



SDS – DAS Bio

Revision No.	Rev. 03
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Safety Data Sheet – DAS Bio

Details of the supplier of the safety data sheet:

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Trade Name: DAS Bio
Chemical name: Bio-based bituminous emulsion
UNSPCS for Bitumen: 30121504
UNSPCS for Emulsions: 12161804
Hazchem-code: Non-hazardous (Emulsion of bitumen and water)
Hazardous Composition: Non-hazardous

SECTION 2: COMPOSITION / INFORMATION ON INGREDIENTS

Chemical nature: Bio-based bituminous emulsion polymer binders
CAS Number: 8061 51 6 (Lignin)
CAS Number: 8052 42 4 (Bitumen emulsion)

SECTION 3: HAZARDS IDENTIFICATION

HMIS / NFPA: Health: 1 Fire: 0 Reactivity: 0
Main Hazard: Health (low)
Flammability: Non-flammable
Chemical Hazard: None
Combustion products: Carbon dioxide

3.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK SOUTH AFRICA CRITERIA

In compliance with EC regulation No. 1272/2008 and its amendments.

This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

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This mixture does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

In compliance with directives 67/548/EEC, 1999/45/EC for packaging, labelling and their amendments.

This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

This mixture does not present a health hazard except for possible occupational exposure thresholds (see paragraphs 3 and 8).

This mixture does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

3.2 Label elements

In compliance with EC regulation No. 1272/2008 and its amendments.

3.3 Other hazards

The mixture does not contain any substances classified as 'Substances of Very High Concern' (SVHC) by the European Chemicals Agency (ECHA) under article 57 of REACH format:

<http://echa.europa.eu/fr/candidate-list-table>

The mixture satisfies neither the PBT nor the vPvB criteria for mixtures in accordance with annexure XIII of the REACH regulations EC 1907/2006.

Specific hazard:

- Splashing, irritant dermal action

SECTION 4: COMPOSITION / INFORMATION ON INGREDIENTS

4.1 Composition

INGREDIENT	CAS NUMBER	EC NUMBER	CONTENT
Bitumen	8052-42-4	232-490-9	≤ 40%
Sodium lignosulphonate(s)	8061 51 6	-	<20%
Nonhazardous ingredients (water)	Not Available	Not Available	Balance
Total			100%

Information on ingredients:

[1] Substance for which maximum workplace exposure limits are available.

Other data:

Chemical nature

Preparation:

Anionic aqueous emulsion of bio based bituminous binder

The continuous phase is made of anionic or non-ionic resins. The phase separation obtained during use or occurring unintentionally is called breaking.

SECTION 5: FIRST-AID MEASURES

As a rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.

5.1 Description of first aid measures

In the event of an allergic reaction, seek medical attention.

In the event of splashes or contact with eyes:

Wash immediately with copious amounts of water if sensitivity persist beyond 15 minutes consult a specialist.

In the event of splashes or contact with skin:

In the event of skin contact, wash off product with water. In the event of an allergic reaction, seek medical attention.

In the event of ingestion:

Seek medical attention, showing the label.
Dilute ingested product with water or milk. Do not induce vomiting to avoid any heartburn.
Transport to a hospital immediately for emergency care.

5.2 Most important symptoms and effects, both acute and delayed

If swallowed: symptoms may include nausea, vomiting, stomach cramps and diarrhoea.
If on skin: repeated or prolonged exposure can irritate or burn the skin.
If in eyes: may cause moderate to severe irritation. Symptoms include sore, red eyes, and tearing.

5.3 Indication of any immediate medical attention and special treatment needed

No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

SECTION 6: FIRE-FIGHTING MEASURES

The product is non-flammable. Water, foam, and carbon Dioxide can be used as distinguishing media. Wear respirator (Pressure-demand, self-contained breathing apparatus) and full protective gear. Decomposition products Sulphur dioxide and carbon Monoxide.

6.1 Extinguishing media

Suitable methods of extinction

In the event of a fire, use: Water, foam, or carbon dioxide for fire extinguishing.

6.2 Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health. Do not breathe in smoke.

In the event of a fire, the following may be formed:

- Carbon monoxide (CO)
- Sulphur dioxide (SO₂)

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6.3 Advice for firefighters

Extinguishing Media: Water, Foam or Carbon Dioxide.
 Protective Clothing: Standard fire-fighting protective clothing is required.
 Hazardous Decomposition Products: Sulphur Dioxides and Carbon Monoxide

SECTION 7: ACCIDENTAL RELEASE MEASURES

7.1 Personal precautions, protective equipment, and emergency procedures

Consult the safety measures listed under headings 8 and 9.

