

## BOND-FLEX PLUS

### Easy to use structural adhesive suitable for powder coating.

Bond-Flex Plus is a high quality structural adhesive glue, this is one of the strongest adhesives on the market. Formulated to resist short periods of heat associated with powder coating and can be painted immediately after application "wet on wet" with water-based paints.

Bond-Flex Plus also has double the skin formation time (about 20 min) compared to the original Bond-Flex- giving you more time to work with the adhesive before bonding.

### Characteristics

- High performance mechanical properties
- Very high bond strength
- Quick build-up of end strength
- Long open time
- High shear strength after full cure
- Does not contain isocyanates, silicone, solvents
- Can be sanded after full cure
- Flexible elastic rubber – movement accommodation up to 20%
- Suited for application in warm, humid climates
- Very easy to tool and finish
- No bubble formation within sealant
- Colour stable and UV resistant
- Can be painted wet-on-wet in paint trains with most industrial paints
- Withstand all climatic conditions
- Minimal health and safety considerations

### Application examples

- For use in elastic structural bonding applications in car, coach, caravan, marine, train, aerospace industries where a tough and flexible bond is required
- Structural elastic bonding between metal surfaces, coated surfaces and many plastics (not PE, PP, Teflon)
- Bonding applications which pass through paint tunnels
- Structural bonding in vibrating constructions
- Connection joints in sheet metal fabrication

### Packaging

- Colours: White
- Packaging: Foil bag 600ml

### Shelf life

12 months in unopened packaging in a dry and cool storage place at temperatures between +5 °C and +25 °C

## Technical data

Chemical base	MS Polymer®
Viscosity	Light paste
Curing method	Air moisture cure
Skin formation	Approx. 20 min. (20 °C /65% R.V.)
Curing rate	3-4 mm / 24 hrs (20 °C /65% R.V.)
Hardness of rubber (DIN 53505)	60 +/- 5 Shore A
Density (specific gravity) (DIN 53479)	1.44 g/ml
Maximum Deformation	+/- 20%
Short Period Heat Resistance	At least 30 min in paint trains 180-200 °C
Temperature Resistance (Fully Cured)	-40 °C to +90 °C
Elasticity Modulus 100% (DIN 53504)	1.50 N/mm <sup>2</sup>
Elongation at Break (DIN 53504)	> 350 %
Tear Strength (tensil) (DIN 53504)	> 2.70 N/mm <sup>2</sup>

## Chemical resistance

- Good resistance to water, aliphatic solvents, mineral oils, grease, diluted inorganic acids and alkalis
- Poor resistance to aromatic solvents, concentrated acids, chlorinated hydrocarbons

## Bonding

- Bond-Flex Plus has an excellent adhesion on almost all substances. Bond-Flex Plus has been tested on the following metal surfaces: steel, AlMgSi1, brass, electrolytic galvanised steel, AlCuMg1, flame galvanised steel, AlMg3 and steel ST1403. Plastics that were tested include: polystyrene, polycarbonates (Makrolon®), PVC, ABS, polyamide, PMMA, glass fibre reinforced epoxy and polyester (GRP).
- While producing plastics very often releasing agents, processing aids and other protective agents (like protection foil) are used. These should be removed prior to bonding. For optimum adhesion the use of Surface Activator is recommended.
- NOTICE: bonding plastics like PMMA (ie Plexi® glass), polycarbonate (ie Makrolon® and Lexan®) in stress loaded application can give rise to stress cracking and crazing in these substrates. The use of Bond-Flex Plus is not recommended in these applications.
- There is no adhesion to: PE, PP, PTFE (Teflon®) and glass.

## Substrates

- Nature: clean, dry, free of dust and grease. We recommend the use of Surface Activator on non porous surfaces to clean and activate them.
- Priming: Primer 150 may be used on porous substrates in water loaded applications.
- Aerobolt always recommend preliminary compatibility tests previous to application

## Bonding layer

We recommend a bonding layer of at least 2mm to achieve a bond maximum elastic properties.

