

SUMMIT BRIDGE LIMITED

Advanced Biological Water Treatment Solutions

COSHH RISK ASSESSMENT

WITH APPLICATION, DOSAGE & CONCENTRATION GUIDE

SUMMIT BIO CORE



Biological effluent treatment preparation containing non-pathogenic environmental bacterial isolates

Document Reference: SBG-COSHH-001

Date Issued: September 2026 | Revision 3.0

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Terminology Notice: All biological preparations described in this document are biological effluent treatment preparations containing non-pathogenic environmental bacterial isolates. Product descriptions comply with the Summit Bridge Terminology Guide (April 2026).

Precedence: This assessment is aligned to the Summit Bridge Safety Data Sheet for Summit Bio Core (EN, Version 1.0). Where any inconsistency arises between this assessment and the SDS, the SDS governs.

Revision 3.0 (September 2026): incorporates the manufacturer's written technical positions on strain identity and safety confirmation, operating range, activation time, dissolved-oxygen tolerance and start-up dosing regime. Summit Bridge recommended operating windows are retained alongside the manufacturer's stated ranges.

1. DOCUMENT INFORMATION

Document Reference	SBG-COSHH-001 Revision 3.0
Product Name (Summit Bridge)	Summit Bio Core
Description	Biological effluent treatment preparation – liquid preparation. Bio-augmentation additive for effluent treatment systems.
Assessment Prepared By	James Mulcair CertIOSH MIIRSM NVQ Level 6 Occupational Health & Safety
Date of Assessment	September 2026
Review Date	September 2027
Applicable Regulation	COSHH Regulations 2002 (as amended); EU REACH Regulation (EC) No 1907/2006; CLP Regulation (EC) No 1272/2008
Source Documents	Summit Bridge Safety Data Sheet — Summit Bio Core (EN), Version 1.0; manufacturer's written responses to the Summit Bridge technical questionnaire (August 2026)

2. PRODUCT IDENTIFICATION & COMPOSITION

Component	CAS No.	EC No.	% m/m	CLP Classification (substance level)	REACH Reg. No.
Acetic Acid	64-19-7	200-580-7	<9.5	Not classified at this concentration. Skin/eye irritation applies only at 10–25%; corrosive classification only above 25%.	01-2119475328-30
Potassium Sorbate	24634-61-5	246-376-1	0.1–9.5	Eye Irrit. 2 H319 (substance level). Not applicable to this mixture — below cut-off.	—
Sodium Hydroxide	1310-73-2	215-185-5	0.2–1.0	Not applicable — neutralised to sodium acetate; free NaOH not present. Substance level: Skin Corr. 1A H314.	—
Dye Idacol Blue	3567-69-9	222-657-4	0.0001–0.0010	Not classified	N/A — de minimis
Bacterial consortium: B006 Bacillus cereus; D005 Bacillus cereus; D014 Bacillus subtilis — non-pathogenic environmental isolates, non-GMO, food-grade activation nutrients	N/A	N/A	Balance	Not classified. Biosafety level 1 (BSL-1). All strains Bacillus spp., identified by 16S sequence homology, GRAS, confirmed negative for anthrax toxin and Bacillus cereus enterotoxin.	N/A

Strain identity and safety confirmation. All strains in the consortium are Bacillus species, identified by 16S rRNA sequence homology and supporting techniques, and have Generally Recognised As Safe (GRAS) status. Each strain is confirmed negative for anthrax toxin and for the Bacillus cereus enterotoxin. Strains are produced individually under controlled monoseptic fermentation and supplied in spore form for shelf life, formulation stability and robustness. Strains are naturally occurring, non-genetically-modified environmental isolates; the product contains no animal-derived ingredients and no non-biodegradable ingredients.

Mixture-level note: The mixture is a buffered aqueous solution at pH 4.80 ± 0.10 (an acetic acid / sodium acetate buffer): the acidity is mild and skin-compatible and the sodium hydroxide is neutralised. All components are present below their generic concentration limits, so the mixture is NOT classified as hazardous. Bacterial strains are biosafety level 1, non-pathogenic environmental isolates.