For first aid workers

First aid workers will be equipped with suitable personal protective equipment (See section 8).

7.2 Environmental precautions

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.
 Prevent any material from entering drains or waterways.

7.3 Methods and material for containment and cleaning up

Clean preferably with a detergent, do not use solvents.

- Recovery: contain and collect the spilled product, sand the surfaces concerned if necessary.
- Elimination: recover all wastes and dispose in compliance with current regulations.

SECTION 8: HANDLING AND STORAGE

Handling: Requirements relating to storage premises apply to all facilities where the mixture is handled.

8.1 Precautions for safe handling

Always wash hands after handling.
 Remove and wash contaminated clothing before re-using. Engineering / preventive measures
 Worker's exposure:

- If the product is sprayed with a hose, it is recommended to wear protective clothes.
- Wear the protective equipment referenced in section 9 before handling the product.

Fire prevention:

Prevent access by unauthorized personnel.

- Never use solvent to help the process in case of blockage.
- Never weld or cut if tanks or pipes are still containing gases.

Recommended equipment and procedures:

For personal protection, see section 9.
 Observe precautions stated on label and industrial safety regulations.

Precautions:

- Do not eat, drink and smoke when the product is moved or used.

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During product transfer:

- Always transfer the product by drawing up. Never reverse in a flexible tubing to avoid any bursting.
- Never decant with a flexible tubing through a manhole or unsuitable mouth.
- Do not use free-fall or spray methods when filling containers to prevent foaming.
- Do not fill the emulsion into any containers holding a product whose temperature exceeds 100°C.

Advice:

- Use only containers, pipes, and joints suitable for handling bio bitumen emulsion and hydrocarbons.

Prohibited equipment and procedures:

- Smoking, eating, or drinking in areas where the product is used is not advised.

8.2 Conditions for safe storage, including any incompatibilities

Product storage tanks must comply with applicable Dust-A-Side standards. If stored for 5 and more days without disturbance / use, circulate the content by means of a pump preferably centrifugal pump before use.

Storage:

Tanks and facilities must comply with applicable regulations. Avoid the use of high shear pumps as they can destabilise the emulsion. Avoid storing at temperatures below 5°C or above 90°C. If the storage time exceeds 5 days, moderately mix the emulsion.

Packaging:

Always keep in packaging made of an identical material to the original. Recommended types of packaging and suitable packaging materials:

- Recommended: Steel or plastic
- For lab, use plastic or glass containers

- Unsuitable packaging materials:
- Avoid copper or aluminium alloys.

8.3 Specific end use(s)

Dust suppression on soil

SECTION 9: EXPOSURE CONTROLS / PERSONAL PROTECTION

9.1 Control parameters

Occupational exposure limits:

CAS	VME-ppm:	VME-mg/m3:	VLE-ppm:	VLE-mg/m3:	Notes:	TMP No:
8052-42-4	-	0.1	-	-	-	65.66

9.2 Exposure controls

Suitable technical inspections

Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE):



Use personal protective equipment that is clean and has been properly maintained. Store personal protective equipment in a clean place, away from the work area.

Never eat, drink, or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

Eye / face protection

Avoid contact with eyes.

Use eye protectors designed to protect against liquid splashes

Before handling, wear safety goggles in accordance with standard EN166.

Hand protection

Wear suitable protective gloves in the event of prolonged or repeated skin contact.

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN374.

Gloves must be selected according to the application and duration of use at the workstation.

Protective gloves need to be selected according to their suitability for the workstation in question: other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.

Body protection

Suitable type of protective clothing: Suitable type of protective boots:

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been affected must be washed.

Respiratory protection

Not mandatory

Thermal risks

Exposure controls linked to environmental protection



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SECTION 10: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Viscous brown liquid
Odour:	Slight odour
Total binder activity:	39.5 ± 2% Binder Content
Density (20°C):	1.08 g/ml ±0.05
Viscosity (20°C):	<100 mPas
pH (Solution):	10.70 ± 0.05
Water Solubility:	Miscible in water
Solubility in organic substance:	Low
Boiling Point:	100°C (Water)
Flash Point (OC):	Not applicable
Explosive Properties:	None
Autoignition Temperature:	Not Flammable as such wont auto ignite

SECTION 11: STABILITY AND REACTIVITY**11.1 Reactivity**

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal. Prevent any material from entering drains or waterways.

11.2 Chemical stability

This mixture is stable under the recommended handling and storage conditions in section 7.

11.3 Possibility of hazardous reactions

None.

11.4 Conditions to avoid

Avoid: Frost

Emulsion stability is limited. If emulsion has been stored for more than a few days, it should be circulated before use.

