



**"SHELTERING YOUR INVESTMENT"**

# ARC ADVANCED BIO THERMAL SEALER

## TECHNICAL AND MATERIAL SAFETY DATA SHEET

### DISCLAIMER AND IMPORTANT SAFETY NOTICE

To the best of our knowledge the technical data contained herein is true and accurate at the date of issuance and is subject to change without prior notice. User must contact ARC before ordering to ensure the correct products are used for application. No guarantee of accuracy is given nor implied. We guarantee that all ARC products have undergone quality control procedures to conform to ARC quality control standards. We assume no responsibility for coverage, performance or injuries resulting from use. Liability, if any, is limited to the replacement of products. Prices and cost data, if shown, are subject to change without prior notice. The factory will NOT be responsible for damage or loss if application is not done according to ARC specifications and adhered to. It is the customers' responsibility to ensure they familiarize themselves with the correct application methods and ask for help from ARC. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY ARC, EXPRESS OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

### SUPPLIER IDENTIFICATION AND INFORMATION

|                               |                                    |
|-------------------------------|------------------------------------|
| <b>Company name</b>           | <b>Anti Rain Concepts</b>          |
| <b>Address of Distributor</b> | <b>Gordon's Bay Cape Town 7175</b> |
| <b>Tel number</b>             | <b>067 625 7333</b>                |
| <b>Email-</b>                 | <b>info@antirainconcepts.co.za</b> |
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Unit 35/8 Moddercrest Business Park, Modderfontein, JHB, 1609

Reg No: 2011/058900/23

**PRODUCT IDENTIFICATION**

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product name</b>              | ARC advanced bio thermal sealer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Product Description</b>       | ARC advanced bio thermal sealer is a water-based pure acrylic heat reflective coating. It has advanced ceramic bead technology with reflective properties of up to 45%. It will cool your home in summer, insulate your roof in winter and also waterproof your roof. The product is environmentally-friendly and does not emit noxious fumes and odours during and after application. Low sheen/silk fine texture finish available in standard colours. The standard colours available are Light Grey and White.                                                                                                                                                                                    |
| <b>Principal Characteristics</b> | <ul style="list-style-type: none"> <li>• Due to the unique formulation, the paint acts as a one-way membrane, allowing moisture to escape to the surface and has excellent heat reflective properties.</li> <li>• Has excellent adhesion to practically any surface.</li> <li>• Colour fastness, fungi retarded and heat resistant. (UV protection by natural pigmentation).</li> <li>• The product will not harden or deteriorate with age.</li> <li>• The product can withstand aggressive scrubbing and has a low flame index.</li> <li>• Non-toxic and colourless on application no H.A.P.</li> <li>• ARC Heat Resist is a cost-effective addition to under – roof insulation system.</li> </ul> |
| <b>Intended use</b>              | ARC Heat Resist has seal and adhering properties and can be applied to concrete, metal, wood etc. The ideal area for application is metal / tile roofs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

**COMPOSITION**

|                                        |                                                                                                                                                               |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>TECHNICAL DATA:</b>                 |                                                                                                                                                               |
| <b>Drying Time</b>                     | The product dries physically within a few minutes but needs approximately 23 – 36 hours to be fully cured. Allow each application to dry before the next one. |
| <b>Colour</b>                          | White and Light Grey only.                                                                                                                                    |
| <b>Thinner</b>                         | Must NOT be thinned                                                                                                                                           |
| <b>Minimum application temperature</b> | 5°C                                                                                                                                                           |
| <b>Temperature tolerance</b>           | From -50°C up to 196°C                                                                                                                                        |
| <b>Storage</b>                         | Room temperature and must be tightly closed                                                                                                                   |
| <b>Spreading rate</b>                  | 2 – 5 m <sup>2</sup> /L (1 coat) – 500 microns                                                                                                                |
| <b>Cleaner</b>                         | Water                                                                                                                                                         |
| <b>Shelf life</b>                      | 2 years from manufacturing                                                                                                                                    |
| <b>De-canning Sizes</b>                | 5 Litre 20 Litre                                                                                                                                              |
| <b>Application</b>                     | Suitable to apply with a Brush, Roller and/or Spray Gun. Product should be stirred before use.                                                                |

**HAZARD IDENTIFICATION**

|                                  |                                                                                                                                                                                                                                                                                                     |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Primary route of exposure</b> |                                                                                                                                                                                                                                                                                                     |
| <b>Inhalation</b>                | No effects observed during application in confined space.                                                                                                                                                                                                                                           |
| <b>Eye contact</b>               | Direct contact with material can cause slight irritation.                                                                                                                                                                                                                                           |
| <b>Skin contact</b>              | Prolonged and repeated contact cause no irritation. No specific symbols are required for the use of the products – the products are not combustible or flammable and do not have specific acute, chronic or toxic effects on humans, nor are they harmful to the natural environment when released. |

