SAFETY DATA SHEET

SolarSHIELD

One-component water-based heat-reflective flexible acrylic waterproofing coating containing hollow microspheres, white

Product code	3.WP.SOLAR
Version	**2026.10**
Date of issue	01/10/2026
Revision date	Supersedes version 2026.07

Prepared in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) and the Vietnam Law on Chemicals No. 69/2025/QH15. This sheet contains the 16 mandatory sections in order.

BUMA-WP · WATERPROOFING

1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE SUPPLIER

1.1 Product identifier

Trade name	SolarSHIELD
Product code	3.WP.SOLAR
Product type	One-component water-based heat-reflective flexible acrylic waterproofing coating containing hollow microspheres, white
Packaging	03kg/pail and 15kg/pail

1.2 Relevant identified uses and uses advised against

Identified use: One-component heat-reflective flexible acrylic waterproofing coating — waterproofing and heat protection for profiled sheet roofs, metal roofs, concrete roofs and external walls; it reduces solar heat gain and protects the surface against rainwater, UV and weathering. Suitable for large areas, applied by spray, roller or brush.

Uses advised against: any application outside the manufacturer's instructions (see Section 7 and the product Technical Data Sheet).

1.3 Details of the supplier / manufacturer

BUMATECH CO., LTD

HEAD OFFICE
154/1/5 Cong Lo, Tan Son Ward, Ho Chi Minh City

OFFICE
91 Hoang Bat Dat, Tan Son Ward, Ho Chi Minh City

PLANT
820 Ap Chanh, Duc Lap Commune, Tay Ninh Province

TECHNICAL
0979 793 804

SALES
0914 765 778

EMAIL
bumagreen@bumatech.com.vn

WEBSITE
www.bumatech.vn

1.4 Emergency telephone number

Medical emergency — 24/7: **115** (national emergency number). Take this Safety Data Sheet or the product label with you to the medical facility.

BUMATECH Technical Department: 0979 793 804 (office hours) — advice on the product and on response measures.

2 HAZARD(S) IDENTIFICATION

2.1 Classification of the substance or mixture (GHS)

The product is NOT classified as a hazardous mixture under the GHS classification criteria — it does not meet the classification thresholds for physical, health or environmental hazards. The product is a water-based acrylic polymer dispersion, non-combustible, with a low volatile organic compound (VOC) content. Basis of classification: (a) The CMIT/MIT preservative (CAS 55965-84-9) is controlled below 0.0015% — the specific concentration limit (SCL) for classification as Skin Sensitisation Category 1A. (b) Ammonia (CAS 1336-21-6) is present below 0.1%, far below the health classification threshold. (c) Applying the GHS summation method, the combined contribution of ammonia (M = 1) and CMIT/MIT (M = 100) falls below the threshold for classification as an aquatic environmental hazard, Category 3.

2.2 GHS label elements

LABEL ELEMENTS

NOT REQUIRED

No hazard pictogram, signal word, hazard statement (H) or precautionary statement (P) is required under GHS.

Safe-use recommendations — not required on the label

- Keep out of reach of children; keep away from food and drink.
- Avoid direct and prolonged skin contact; wash hands thoroughly after handling.
- Wear gloves and safety goggles when stirring and applying the product; add respiratory protection when spray-applying.
- Do not pour surplus product or tool-wash water into drains or water bodies (see Sections 6 and 13).

Other mandatory label content

Additional mandatory label warning: "Contains reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1). May produce an allergic reaction."