3. PHYSICAL & CHEMICAL PROPERTIES

Property	Value	Property	Value
Appearance	Bluish liquid	Odour	Naturally acidic (acetic acid — vinegar-like)
Odour threshold	~1 ppm (acetic acid, detectable)	pH	4.80 ± 0.10
Melting / freezing point	Not determined	Boiling point	~100 °C (approx., aqueous mixture)
Flash point	Not applicable (aqueous solution)	Flammability	Not flammable
Explosive properties	None (liquid)	Oxidising properties	None
Relative density	1.000 kg/l ± 0.005	Solubility in water	Miscible in all proportions
Viscosity	13.20 cP	Evaporation rate	Not determined

4. HAZARD IDENTIFICATION (CLP / GHS)

Hazard Category	Assessment
Flammability	Not flammable. Aqueous solution; not classified as a flammable liquid.
Biological hazard	No known effect. Organisms are non-pathogenic environmental isolates (non-GMO), biosafety level 1. All strains <i>Bacillus</i> spp., identified by 16S sequence homology, GRAS, confirmed negative for anthrax toxin and <i>Bacillus cereus</i> enterotoxin. Supplied in spore form.
Eye irritation	Not classified. Potassium sorbate is present below the mixture threshold. Transient irritation possible on direct contact with the undiluted concentrate; rinse with water.
Skin irritation	Not classified. Buffered mixture at pH 4.80 (acetate buffer); mild acidity and neutralised sodium hydroxide — skin-irritation criteria not met.
Inhalation	Not classified. No respiratory irritation at use concentrations; acetic acid vapour is minimal at ambient temperature. Vinegar-like odour may be noticeable.
Sensitisation	Not classified. No harmonised skin-sensitisation classification for potassium sorbate; weight of evidence negative.
Carcinogenicity / Mutagenicity	Not classified. No component classified as carcinogen under CLP/IARC at these concentrations.
Aquatic toxicity	Not classified. No aquatic toxicity at use-level concentrations. All components readily biodegradable.
CLP Classification	NOT CLASSIFIED as hazardous under Regulation (EC) No 1272/2008. No signal word, no pictogram, no hazard statements. Assessed by the calculation (additivity) method.

5. EXPOSURE CONTROLS & PERSONAL PROTECTIVE EQUIPMENT

Control / PPE Category	Requirement
Respiratory protection	Not required under normal use conditions.
Hand protection	Gloves recommended as good practice for prolonged handling (nitrile or latex; EN ISO 374). Not required for brief incidental contact.
Eye / face protection	Safety goggles (EN 166) required when decanting, dispensing or pumping the undiluted concentrate. Applied as a precautionary control — the mixture is not classified.
Skin / body protection	Normal work clothing. Wash contaminated clothing before reuse.
Engineering controls	General ventilation is sufficient for normal use. Provide an eye-wash station in work areas.
Environmental controls	Prevent release of large volumes of undiluted product to surface water or drains without dilution.

Occupational exposure limits (component level — limits are for the pure substances and are not expected to be approached at this dilution):

Substance	EU OEL — TWA (8h)	EU OEL — STEL (15 min)	Basis
Acetic Acid	10 ppm / 25 mg/m ³	20 ppm / 50 mg/m ³	Directive 2017/164/EU indicative OEL
Sodium Hydroxide (as NaOH)	Not established	1 mg/m ³ (STEL)	Directive 2017/164/EU indicative OEL
Potassium Sorbate	Not established	Not established	No EU indicative OEL; apply ALARA principle
Dye Idacol Blue	Not established	Not established	Present at de minimis concentration

6. FIRST AID MEASURES

Route of Exposure	First Aid Action	Symptoms
Inhalation (vapour)	Remove to fresh air. Seek medical attention if symptoms persist.	No specific inhalation hazard under normal use; vinegar-like odour may be noticeable
Skin contact	Wash with soap and water. Seek medical advice if irritation develops.	No classified skin hazard; mild transient irritation possible on prolonged contact
Eye contact	Rinse cautiously with clean water for several minutes, holding eyelids open. Remove contact lenses if present and easy to do; continue rinsing. Seek medical attention if irritation persists.	Redness or lacrimation possible on direct contact with the concentrate
Ingestion	Rinse mouth with water. Give water to drink if conscious. Seek medical advice if a large quantity is swallowed.	Mild gastric discomfort possible

Most important symptoms/effects: No classified health hazard. Transient eye irritation possible on direct contact; rinse with water.