**FIRST AID MEASURES**

|                     |                                                                                     |
|---------------------|-------------------------------------------------------------------------------------|
| <b>Eye contact</b>  | Flush eyes with large amount of water, if irritation persists, consult a physician. |
| <b>Skin contact</b> | Wash the skin with soap and water.                                                  |
| <b>Ingestion</b>    | Drink plenty of water.                                                              |

**FIRE-FIGHTING MEASURES**

When applied on surfaces: Non-combustible, could act to retard the spread of flame.

|                                 |                                                                         |
|---------------------------------|-------------------------------------------------------------------------|
| <b>Smoke toxicity index</b>     | Toxic gas factor – 1.0.                                                 |
| <b>When cured (not applied)</b> | Can burn.                                                               |
| <b>Extinguishing agents</b>     | Normal foam, powder, water spray, or carbon dioxide (CO <sub>2</sub> ). |

**ACCIDENTAL RELEASE MEASURES**

|                                  |                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personal precautions</b>      | Follow normal safety precautions and if spillage occurs in a confined space, ensure there is adequate ventilation. There is no LD 50 data available for the products and the concentrations of particularly hazardous materials are so low that they are not considered a significant hazard under the recommended conditions of use. |
| <b>Environmental precautions</b> | No environmental hazard when applied to surfaces or cured (solidified). No threat to freshwater or marine life.                                                                                                                                                                                                                       |
| <b>Methods for cleaning up</b>   | Contain the spillage with sand or earth and take up spilled material (if possible) on a non-flammable absorbent (sand, earth, diatomite, chemical binders) and put in an appropriate container. Label the container with the waste designation, and dispose according to the legislation – do not use solvent.                        |

**HANDLING AND STORAGE**

|                                 |                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Safe handling advice</b>     | Avoid direct contact with skin and eyes. Avoid inhalation and ingestion. Take personal protective measures and follow the protection and safety regulations. When working with coating products in a spray cabin, sufficient control of aerosols is unlikely and breathing apparatus such as respirators can be worn during spraying if preferred. |
| <b>Measure to prevent fire</b>  | No specific preventative measures are required but keep the application area well ventilated.                                                                                                                                                                                                                                                      |
| <b>Requirements for storage</b> | Store in original containers (if possible) and keep tightly closed in a cool, dry, well-ventilated area. Although the products are not defined as dangerous goods, protect the products from direct extreme heat such as sources of ignition. Avoid direct sunlight and do not store in conditions below freeze-point.                             |

**EXPOSURE CONTROLS / PERSONAL PROTECTION**

Occupational exposure limit: OSHA PEL 15 mg/m (total dust), 5 mg/m (respiration fraction)

|                               |                                                                                                                                                                                                                   |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personal protection:</b>   |                                                                                                                                                                                                                   |
| <b>Respiratory protection</b> | Respiratory programme must be followed whenever workplace conditions warrant a respirator's use. Not required if airborne concentrations are maintained below exposure limit listed in exposure limit information |
| <b>Eye Protection</b>         | Safety glasses with impenetrable side shields are recommended.                                                                                                                                                    |
| <b>Skin protection</b>        | Gloves may be used if required, but no known effects have been observed.                                                                                                                                          |

**STABILITY AND REACTIVITY**

|                                |                                                                                               |
|--------------------------------|-----------------------------------------------------------------------------------------------|
| <b>Stability</b>               | Stable when following the handling and storage recommendations.                               |
| <b>Conditions to avoid</b>     | Avoid temperatures above 40°C, direct sunlight and below freeze point for storage conditions. |
| <b>Incompatibility</b>         | None known                                                                                    |
| <b>Hazardous decomposition</b> | By fire – carbon dioxide (CO <sub>2</sub> ) and carbon monoxide (CO).                         |

**PHYSICAL AND CHEMICAL PROPERTIES**

|                                 |                                                                                                |
|---------------------------------|------------------------------------------------------------------------------------------------|
| <b>Appearance</b>               | Liquid                                                                                         |
| <b>Odour</b>                    | Characteristic of the specific product (faintly similar to a PVA paint product in some cases). |
| <b>PH ~</b>                     | 8 -9                                                                                           |
| <b>Reactivity</b>               | Salt fog resistant                                                                             |
| <b>UV Resistance/Weathering</b> | 75 000 hours – No visible breakdown                                                            |
| <b>Density</b>                  | > 1 gm/cm                                                                                      |
| <b>Vapour density</b>           | Heavier than air                                                                               |
| <b>Solubility</b>               | Miscible in / with water prior to cure                                                         |
| <b>Evaporation rate</b>         | < 1 water (see section 5)                                                                      |

