foam
- Carbon dioxide (CO_2)
- Water fog

Unsuitable Extinguishing Method

Do not direct a high-pressure water jet onto burning bitumen, as it may spread the burning material.

Hazardous Combustion Products

Combustion may generate:

- Carbon monoxide
- Carbon dioxide
- Smoke
- Hydrocarbon decomposition products

- Sulfur-containing gases in trace amounts

Protective Equipment

Firefighters should wear appropriate protective clothing and self-contained breathing apparatus when necessary.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions

Wear appropriate personal protective equipment.
Avoid direct skin and eye contact.
Prevent unnecessary personnel from entering the affected area.

Environmental Precautions

Prevent the material from entering:

- Drains
- Sewers
- Rivers
- Groundwater
- Surface water

Spill Cleanup

Contain the spill using sand, soil or another suitable inert absorbent material.
Allow the emulsion to break or absorb the liquid material where appropriate.
Collect contaminated material into suitable containers for disposal.
Wash the remaining contaminated area only when wastewater can be properly contained and treated.

SECTION 7 – HANDLING AND STORAGE

Handling

Avoid contact with skin and eyes.
Avoid inhaling mist generated during spraying.
Use appropriate protective equipment.
Maintain good workplace hygiene.
Do not eat, drink or smoke while handling the product.
Avoid contamination with incompatible substances.

Storage

Store in properly designed and closed tanks or containers.
Protect the material from:

- Freezing
- Excessive heat
- Direct sunlight
- Contamination
- Strong oxidizing agents

Avoid prolonged storage at unnecessarily high temperatures.
Bitumen emulsions should generally be protected from freezing because freezing may permanently damage the emulsion.

Do not mix cationic K1-60 emulsion directly with incompatible anionic emulsions unless compatibility has been confirmed.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls

Provide adequate ventilation, particularly where the product is:

- Sprayed
- Heated
- Applied in enclosed areas

Respiratory Protection

Respiratory protection is normally not necessary under properly ventilated conditions.
Where significant mist or fumes are generated, use suitable respiratory protection according to local occupational safety regulations.

Hand Protection

Wear chemical-resistant protective gloves.

Eye Protection

Wear safety glasses or chemical splash goggles.

Skin Protection

Wear suitable work clothing and protective footwear.
Use additional protective clothing where there is a risk of significant splashing.

Hygiene Measures

Wash hands thoroughly after handling.
Remove contaminated clothing before reuse.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid emulsion
Appearance: Dark brown to black
Odour: Characteristic, mild bituminous odour
Bitumen Content: Approximately 60%
Water Content: Approximately 40%
Particle Charge: Positive / Cationic
Solubility in Water: Dispersible while stable as an emulsion
Density: Typically approximately 1.0–1.1 g/cm³
Boiling Behaviour: Water component approximately 100°C
Flammability: Not readily flammable as supplied due to water content
Viscosity: Dependent on specification and temperature
pH: Typically acidic for cationic emulsions; exact value depends on formulation
Specific physical properties should be confirmed by the manufacturer's Certificate of Analysis (COA) or Technical Data Sheet.

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability

Stable under recommended handling and storage conditions.

Conditions to Avoid

Avoid:

- Freezing
- Excessive heating
- Prolonged exposure to very high temperatures
- Contamination with incompatible materials

Incompatible Materials

Avoid uncontrolled contact with:

- Strong oxidizing agents
- Strong alkaline substances
- Chemically incompatible emulsions
- Materials capable of destabilizing the emulsion

Hazardous Decomposition Products

At elevated temperatures or during combustion, decomposition products may include:

- Carbon monoxide
- Carbon dioxide
- Hydrocarbon fumes
- Sulfur-containing compounds

SECTION 11 – TOXICOLOGICAL INFORMATION

Acute Toxicity

The product is expected to have low acute toxicity under normal conditions of industrial use.

Skin Irritation

Repeated or prolonged exposure may cause irritation.

Eye Irritation

Direct contact may cause temporary irritation.

Inhalation

Spray mist or fumes generated during heating may irritate the respiratory tract.

Ingestion

Not intended for ingestion.

Swallowing may result in gastrointestinal discomfort.

Chronic Effects

Good industrial hygiene practices should be followed to minimize repeated exposure to bitumen mist, fumes or aerosols.

SECTION 12 – ECOLOGICAL INFORMATION

Bitumen has low water solubility and tends to remain associated with soil and sediment.

The product should not be intentionally released into the environment.

Fresh emulsion may affect aquatic environments due to its dispersed bitumen, emulsifying agents and formulation additives.

Prevent large quantities from entering waterways, drains and soil.

SECTION 13 – DISPOSAL CONSIDERATIONS

Dispose of unused product, contaminated absorbents and containers according to applicable local, national and international environmental regulations.
Where permitted, hardened or broken bitumen residue may be handled as industrial bituminous waste.
Do not discharge liquid emulsion directly into drains, sewers or waterways.
Empty containers should be drained and handled by an approved waste management or recycling contractor.

SECTION 14 – TRANSPORT INFORMATION

General Transport Classification

Bitumen Emulsion K1-60 is generally transported as a non-dangerous water-based bitumen emulsion when its formulation does not contain components that trigger dangerous-goods classification.
UN Number: Generally not applicable
ADR/RID: Generally not regulated as dangerous goods
IMDG: Generally not regulated as dangerous goods
IATA: Generally not regulated as dangerous goods
Marine Pollutant: Generally No
Transport classification must be confirmed against the exact formulation, shipping temperature and regulations applicable to the country of shipment.
Keep containers secured and protected from freezing, excessive heat and physical damage during transportation.

SECTION 15 – REGULATORY INFORMATION

The product should be manufactured, handled, stored and transported according to applicable occupational health, environmental and chemical regulations.
Applicable regulations may include:

- GHS chemical communication requirements
- Local occupational health and safety legislation
- Environmental protection requirements
- ADR/RID road and rail transportation regulations
- IMDG maritime transport requirements
- IATA air transport requirements

The final regulatory classification must be based on the manufacturer's exact formulation.

SECTION 16 – OTHER INFORMATION

Product

Bitumen Emulsion K1-60

K1-60 is a cationic bitumen emulsion typically containing approximately 60% bituminous binder dispersed in water. It is commonly designed for rapid-setting road construction applications such as tack coating and surface treatment.

Recommended Applications

- Tack coat

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- Surface dressing
- Road maintenance
- Asphalt layer bonding
- Pavement rehabilitation
- Surface treatment
- Selected waterproofing applications

Safety Advice

Use appropriate gloves, eye protection and protective clothing when handling the product.
Ensure good ventilation when spraying or heating.
Avoid direct discharge into the environment.

Disclaimer

The information contained in this Material Safety Data Sheet is provided as general guidance for the safe handling, storage, transportation and use of Bitumen Emulsion K1-60.
Actual composition and physical properties may vary between manufacturers and production batches. The manufacturer's current Certificate of Analysis, Technical Data Sheet and product-specific Safety Data Sheet should therefore be consulted before commercial use or regulatory submission.