7. RISK ASSESSMENT MATRIX

Activity / Task	Hazard	Who at Risk	Inherent Risk (L×S)	Residual Risk	RAG
Dispensing / dosing concentrate into treatment system	Eye contact with undiluted concentrate	Operator	2×2=4	1×1=1	LOW
Diluting concentrate 10:1 prior to application	Splash to eyes or skin	Operator	2×2=4	1×1=1	LOW
Accidental spill / release	Skin/eye contact; slip hazard	All personnel	2×3=6	1×2=2	LOW
Storage in original sealed container	Container failure; leakage	Storeman	1×2=2	1×1=1	LOW
Disposal of used containers	Residual liquid contact	Waste handler	1×1=1	1×1=1	LOW

L = Likelihood (1–5) | S = Severity (1–5) | Risk = L × S | LOW ≤8 | MEDIUM 9–15 | HIGH ≥16

8. CONTROL MEASURES & SAFE HANDLING

- Use in normally ventilated areas.
- Wear safety goggles (EN 166) when decanting, dispensing or pumping the undiluted concentrate.
- Avoid contact with eyes.
- Store in original sealed containers in cool, dry, dark conditions (10–25°C), away from direct sunlight and heat sources.
- Do not eat, drink or smoke during handling.
- Wash hands after handling.
- Do not store near food, drink or animal feed.
- Inspect containers regularly for integrity. Do not use damaged containers.
- Do not mix with chlorine-based disinfectants, antibiotics, or strong oxidising agents prior to application.
- Keep away from children and untrained personnel.

9. STORAGE, SPILLAGE & DISPOSAL

Topic	Guidance
Storage conditions	Store in cool, dry, dark conditions away from direct sunlight and heat sources. Keep container tightly closed when not in use. Recommended storage temperature: 10 °C – 25 °C. Shelf life: 24 months from manufacture date under recommended conditions.
Incompatible materials	Store away from strong oxidising agents; strong acids or alkalis. Do not store alongside chlorine-based disinfectants or heavy-metal-containing compounds — these destroy the bacterial culture.
Spillage — small	Absorb with inert material (sand, earth, vermiculite) or collect with mop/cloth. Transfer to a suitable labelled container. Wash the area with water.
Spillage — large	Contain with inert absorbent material. Collect and transfer to a suitable labelled container. Prevent entry into drains or watercourses in large quantities. All components are readily biodegradable.
Disposal — diluted / used product	May be disposed of to sewer in accordance with local trade effluent consent conditions — confirm with local authority.
Disposal — undiluted product	Collect and dispose of as liquid waste via a licensed waste contractor. Do not dispose of large quantities to surface water or soil.
EWC Code	07 07 99 (wastes from manufacture of other fine chemicals) — confirm with waste contractor.
Disposal — packaging	Rinse empty containers thoroughly with water before disposal. Recycle clean plastic packaging per local schemes. Contaminated packaging: dispose as liquid waste packaging.

10. TRANSPORT INFORMATION

Parameter	ADR/RID (Road/Rail)	IMDG (Sea)	IATA (Air)
UN Number	Not applicable	Not applicable	Not applicable
UN Proper Shipping Name	Not regulated as dangerous goods	Not regulated as dangerous goods	Not regulated as dangerous goods
Transport Hazard Class	None	None	None
Packing Group	None	None	None
Environmental Hazards	Not a marine pollutant	Not a marine pollutant	N/A
Special Precautions	Keep upright. Store away from heat sources.	Keep upright.	Standard handling precautions.

Acetic acid content is below 10%, so the mixture is not regulated as dangerous goods for transport. Bulk transport (MARPOL Annex II / IBC Code): not applicable.

11. REGULATORY FRAMEWORK

Regulation / Standard	Status
COSHH Regulations 2002 (as amended)	Assessment conducted in compliance.
REACH — Regulation (EC) No 1907/2006	All substances present are registered or exempt. No SVHC above threshold concentrations.
CLP — Regulation (EC) No 1272/2008	Mixture assessed by the calculation (additivity) method. NOT classified as hazardous — no H-statements, no pictogram, no signal word.

Regulation / Standard	Status
Biocidal Products Regulation (EU) 528/2012	Product is a biological wastewater treatment preparation and makes no biocidal claims. Not classified as a biocidal product under BPR.
REACH Annex XIV / XVII	No SVHC above threshold; no restricted substances identified at applicable concentrations.
Seveso III Directive (2012/18/EU)	Not subject to Seveso III requirements.
Directive 2000/54/EC — Biological Agents	No biological hazard identified; organisms are non-pathogenic environmental isolates (BSL-1), confirmed negative for anthrax toxin and B. cereus enterotoxin.
Biodegradability (OECD 301)	All components readily biodegradable or naturally occurring.
National Legislation	EU harmonised framework applies; Cyprus national implementing legislation as the place of supply.

