



## Technical Datasheet

# BETAMATE 5103-2

### Description / Application:

BETAMATE 5103-2 is a one component heat curing Epoxy paste adhesive. The material is readily pumped at ambient temperatures. It shows excellent adhesion to automotive steel, including coated steels, is resistant to degradation and to substrate corrosion on environmental ageing. The product is precurlable to induction and compatible with electrocoat paint process.

The mentioned datas are typical measured values.

All Dow Automotive products are primarily developed in co-ordination with the automobile manufacturers, according to their needs and their specifications; they are approved for the specific applications as defined by the customer.

The use of the product other than approved application have to be released in writing by the Technical Service of Dow Automotive.

### Technical Data:

Basis	epoxy resins
Colour	green
Density (23°C)	1.48 g/ml +/- 0.03
Solid Contents	> 98%
Extrusion rate (23°C) (3 bar, 3 mm aperture)	78 g/min.
Flash Point	245°C
Curing Condition	180°C / 30 min.
Tensile Strength (DIN 53 504)	51.0 MPa
Elongation at Break (DIN 53 504)	1.3 %
E-Modulus (DIN 53 504)	6'600 MPa
Lap Shear Strength (EN 1465) (CRS St 1203)	
0.75 mm	15.0 MPa
1.5 mm	20.0 MPa
T-Peel (CRS St 1203, 0.5 mm)	2,0 N/mm
Impact Peel	3,4 N/mm
Resistance to Chemicals	Very good
Bonding Surface Preparation	The material has been designed to tolerate some degree of surface oil contamination. Large excess of oil however, must be wiped away before application of adhesive. Certain oils are incompatible with adhesive and must be avoided.
Application Tool	Cartridges: hand-operated or pneumatic gun with mechanical piston Drums, pails: commercial heated pumping system with connection to automatic applicator, if required.
Cleaning	Uncured material can be removed with BETACLEAN 3510
Containers	Drums: 200 kg (re-usable drums with PE-liner) Pails: 25 kg, 50 kg (re-usable pails with PE-liner) Cartridges: 0,4 kg

## Shelf life

The product is a reactive one component adhesive and in common with all such materials does not have an infinite storage life. The shelf-life of the products is dependant on its thermal history, thus cool storage prolongs the product's life. Freshly manufactured material has the following expected life: stored at 23°C: 3 months  
(See "use before" date printed on container)

## Health and Safety

### - Treatment to break down cured adhesive

Due care must be taken to position the bond surfaces correctly, since cured joints can be broken down only by severe treatments which are harmful to certain materials. Separation of bond surfaces may be achieved by immersing the bonded part for several days in chloroform. (Immersion time is long because the high resistance of the DOW Automotive, epoxy adhesives to chemicals impedes penetration of the joint). Alternatively, the joint should be heated to a temperature above 200°C and the surfaces can be ground or burned off, or softened by immersion for several hours in dimethylformamide, phenol or cresol. These chemicals are dangerous and appropriate handling precautions should be obtained from suppliers and must be strictly followed.

### - Bulk Exotherm

Thermal analysis shows that the material starts to react when heated to 50°C or above. If the material is held in bulk the reaction is accompanied by a rapid build-up of exothermal heat. To avoid the risk of this bulk exotherm, containers of the material should in no circumstances be heated by means of localised high-temperature heat sources - e.g. hot plates or simple drum heaters. If heating a bulk quantity of the material is considered necessary, advice should be sought.

### - Caution

The adhesive resins are generally quite harmless to handle provided that certain precautions normally taken when handling chemicals are observed. The uncured materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should also be taken to prevent the uncured materials, from coming into contact with skin, since people with particularly sensitive skins may be affected. The wearing of impervious rubber or plastic gloves will normally be necessary; likewise the use of eye protection. The skin should be thoroughly cleansed at the end of each working period by washing with soap and warm water. The use of solvents is to be avoided. Disposable paper - not cloth towels - should be used to dry the skin. Adequate ventilation of the working area is recommended. For further and more detailed precaution measures see the Health and Safety Data Sheet.

## Dow Automotive Quality Management

Quality is our highest priority. Dow Automotive works with a highly modern Quality Management System which meets all international requirements of **QS 9000, VDA-6 and ISO 9001**.

### Dow Automotive AG

CH-8807 Freienbach  
Tel. +41(0)55416 81 11  
Fax +41(0)55416 82 20

### Dow Automotive (Italia) S.r.l

I-20010 Bareggio (MI)  
Tel. +39(0)2 90 36 11 66  
Fax +39(0)2 90 27 66 98

### Dow Automotive (France) S.A.

F-60130 Saint-Just en chaussee  
Tel. +33(0) 3 44 77 61 00  
Fax. +33(0) 3 44 77 61 61

### Dow Automotive (Deutschland) GmbH

D-35683 Dillenburg  
Tel. +49(0)2771 8 71 40  
Fax +49(0)2771 87 14 70

### Dow Automotive (España) S.A.

E-28816 Camarma de Esteruelas (Madrid)  
Tel. +34 (9)1 886 61 43  
Fax +34 (9)1 885 75 60

### Dow Automotive (UK) Ltd.

GB-Nuneaton-Warwickshire CV10 7QT  
Tel. +44 (0) 24 7635 72 00  
Fax. +44 (0) 24 7635 72 57