2.3 Other hazards

- The product contains isothiazolinone preservatives (CMIT/MIT) at trace level. These are very potent skin sensitisers: individuals already sensitised may develop allergic contact dermatitis even below the classification threshold. Avoid direct skin contact with the product.
- The product is MILDLY ALKALINE because it contains ammonia as the neutralising agent for the polymer dispersion. Prolonged contact with sweat or body fluids may cause skin irritation; splashes in the eyes may cause redness and stinging. The product may give off a faint ammonia odour, more noticeable when a container is opened in a confined space.
- Spray mist: spray application generates a mist of respirable liquid droplets. Respiratory protection is mandatory when spraying, together with adequate ventilation (see Section 8).
- Dust from dry working: grinding, cutting, sanding or demolishing the cured film generates dust containing pigments and fillers. When dry-working, local dust extraction or surface dampening and an FFP3 dust mask are mandatory.
- The product is highly adhesive. Clean tools and spray equipment while the product is still wet; once cured it can only be removed mechanically.
- Spilled product, or product that dries to a film, can make the work surface slippery.
- Water-based and non-combustible. Freezing breaks the dispersion and irreversibly spoils the product.
- PBT / vPvB assessment: the product contains no PBT or vPvB substance at ≥ 0.1%. It contains no substance of very high concern (SVHC) at ≥ 0.1%.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Mixture — water-based polymer dispersion, fillers and functional additives. The product contains no organic solvents. Hazardous components within the meaning of GHS:

COMPONENT NAME	CAS / EC NO.	CONCENTRATION	CLASSIFICATION (GHS)
Polymer dispersion	Trade secret	Trade secret	Not classified
Powder filler	Trade secret	Trade secret	Not classified — see the note below the table
Hollow glass microspheres	Trade secret	Trade secret	Not classified — see the note below the table
Ammonia	CAS: 1336-21-6	< 0.1%	Skin Corr. 1B, H314; STOT SE 3, H335; Aquatic Acute 1, H400 (M = 1)
Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1) — preservative (CMIT/MIT)	CAS: 55965-84-9 EC Index: 613-167-00-5	< 0.0015%	Acute Tox. 2, H330; Acute Tox. 2, H310; Acute Tox. 3, H301; Skin Corr. 1C, H314; Eye Dam. 1, H318; Skin Sens. 1A, H317; Aquatic Acute 1, H400 (M = 100); Aquatic Chronic 1, H410 (M = 100)

In this product the powder fillers are dispersed in the liquid phase, so no dust is generated; the dust hazard arises only when the cured film is dry-worked — see Sections 2.3 and 8. The hazard (H) statements in the table above are the classifications of the individual components in their PURE form, not the classification of the product.

The hollow glass microspheres are dispersed in the liquid phase, so no dust is generated in normal use. When the CURED film is ground, cut or sanded, the dust produced may contain fragments of the microspheres — apply the dust controls given in Section 8.

4 FIRST-AID MEASURES

4.1 Description of necessary first-aid measures

Skin contact: Immediately remove contaminated clothing and footwear. Wash skin with soap and plenty of water. If irritation, a rash or itching appears and persists, get medical advice/attention and take the SDS with you. Wash clothing before reuse.

Eye contact: Remove contact lenses if worn and easy to do. Rinse the eye under gently running clean water with the eyelids open for 10 - 15 minutes. Do not rub. If irritation persists, consult a doctor or ophthalmologist.

Ingestion: Rinse mouth with water. Do not induce vomiting. Do not give milk or alcoholic drinks. Never give anything by mouth to an unconscious person. If symptoms persist, get medical advice and take the SDS with you.

Inhalation: Move the person to fresh air, keep warm and at rest. If unconscious, place in the recovery position and get medical help. If symptoms persist, call a doctor. Never leave the person unattended.

4.2 Most important symptoms/effects, acute and delayed

No serious immediate symptoms have been reported. Prolonged skin contact may cause dryness or slight irritation. Splashes in the eyes cause temporary redness, stinging and discomfort. Inhalation of spray mist in confined spaces may cause slight respiratory irritation due to ammonia. Individuals already sensitised to isothiazolinones may develop allergic contact dermatitis, typically appearing 12 - 48 hours later.

4.3 Indication of immediate medical attention and special treatment

Treat symptomatically. No specific antidote is known. Where allergic contact dermatitis is suspected, stop exposure and refer the person to a dermatologist; mention possible isothiazolinone sensitisation so that patch testing can be considered. The additional toxicological information in Section 11 must be observed.