12. ASSESSMENT SIGN-OFF

Field	Detail	Field	Detail
Assessed By	James Mulcair	Role	Health, Safety & Environmental Director
Qualifications	NVQ Level 6 Occupational Health & Safety, CertIOSH MIIRSM	Organisation	Summit Bridge Limited
Date of Assessment	September 2026	Review Date	September 2027
Authorised By	James Mulcair	Signature	Pending signature (Revision 3.0)

13. APPLICATION GUIDE — DOSAGE, CONCENTRATION & FREQUENCY

Important — Indicative Rates: The dosage figures below are indicative guidance derived from the manufacturer's written guidance, standard biological treatment practice and comparable product benchmarks. They have not yet been validated against site-specific conditions for each client engagement. Actual rates must be reviewed and confirmed by Summit Bridge Ltd prior to client recommendation. Adjust all rates based on effluent volume, organic load (BOD₅/COD), temperature, pH, and existing microbial community status.

13.1 Recommended Dose Rate

Recommended minimum dose	1 litre of concentrate per 1,000,000 litres (1 megalitre) of wastewater per day. This is the maintenance rate for an established system and the floor below which dosing is not reduced.
Start-up regime	Manufacturer's written guidance: typically 5 litres per megalitre per day — five times the maintenance rate — tuned down on measured performance to the recommended minimum. The start-up period and rate for a specific asset are set by Summit Bridge from the findings report.
Pre-application dilution	Dilute 10 parts water to 1 part liquid before application
Method of application	Continuous drip-dosing or metered injection directly into a large body of wastewater, where the concentrate is immediately and massively diluted on contact
Dosing schedule	Site-specific schedules available from Summit Bridge Limited on request

13.2 Concentration Guide & Operating Conditions

Product form	Liquid preparation, blue-tinted. This is a concentrate, not a ready-to-use product.
Application concentration	Diluted 10:1 (water : product) prior to dosing.
Viable bacterial count (indicative)	Approximately 1×10^9 CFU/ml at point of manufacture.
Activation time	Process-dependent; typically germination within 1 hour of dosing and active growth within 4 hours (manufacturer's written position).
Temperature — manufacturer stated operating range	10–80 °C; optimum 28 °C.
Temperature — Summit Bridge recommended operating window	Up to 45 °C. Application above this window is confirmed with Summit Bridge per asset.
pH — manufacturer stated operating range	3.5–10; optimum 6.8.
pH — Summit Bridge recommended operating window	5.5–8.5.
Dissolved oxygen	Facultative through to fully anaerobic. Spores survive anaerobic conditions but do not grow; activity requires oxygen availability at the dosing point (manufacturer's written position).
Shelf life at recommended storage	24 months from date of manufacture. Product efficacy declines beyond this point.

Manufacturer stated operating ranges are the ranges within which the manufacturer reports the consortium remains viable and active across its applications. Summit Bridge recommended operating windows are the conditions under which Summit Bridge specifies and supports a dosing regime without site-specific confirmation. Applications outside the recommended window are confirmed per asset.

13.3 Step-by-Step Application Method

- Confirm the daily wastewater volume (in megalitres) and calculate the required dose: the start-up regime set by Summit Bridge, then the maintenance rate of 1 litre per megalitre per day.
- Shake or gently mix the product container before use to ensure uniform distribution of the bacterial culture.
- Dilute the measured concentrate 10 parts water to 1 part product before application.
- Apply by continuous drip-dosing or metered injection directly into the main body of wastewater.
- For continuous systems: connect to a calibrated dosing pump set to the daily rate. Check pump calibration monthly.
- Record the date, volume applied and system conditions (temperature, pH, DO if available) in the site dosing log.
- Monitor effluent quality (BOD₅, COD, TSS, odour) weekly during start-up and monthly thereafter.
- Consult Summit Bridge Limited if performance targets are not met within 4 weeks.

13.4 Operating Notes & Incompatibilities

- Free chlorine at the dosing point should be below 0.5 mg/L; where residuals are higher, position dosing upstream of disinfection or neutralise before application.
- Allow 24 hours between antibiotic or chemical biocide treatment of the system and dosing.
- Do not mix product with strong acids (pH <3) or alkalis (pH >11) prior to application.
- Heavy-metal-bearing effluents (copper, silver, mercury) above 5 mg/L inhibit bacterial activity; raise with Summit Bridge before dosing.
- Not for application to potable water systems or any system designed for human consumption.
- Systems operating above the Summit Bridge recommended window (45 °C): the manufacturer's stated range extends to 80 °C; confirm the application with Summit Bridge before dosing.
- Use within shelf life (24 months from manufacture); viable count declines beyond it.

Classification Notice: This document is confidential and prepared exclusively for internal use and distribution by Summit Bridge Limited. All product descriptions comply with the Summit Bridge Terminology Guide (April 2026). This assessment is aligned to the Summit Bridge Safety Data Sheet for Summit Bio Core (EN, Version 1.0), which governs in the event of any inconsistency. Summit Bridge Limited accepts no liability for misuse of this document or the products described herein.