11.5 Incompatible materials

Keep away from:
Cationic Emulsions

11.6 Hazardous decomposition products

The thermal decomposition may release / form:

- Carbon monoxide (CO)
- Carbon dioxide (CO₂)

SECTION 12: TOXICOLOGICAL INFORMATION

12.1 Information on toxicological effects

Environmental data: Testing was performed to determine the toxicity of DAS Bio on the neat product.

Summary of the Results of the neat product handling.

No known significant effects or critical hazards. See toxicological information (Section 12).

Based on actual testing or on data for similar material(s).

Acute Toxicity:	Acutely mild Single dose oral toxicity considered to be low. The oral LD50 for rats is >5000 mg/kg. No hazards anticipated from swallowing small amounts incidental to normal handling operations.
Acute dermal LD50:	The LD50 for skin absorption in rats is >5000 mg/kg.
Acute inhalation LC50:	No adverse effects are anticipated from mild inhalation.
Skin & Eye Contact:	Irritating to sensitive to skin. Signs / symptoms may include localized redness, swelling, and itching.
Acute skin irritation:	May cause slight transient (temporary) eye irritation. Corneal injury is unlikely.
Acute eye irritation:	May cause slight transient (temporary) eye irritation. Corneal injury is unlikely.
Dermal sensitization:	Not Available.

12.2 Mixture

Acute toxicity:	Acute mild toxicity
Skin corrosion / skin irritation:	Irritating to skin. Signs / symptoms may include localized redness, swelling, and itching.
Serious damage to eyes / eye irritation:	Irritating to eyes. Signs / symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
Respiratory or skin sensitization:	Does not cause respiratory or skin sensitivity Contains at least one sensitizing substance. May cause an allergic reaction.
Germ cell mutagenicity:	Does not promote cell mutation under any condition
Carcinogenicity:	Non carcinogenic as its used as a cold mix
Reproductive toxicant:	None
Specific target organ systemic toxicity - single exposure:	None
Specific target organ systemic toxicity - repeated exposure:	None

Aspiration hazard:

Symptoms related to the physical, chemical, and toxicological characteristics

Delayed and immediate effects as well as chronic effects from short and long-term exposure: No chronic or adverse effects

SECTION 132: ECOLOGICAL INFORMATION

Product is classified as nontoxic to aquatic organisms and is classified as inherently biodegradable. However, large spill into natural water systems is expected to cause acute short-term toxicity to aquatic life due to depletion of dissolved oxygen levels in the water. Once enough natural dilution has occurred no long-term effects are expected. The main organic component will tend to bind soil particles together and will naturally decompose over time (Lignosulphonate is used commercially as soil binders for dirt roads). The residual chemical content will not cause toxic contamination of ground water.

13.1 Toxicity

13.1.1. Substances

The product will not have a long-term effect on the ecology

13.1.2 Mixtures

Refer to section 11 above for summary of aquatic toxicity data available for the mixture.

13.2 Persistence and degradability

The emulsion is a product used for dust suppression and the binder, after breaking, has a long-life span.

13.3 Bio accumulative potential

Bioaccumulation of bitumen is very unlikely because of insolubility and high molecular weight.

13.4 Mobility in soil

The product has no soil mobility.

Water: as the emulsion is miscible and mobile in water, the binder could be conveyed over long distances.

13.5 Other adverse effects

No adverse effects.

SECTION 14: DISPOSAL CONSIDERATIONS

Disposal Method: Proper waste management of the mixture and / or its container must be Dispose in accordance with local / national regulations governing the disposal of waste materials. Residues of packing may be incinerated unless local disposal regulations state otherwise.

The concentrated product, absorbed by suitable absorbents as described in Section 7, Accidental Release Measures, can be removed to a dumping site. Dispose according to local regulations.

14.1 Waste treatment methods

Do not pour into drains or waterways.

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Waste:

Waste management is carried out without endangering human health, without harming the environment and, without risk to water, air, soil, plants, or animals.

Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company. Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

Contaminated packaging:

Empty container completely. Keep label(s) on container. Give to a certified disposal contractor.

SECTION 15: REGULATORY INFORMATION

Non-hazardous and no transport regulations required for this product.

SECTION 16: EXPOSURE LIMIT

Information: Not classified as dangerous for supply or conveyance.

Non- hazardous.

Poison Schedule: Not Applicable.

No exposure limits have been specifically investigated for this product. The primary risks would be associated with skin exposure, inhalation of mists and ingestion. Acute toxicity is not expected on skin exposure. Provided the product is rinsed off the skin promptly after exposure no long-term effects are expected.

SECTION 17: OTHER INFORMATION

This Safety Data Sheet meets the South African requirements. Refer to the Product Data Sheet and product risk assessment.