5 FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable media: the water-based product is non-combustible; use media appropriate to the surrounding fire (water, foam, CO_2, dry powder).

Unsuitable media: none in particular.

5.2 Special hazards arising from the chemical

The water-based product itself is non-combustible. Combustion of the dried polymer film may generate carbon monoxide (CO), CO_2 and unburned hydrocarbons (smoke). No hazardous explosive combustion products have been reported.

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus (SCBA) when fighting a fire in a confined space or a smoky fire. Follow standard procedures for chemical fires. Collect contaminated fire-extinguishing water separately; do not allow it to enter drains or water bodies.

6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment when cleaning up (see Section 8). Take care: surfaces wetted with the product are very slippery — warn of the slip hazard. Avoid prolonged skin contact and eye contact. Ensure the area is ventilated.

6.2 Environmental precautions

Do not discharge the product into drains, surface water or soil — the cured polymer can block pipework, and both the ammonia and the preservative in the product are very toxic to aquatic life in their pure form. Contain the spill. If the product contaminates a river, lake or watercourse, notify the competent authority immediately.

6.3 Methods and material for containment and cleaning up

Small quantity: absorb with inert absorbent material (cloths, cotton waste, sand, sawdust) and collect into sealed, correctly labelled containers for disposal. Large quantities: collect mechanically and pump into suitable containers. Wipe clean while the product is still wet — once dry, the polymer film adheres very strongly and can only be removed mechanically. Wash the area with water; retain all contaminated wash water for treatment per Section 13.

7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Stir the product thoroughly before application. Apply by brush, roller or spray at up to approximately 0.5kg/m² per coat; build up in several thin coats to limit cracking and blistering, each coat at right angles to the previous one. Gloves and safety goggles are MANDATORY throughout; add respiratory protection when spray-applying (see Section 8). Do not eat, drink or smoke while working; wash hands thoroughly after handling. Close the container immediately after use. Apply in a well-ventilated area with air movement; avoid confined spaces and areas with children or pets.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, shaded place with the container tightly closed and correctly labelled; keep away from direct sunlight and heat sources. PROTECT FROM FREEZING / FROST — freezing breaks the dispersion and irreversibly spoils the product. Pigments and fillers may settle during prolonged storage; stir thoroughly before use. Keep out of reach of children and away from food and drink.

Shelf life: 24 months in the unopened container (per the Technical Data Sheet).

Incompatible materials: strong acids (release ammonia); concentrated electrolytes and polyvalent metal salts (coagulate the dispersion); freezing temperatures.

7.3 Specific end use(s)

Heat-reflective flexible acrylic waterproofing coating for profiled sheet roofs, metal roofs, concrete roofs and external walls (see Section 1 and the product Technical Data Sheet).

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters — occupational exposure limits (Vietnam)

Component with an occupational exposure limit: ammonia (CAS 1336-21-6) — ACGIH TWA 25ppm and STEL 35ppm. At the concentration present in the product and under well-ventilated application conditions, the airborne ammonia concentration is expected to be far below these limits; take care when opening containers and when working in confined spaces. Apply general occupational hygiene principles per QCVN 02:2019/BYT and the Law on Occupational Safety and Health. NOTE: when grinding / cutting / sanding the cured film, dust must be controlled to the limits in QCVN 02:2019/BYT.

8.2 Individual protection measures (PPE)

The product is not classified as hazardous; basic protective equipment must nevertheless be worn throughout application. Provide an eyewash point and clean water near the work area.

Eye protection: Safety goggles per EN 166. Mandatory when stirring, when spray-applying, when working overhead and when cutting or grinding surfaces.

Hand protection: Chemical-resistant gloves per EN ISO 374 — nitrile rubber (NBR) 0.1 - 0.4mm thick, breakthrough time ≥ 480 minutes. Mandatory throughout application. Gloves are also the primary measure against skin sensitisation to isothiazolinones.

Skin / body protection: Protective coveralls with long sleeves and long trousers; rubber boots when applying large quantities or when standing in areas of wet mortar.