**TOXICOLOGICAL INFORMATION / HEALTH EFFECTS**

|                             |                                                                                                                    |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------|
| <b>Acute toxicity</b>       | No known effects – health hazard rating in group 4 (minimal) of the Recommended Practice (ARP 006: 1991) guideline |
| <b>Skin contact</b>         | No known effects                                                                                                   |
| <b>Eye contact</b>          | Splashes can cause eye irritation                                                                                  |
| <b>Chronic toxicity</b>     | No known effects                                                                                                   |
| <b>Carcinogenicity</b>      | No known effects                                                                                                   |
| <b>Mutagenicity</b>         | No known effects                                                                                                   |
| <b>Neurotoxicity</b>        | No known effects                                                                                                   |
| <b>Reproductive hazards</b> | No known effects                                                                                                   |

**CONTINUED...**

|                               |                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Additional information</b> | The products have not been tested, but their classifications calculated according to conventional methods from the dangerous substances regulations. The products have been used to paint aquariums that house tropical fish and ponds that house Koi fish with no effects at all. The products do not emit noxious fumes or odour during and after application. |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**ECOLOGICAL INFORMATION**

|                               |                                                                                                                                                                                                                                 |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Aquatic toxicity</b>       | No known effects                                                                                                                                                                                                                |
| <b>Biodegradability</b>       | Products are considered highly biodegradable, but not tested                                                                                                                                                                    |
| <b>Bioaccumulation</b>        | No known effects                                                                                                                                                                                                                |
| <b>Mobility</b>               | Not tested                                                                                                                                                                                                                      |
| <b>Additional information</b> | The product is environmentally friendly with a very low VOC (Volatile Organic Compound) as tested by the Huntingdon / SWL laboratories, Report number: 261394 – 23093 and described by America as a revolutionary breakthrough. |

**DISPOSAL CONSIDERATION**

|                        |                                                                                                                                                        |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Disposal key</b>    | 080103 – EWC waste from water-based paints.                                                                                                            |
| <b>Disposal method</b> | Hand over empty packaging to an authorised disposal company / waste company – the waste regulations of the appropriate authorities are to be followed. |

**TRANSPORT INFORMATION**

|                                |                                                         |
|--------------------------------|---------------------------------------------------------|
| <b>ADR / FID (Road)</b>        | Not dangerous materials according to these regulations. |
| <b>GGVSee / MDG (Maritime)</b> | Not dangerous materials according to these regulations. |
| <b>IATA (AIR)</b>              | Not dangerous materials according to these regulations. |

**REGULATORY INFORMATION / EEC CLASSIFICATION**

|                                  |                                                                                        |
|----------------------------------|----------------------------------------------------------------------------------------|
| <b>EEC hazard classification</b> | None of the substances of the products are classified by the EEC as hazardous.         |
| <b>TSCA certification</b>        | All of the substances in the products are listed, or exempt from listing, on the TSCA. |
| <b>National legislation</b>      | Pay attention to the Occupational Health and Safety Act.                               |

**OTHER INFORMATION**

All data is based on the current knowledge of Anti Rain Concepts and describes the product with reference to safety data and is therefore not intended to guarantee certain properties.



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#### **APPLICATION INSTRUCTIONS AND TECHNICAL DATA**

- These instructions are not intended to show product recommendations for specific services.
- They are issued as an aid in determining correct surface preparation and application procedures.
- It is assumed that the proper recommendations have been made.
- These instructions should be followed closely to obtain the maximum service from the material.

#### **TECHNICAL INFORMATION:**

ARC advanced bio thermal sealer is developed with advanced radiant barrier coating with space age insulation properties. This space age product has a tremendous impact on the environment around us and is revolutionary approach to the coating industry worldwide.

ARC advanced bio Thermal sealer's unique Elastomeric Radiation Control Coatings for roofs and walls is without a doubt the coating material for the future.

With a coating of ARC advanced bio thermal sealer, radiant heat is deflected, absorbed and dissipated. When solar heat radiant's on a roof, the surface temperature of the roof rises, resulting in a 75% - 90% increase in heat build-up within the building. ARC advanced bio thermal sealer repels up to 75% of the heat in the direction of the heat source, allowing light heat transfer into the building therefore reducing the temperature up to 45%. ARC advanced bio thermal sealer has an ultraviolet resistance of 96%, a solar reflectance of over 80% and an emissivity of 90%. ARC advanced bio thermal sealer reflects heat as a mirror reflects sunlight.