## Remarks

- Bond-Flex Plus can be painted immediately after application "wet on wet" with water based industrial paints in paint trains (powder coating applications) at temperatures of up to 200 °C for approx 30 minutes.
- This product cannot be used as a glazing sealant.
- Bond-Flex Plus can be used for adhering of natural stone, but it cannot be used as a joint sealant. Bond-Flex Plus can therefore only be used on the bottom of natural stone tiles.
- When applying, make sure not to spill any sealant on the surface of materials.

## Instructions for use

Surface preparation:	Clean, free of dust and grease.
Priming:	For porous surfaces Primer 150 may be applied. Non porous substrates abraded and cleaned with Aerobolt cleaner.

We recommend preliminary adhesion tests

Application Method :	Manual or pneumatic caulking gun
Application Temperature:	+5 °C to +30 °C
Clean with :	White Spirit immediately after use
Tool with :	Soapy solution before skin formation
Repair with :	Bond-Flex Plus

## Safety measures

Apply the usual industrial hygiene.

## Paintability

Bond-Flex Plus may be overpainted, however due to the large number of paints and varnishes available we strongly suggest a compatibility test before application. The drying time of alkyd resin based paints may increase. Due to the wide variety of possible substrates, we recommend compatibility tests.

## Important note

Bond-Flex Plus can be applied to a wide variety of substrates. Due to the fact that specific substrates such as plastics, polycarbonate etc may differ from manufacturer to manufacturer, we recommend preliminary compatibility tests.

**Note:** The directives contained in this documentation are the result of our experiments and of our experience and have been submitted in good faith. Because of the diversity of the materials and substrates and the great number of possible applications which are out of our control, we cannot accept any responsibility for the results obtained. In every case it is recommended that preliminary experiments be carried out.

# Material Safety Data Sheet

## NON-Hazardous, NON-Dangerous Goods

### SECTION 1. Material and Supply Company Identification

**Product name:** Aerobolt Bond-Flex Plus  
**Recommended use:** Sealant  
**Supplier:** Aerobolt Australia Pty Ltd  
**Contact:** Jim Roustas  
**ABN:** 91 127 162 047  
**Address:** 12/2 Barry Road, Chipping Norton  
NSW 2170 Australia  
**Email:** [contact@huckaerobolt.com.au](mailto:contact@huckaerobolt.com.au)  
**Emergency Telephone number:** +61 2 97553747

### SECTION 2. Hazards Identification

**Based on available information, this material is not classified as hazardous according to criteria of Safe Work Australia.**

**Poison Schedule:** Unknown

### **DANGEROUS GOOD CLASSIFICATION**

Not classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

### SECTION 3. Composition Information

CHEMICAL ENTITY	CAS NO	PROPORTION
Silane, ethenyltrimethoxy-	2768-02-7	1 - <5% % (w/w)
1,2-Ethanediamine, N-[3-(trimethoxysilyl)propyl]-	1760-24-3	0.1 - <1% % (w/w)
Ingredients determined to be Non-Hazardous		Balance % (w/w)
		<hr/> 100%

### SECTION 4. First Aid Measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Phone Australia 131 126, New Zealand 0800 764 766).

**Inhalation:** Remove victim from exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. Seek medical advice if effects persist.

**Skin Contact:** If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. If swelling, redness, blistering or irritation occurs seek medical assistance.

**Eye contact:** If in eyes wash out immediately with water. In all cases of eye contamination it is a sensible precaution to seek medical advice.

**Ingestion:** Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water to drink. Never give anything by the mouth to an unconscious patient. If vomiting occurs give further water. Seek medical advice.