Respiratory protection: Normally not required for brush or roller application in a well-ventilated area. For spray application or work in confined spaces: a half mask with A2-P2 combination filters per EN 14387. When grinding, cutting or sanding the cured film: an FFP3 mask per EN 149, combined with local dust extraction or surface dampening.

Engineering controls: Ensure adequate general ventilation, particularly when spray-applying or working in confined spaces; provide local dust extraction when dry-working the cured film. Provide an eyewash point and clean water near the work area.

9 PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Viscous liquid
Colour	White
Odour	Slight, characteristic
Odour threshold	No data available
pH	≈ 7 - 9 at 25°C
Melting/freezing point	≈ 0°C (water-based — protect from freezing)
Boiling point	≈ 100°C (water-based)
Flash point	Not applicable (water-based, non-combustible)
Flammability	Non-combustible
Vapour pressure	As for water (≈ 2.3kPa at 20°C)
Density	0.80 ± 0.05g/cm³ at 25°C (ASTM D1475) — lower than a conventional acrylic coating because of the hollow microspheres
Solubility in water	Dispersible in water before curing; insoluble in water once cured

10 STABILITY AND REACTIVITY

10.1 Reactivity	Stable under normal conditions. Does not decompose when stored and used as directed.
10.2 Chemical stability	Stable when stored correctly (cool and dry, protected from freezing). Freezing breaks the dispersion and irreversibly degrades the product.
10.3 Possibility of hazardous reactions	No hazardous reactions occur. Stable under the recommended storage conditions.
10.4 Conditions to avoid	Freezing / frost; elevated temperatures; prolonged direct sunlight.
10.5 Incompatible materials	Strong acids — react to release ammonia; concentrated electrolytes and polyvalent metal salts — coagulate the dispersion.
10.6 Hazardous decomposition products	Under normal storage and use conditions: no hazardous decomposition products are known. On combustion: carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

11 TOXICOLOGICAL INFORMATION

ROUTE OF EFFECT	CLASSIFICATION RESULT
a) Acute toxicity	Not classified. No component is present at a concentration reaching the classification threshold.
b) Skin corrosion/irritation	Not classified. Prolonged or repeated contact may cause dryness or slight irritation owing to the mild alkalinity of the product.
c) Serious eye damage/irritation	Not classified. May cause temporary stinging, redness and discomfort if splashed into the eyes.
d) Respiratory/skin sensitisation	Not classified. The product contains CMIT/MIT preservative below 0.0015% — the specific concentration limit for classification as Skin Sensitisation Category 1A. Note: individuals already sensitised to isothiazolinones may still show an allergic reaction below this threshold.
e) Germ cell mutagenicity	Not classified.
f) Carcinogenicity	Not classified. Titanium dioxide is no longer classified as hazardous following the annulment of its harmonised classification in 2025; IARC still places it in Group 2B for occupational respirable dust — see the note in Section 3.
g) Reproductive toxicity	Not classified.
h) STOT — single exposure	Not classified. Inhalation of spray mist in confined spaces may cause slight respiratory irritation due to ammonia.
i) STOT — repeated exposure	Not classified. No test data are available for the product as a whole.
j) Aspiration hazard	Not classified.

12 ECOLOGICAL INFORMATION

Toxicity	The product is NOT classified as hazardous to the aquatic environment. The two determining components are ammonia (M = 1) and the CMIT/MIT preservative (M = 100); their combined contribution under the summation method falls below the Category 3 classification threshold. The product must nevertheless be kept out of water bodies.
Persistence and degradability	CMIT/MIT: not readily biodegradable (OECD 301). Polymer: persistent, not biodegradable; dries to an inert film. Titanium dioxide and calcium carbonate: inert inorganic materials, not biodegradable. Ammonia: biodegradation tests do not apply to inorganic substances; in the environment it is rapidly converted through the nitrogen cycle.
Bioaccumulative potential	Not bioaccumulative (OECD 305 for CMIT/MIT). The polymer is of high molecular weight — bioaccumulation is not expected.
Mobility in soil	No data available. The dried product forms an inert film of low mobility.
Other adverse effects	PBT and vPvB assessment: the product contains no PBT or vPvB substance at 0.1% or above. Do not allow the product to enter surface water, drainage systems, sewers or soil. Special note for water tanks and swimming pools: put into service only after the waterproofing layer has cured and been kept for the full curing time given in the Technical Data Sheet; discard the first fill of water and observe the product's current potable-water contact certification.