ARC advanced bio thermal sealer's high thermal reflective properties are due to millions of hallow ceramic beads that cluster together to provide dead air space. When applied, this liquid acrylic emulsion dries and forms an Elastomeric heat shield, due to this the temperature inside a building is reduced dramatically.

Unlike other roofing systems, ARC advanced bio thermal sealer is simple in application with dramatic results. Before an ARC advanced bio thermal coating is applied, the surface must be cleaned; prepared and any loose roof fasteners are to be replaced or tightened. Reinforcing should be applied to seams where needed and two coats of ARC advanced bio thermal sealer must be applied. Once applied the coating chemically converts rust into iron sulphate and prevents further corrosion.

ARC advanced bio thermal sealer also seals and waterproofs a roof; apart from forming the radiant heat barrier and eliminates 80% of very destructive thermal shock, a major cause of roof degradation and water leakage. The movement in various roofing materials i.e. roof sheets, flashings, purloins and fasteners rub against each other and causes roof degradation and water leakage.

Standard Testing Methods have verified that ARC advanced bio thermal sealer is extremely resistant to fire, water, rain, chemicals, abrasions and fungal growth.

ARC advanced bio thermal sealer is highly adhesive, flexible, water-based, non-toxic and totally environmentally-friendly. It also has endless application possibilities due to the amazing space age insulation properties.

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Due to ARC advanced bio thermal sealer’s effective radiant heat barrier properties, it is the most revolutionary hitech coatings product in the world today:

- Reduces temperature dramatically by up to 45%
- Cuts air-conditioning and refrigeration equipment running costs.
- Stops thermal ageing and thermal shock by reducing heat load, Ultra Violet penetration and degradation.
- Reduces roof maintenance by up to 80%.
- Protects by eliminating blistering, peeling, cracking and fading.
- Converts rust and increases metal life.
- Reduces the risk of serious burns caused by high surface temperatures on metals.
- The most advanced radiant barrier insulating coating available and has waterproofing properties.

ARC advanced bio thermal sealer is South Africa’s foremost ceramic based total solution liquid thermal coating that offers:

- Reduces capital investment in cooling equipment.
- Lowers maintenance costs.
- Creates a better working and living environment.

These instructions are not intended to show product recommendations for specific services. They are issued as an aid in determining correct surface preparation and application procedures. It is assumed that the proper recommendations have been made. These instructions should be followed closely to obtain the maximum service from the material.

#### **MICROSPHERES:**

Microspheres in the coating drastically reduce the sun’s rays and heat from getting through. Instead the rays are bounced harmlessly back into the atmosphere.

#### **BENEFITS OF MICROSPHERES:**

- Reduces interior heat of buildings by up to 45%
- Save electricity by using less air conditioning and refrigeration.
- Greater indoor comfort during hot weather.
- Stops thermal ageing by reducing heat load.
- Insulates the roof at a fraction of the cost of conventional insulation products.
- Prevents rust, blistering, peeling and cracking.
- Eco – friendly as it reduces dependence on electricity.
- Easy and quick low – cost durable application.



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**FEATURES INCLUDED:**

- Quick drying - overcoat 30 - 60 minutes
- Excellent flexibility - will never harden
- Ultraviolet and weather resistant: 75, 000 hours +
- Good abrasion resistance
- Exceptional performance in wet weather.
- Rust prevention
- Colour fastness
- Zero flame spread

**Excellent resistance to:** Acids, alkalis, water, salt solutions and solvents.

**Temperature resistance:** Minus 50°C - 196°C. At 110°C loss of gloss is observed, and discoloration takes place, without loss of film integrity.

**Application:** Suitability prepared concrete, metal and any surfaces as recommended.

**Compatible Coatings:** A test patch is recommended before use of most coatings. Contact your ARC Distributor for specific information.

**REQUIREMENTS FOR STORAGE AND APPLICATION**

| Parameter                | Storage (Unopened) | Paint | Substrate               | Environment |
|--------------------------|--------------------|-------|-------------------------|-------------|
| % RH (Relative Humidity) | 100 % Maximum      | -     | Min 2°C above Dew Point | 85 % Max    |
| Temp °C Min              | 5°C                | 5°C   | 5°C                     | 5°C         |
| Temp °C Min              | 40°C               | 40°C  | 40°C                    | 40°C        |

**Surface Preparation:** Previously painted and primed surfaces must be cleaned by removing all grease, paint and loose friable dirt with ARC Cleanwash. Old enamel or oil painted surfaces should be sanded to a matt finish. Trial patches are required prior to full application.

**Application:** Suitable to apply with brush, roller and spray.