**PPE for First Aiders:** Wear gloves, apron, safety glasses. Available information suggests that gloves made from should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

**Notes to physician:** Treat symptomatically.

## **SECTION 5. Fire Fighting Measures**

**Hazchem Code:** Not applicable.

**Suitable extinguishing media:** If material is involved in a fire use water fog (or if unavailable fine water spray), alcohol resistant foam, standard foam, dry agent (carbon dioxide, dry chemical powder).

**Specific hazards:** Non-combustible material.

**Fire fighting further advice:** Not applicable.

## **SECTION 6. Accidental Release Measures**

### **SMALL SPILLS**

Wear protective equipment to prevent skin and eye contamination. Avoid inhalation of vapours or dust. Wipe up with absorbent (clean rag or paper towels). Collect and seal in properly labelled containers or drums for disposal.

### **LARGE SPILLS**

Clear area of all unprotected personnel. Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contamination and the inhalation of dust. Work up wind or increase ventilation. Cover with damp absorbent (inert material, sand or soil). Sweep or vacuum up, but avoid generating dust. Collect and seal in properly labelled containers or drums for disposal. If contamination of crops, sewers or waterways has occurred advise local emergency services.

**Dangerous Goods - Initial Emergency Response Guide No:** Not applicable

## **SECTION 7. Handling and Storage**

**Handling:** Avoid eye contact and repeated or prolonged skin contact. Avoid inhalation of dust.

**Storage:** Store in a cool, dry, well-ventilated place and out of direct sunlight. Store away from foodstuffs. Store away from incompatible materials described in Section 10. Store away from sources of heat and/or ignition. Keep container standing upright. Keep containers closed when not in use - check regularly for spills.

## **SECTION 8. Exposure Controls / Personal Protection**

National occupational exposure limits: No value assigned for this specific material by Safe Work Australia.

**Biological Limit Values:** As per the "National Model Regulations for the Control of Workplace Hazardous Substances (Safe Work Australia)" the ingredients in this material do not have a Biological Limit Allocated.

**Engineering Measures:** Natural ventilation should be adequate under normal use conditions.

**Personal Protection Equipment:** GLOVES, APRON, SAFETY GLASSES.

Personal protective equipment (PPE) must be suitable for the nature of the work and any hazard associated with the work as identified by the risk assessment conducted.

Wear gloves, apron, safety glasses. Available information suggests that gloves made from should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using. Hygiene measures: Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Wash hands prior to eating, drinking or smoking. Avoid contact with clothing. Avoid eye contact and repeated or prolonged skin contact. Avoid inhalation of dust. Ensure that eyewash stations and safety showers are close to the workstation location.

**Hygiene measures:** Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Wash hands prior to eating, drinking or smoking. Avoid contact with clothing. Avoid eye contact and repeated or prolonged skin contact. Avoid inhalation of dust. Ensure that eyewash stations and safety showers are close to the workstation location.

## **SECTION 9. Physical and Chemical Properties**

<b>Form:</b>	Paste
<b>Colour:</b>	Variable in colour, depending on the composition
<b>Odour:</b>	Characteristic odour
<b>Solubility in water:</b>	Insoluble
<b>Specific Gravity:</b>	1.5
<b>Relative Vapour Density (air=1):</b>	N Av
<b>Vapour Pressure (20 °C):</b>	N av
<b>Flash Point (°C):</b>	N av
<b>Flammability Limits (%):</b>	lower: Non combustible
<b>Autoignition Temperature (°C):</b>	N Av
<b>Boiling Point/Range (°C):</b>	N Av
<b>Total VOC (g/Litre):</b>	5%

(Typical values only - consult specification sheet)  
N Av = Not available, N App = Not applicable

## **SECTION 10. Stability and Reactivity**

**Chemical stability:** This material is thermally stable when stored and used as directed.

**Conditions to avoid:** Elevated temperatures and sources of ignition.

**Incompatible materials:** Oxidising agents.

**Hazardous decomposition products:** Oxides of carbon and nitrogen, smoke and other toxic fumes.

**Hazardous reactions:** No known hazardous reactions.

## **SECTION 11. Toxicological Information**

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

### **Acute Effects**

**Inhalation:** Material may be an irritant to mucous membranes and respiratory tract.

**Skin contact:** Contact with skin may result in irritation.

**Ingestion:** Swallowing can result in nausea, vomiting and irritation of the gastrointestinal tract.

**Eye contact:** May be an eye irritant. Exposure to the dust may cause discomfort due to particulate nature. May cause physical irritation to the eyes.