13 DISPOSAL CONSIDERATIONS

- Minimise waste generation. Allow surplus product to dry / cure completely, then dispose of it as solid construction waste, or hand it to an authorised contractor for treatment at a licensed facility.
- Do not pour surplus product or tool-wash water into drains, water bodies or soil — the cured polymer blocks pipework. Collect separately for disposal.
- Dispose of in accordance with local and national regulations (the Law on Environmental Protection and applicable waste-management regulations).
- Empty packaging: drain completely (drip-free) and clean; it may then be sent to a suitably equipped facility for recycling or disposal. Do not reuse for other purposes.

14 TRANSPORT INFORMATION

Not classified as dangerous goods under transport regulations (ADR/RID for road and rail, IMDG for sea, IATA for air) or under domestic dangerous-goods transport regulations (Decree 161/2024/NĐ-CP).

UN number	Not applicable
UN proper shipping name	Not applicable
Transport hazard class(es)	Not applicable
Packing group	Not applicable
Marine pollutant	None

15 REGULATORY INFORMATION

Vietnam

- Law on Chemicals No. 69/2025/QH15 (effective from 01/01/2026).
- Decree 24/2026/NĐ-CP, Decree 25/2026/NĐ-CP and Decree 26/2026/NĐ-CP.
- Circular 01/2026/TT-BCT and Circular 02/2026/TT-BCT of the Ministry of Industry and Trade.
- QCVN 02:2019/BYT — permissible dust exposure limits at the workplace.
- Decree 161/2024/NĐ-CP — transport of dangerous goods.
- Law on Occupational Safety and Health; applicable goods-labelling regulations.
- Classification and labelling per the Globally Harmonized System (GHS).

International

- United Nations GHS (current edition).
- Reference product standards: per the Technical Data Sheet.

Chemical safety assessment: not mandatory for this mixture.

16 OTHER INFORMATION

Full text of the hazard (H) statements appearing in this SDS

H301	Toxic if swallowed.
H310	Fatal in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

> All the H statements above are the classifications of the components in their PURE form, as listed in Section 3. At the concentrations present in the product none of them applies to the product — SolarSHIELD is not classified and carries no hazard statement (see Sections 2.1 and 2.2).

Legend to abbreviations

CAS	Chemical Abstracts Service
EC / EINECS	European Community EINECS / ELINCS inventory
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
OEL / TWA	Occupational exposure limit / time-weighted average / short-term
PBT / vPvB	Persistent, bioaccumulative, toxic / very persistent, very bioaccumulative
PPE	Personal protective equipment
LC50 / EC50 / ErC50	Concentration lethal to, or affecting, 50% of the test organisms
NOEC	No observed effect concentration
M factor	Multiplying factor used in the summation method when classifying aquatic environmental hazards
SCL	Specific concentration limit — a substance-specific threshold used instead of the generic threshold when classifying a mixture
CMIT/MIT	Reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1) — preservative
OECD	Organisation for Economic Co-operation and Development — test guidelines
VOC	Volatile organic compound
SVHC	Substance of very high concern

Main data sources: SolarSHIELD Technical Data Sheet (version 2026.10); the EnerSAV 2026.07 safety data sheet for the shared resin system and additives; United Nations GHS.

Disclaimer: The information herein is based on our state of knowledge at the date stated and refers solely to the product indicated; it constitutes no guarantee of any particular property. It is the user's responsibility to ensure that this information is appropriate and complete for the specific intended use. This SDS cancels and replaces any preceding release.

END OF SAFETY DATA SHEET · 16 OF 16 SECTIONS