### **Acute toxicity**

**Inhalation:** This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients): LC50 > 5 mg/L

**Skin contact:** This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients): >2,000 mg/Kg bw

**Ingestion:** This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients): >2,000 mg/Kg bw

**Corrosion/Irritancy:** Eye: this material has been classified as not corrosive or irritating to eyes. Skin: this material has been classified as not corrosive or irritating to skin.

**Sensitisation:** Inhalation: this material has been classified as not a respiratory sensitiser. Skin: this material has been classified as not a skin sensitiser.

**Aspiration hazard:** This material has been classified as non-hazardous.

**Specific target organ toxicity (single exposure):** This material has been classified as non-hazardous.

### **Chronic Toxicity**

**Mutagenicity:** This material has been classified as non-hazardous.

**Carcinogenicity:** This material has been classified as non-hazardous.

**Reproductive toxicity (including via lactation):** This material has been classified as non-hazardous.

**Specific target organ toxicity (repeat exposure):** This material has been classified as non-hazardous.

## **SECTION 12. Ecological Information**

Avoid contaminating waterways.

**Acute aquatic hazard:** This material has been classified as non-hazardous. Acute toxicity estimate (based on

ingredients): >100 mg/L

**Long-term aquatic hazard:** This material has been classified as non-hazardous. Non-rapidly or rapidly degradable substance for which there are adequate chronic toxicity data available OR in the absence of chronic toxicity data, Acute toxicity estimate (based on ingredients): >100 mg/L, where the substance is not rapidly degradable and/or BCF < 500 and/or log Kow < 4.

**Ecotoxicity:** No information available.

**Persistence and degradability:** No information available.

**Bioaccumulative potential:** No information available.

**Mobility:** No information available.

### **SECTION 13. Disposal Considerations**

Persons conducting disposal, recycling or reclamation activities should ensure that appropriate personal protection equipment is used, see "Section 8. Exposure Controls and Personal Protection" of this SDS.

If possible material and its container should be recycled. If material or container cannot be recycled, dispose in accordance with local, regional, national and international Regulations.

### **SECTION 14. Transport Information**

#### **ROAD AND RAIL TRANSPORT**

Not classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

#### **MARINE TRANSPORT**

Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

#### **AIR TRANSPORT**

Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

### **SECTION 15. Regulatory Information**

**This material is not subject to the following international agreements:**

- Montreal Protocol (Ozone depleting substances)
- The Stockholm Convention (Persistent Organic Pollutants)
- The Rotterdam Convention (Prior Informed Consent)
- Basel Convention (Hazardous Waste)
- International Convention for the Prevention of Pollution from Ships (MARPOL)

This material/constituent(s) is covered by the following requirements:

- All components of this product are listed on or exempt from the Australian Inventory of Chemical Substances (AICS).

### **SECTION 16. Other Information**

Reason for issue: 5 Yearly Revision

This information was prepared in good faith from the best information available at the time of issue. It is based on the present level of research and to this extent we believe it is accurate. However, no guarantee



of accuracy is made or implied and since conditions of use are beyond our control, all information relevant to usage is offered without warranty. The manufacturer will not be held responsible for any unauthorised use of this information or for any modified or altered versions.

If you are an employer it is your duty to tell your employees, and any others that may be affected, of any hazards described in this sheet and of any precautions that should be taken.

Safety Data Sheets are updated frequently. Please ensure you have a current copy.