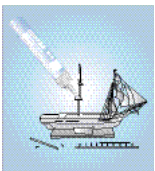
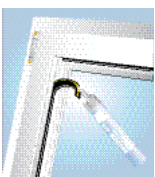


# Contact Cyanoacrylate Adhesives

- super fast
- economical
- versatile
- durable



## Contact

WEICON Contact Cyanoacrylate Adhesives are cold-curing one-component adhesives, free of solvents. They quickly polymerise by reacting with moisture both on the surfaces to be bonded and from the air, and cure under light pressure.

They will bond within seconds almost all materials to and among each other, such as:

- metals
- plastics
- glass
- ceramics
- wood
- leather
- natural and synthetic rubber



When using WEICON Contact Cyanoacrylate Adhesives, unlike in the case of welding and soldering, surfaces remain unaltered. No material stress occurs. Thus, more simple and rapid assembly is often possible, and auxiliary fixing devices are not necessary.

The resulting advantages are numerous:

- enormous time and, therefore, cost savings
- immediate on-processing of fixed parts possible
- high bond strength up to material fracture
- clean and optically appealing bondings



WEICON Contact Cyanoacrylate Adhesives provide high structural strength, with a temperature resistance from  $-50^{\circ}\text{C}$  ( $-58^{\circ}\text{F}$ ) to up to  $+135^{\circ}\text{C}$  ( $+275^{\circ}\text{F}$ ) and good levels of resistance to a lot of chemicals. In many instances, the cured bond joint proves to be harder than the material of the bonded parts (material fracture).

A wide range of product types is available for a variety of applications. The types differ chemically and by their viscosity.

### Ethyl ester based types

Due to the size of the molecules and the resulting anchoring points positioned far from each other, a higher elasticity of the bond joint is achieved. These types are recommended for bonding plastics and rubber.

### Alkoxy ethyl based types

Also with adhesives on this basis there is flexibility concerning the curing due to the similar molecule structure. However, its particular characteristic is its low odour and, therefore, user-friendly processability especially with assembly line manufacturing.

When cured, they are less sensitive to humidity and should be applied in those instances where the white "blooming" of the bond line is not tolerated for optical reasons.

### Methyl ester based types

Due to their small molecule structure and closely positioned anchoring points, these types are less flexible after curing. Therefore, they offer particularly good application possibilities for bonding metals.

Technical product information, a table showing the various different types and basic information on cyanoacrylate adhesives are available on the following pages.

Continuous development and adaptation to the latest demands based on practical experience and the environment guarantee, furthermore, constantly high quality standards.

Content	
Introduction	Page 2
Range of types	Page 3-5
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Activator and surface primer	Page 6
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Direction for application, storage and physiological properties	Page 8
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Product variants	Page 9

## Range of Types

### Ethyl ester based types:

#### VA 20

- low viscosity, < 20 mPa·s
- very fast-curing
- for bonding rubber (natural and synthetic) and plastics
- also for close-fitting metal/plastic bonds

#### VA 8312

- low viscosity, 20-40 mPa·s
- very fast-curing
- for bonding of numerous rubber materials (e.g. solid rubber or cellular rubber) and plastics
- especially suitable for bonding of EPDM elastomers
- also suitable for bonding polyolefines (PE-Polyethylene, PP Polypropylene) in combination with WEICON CA-Primer
- the ideal adhesive in combination with WEICON Filler for instant bonding and filling of cracks, gaps, holes and irregularities



#### VA 8406

- low viscosity, 20-50 mPa·s
- very fast-curing
- for bonding of numerous rubber materials (e.g. solid rubber or cellular rubber) and plastics
- especially suitable for bonding of EPDM elastomers, in cases where quick fastening is necessary
- also suitable for bonding polyolefines (PE-polyethylene, PP polypropylene), Teflon® and silicones in combination with WEICON CA-Primer

#### VA 100

- medium viscosity, 60-120 mPa·s
- somewhat longer curing
- universal type for bonding metals, plastics and rubber to and among each other
- the ideal adhesive also for the DIY sector

Teflon® = registered brand name E.I. DuPont

#### VA 1401

- medium viscosity, 100-150 mPa·s
- fast-curing
- good curing also on fabric, paper, cardboard, carton as well as foam rubber and elastomers with large porosities
- universal type for bonding metals, plastics and rubber to and among each other

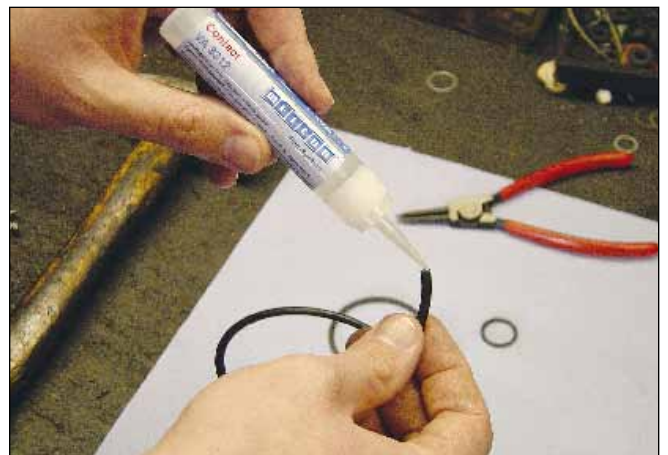


#### VA 300

- higher viscosity, 200-300 mPa·s
- longer curing
- suitable for absorbing and porous materials such as wood, cork, leather and ceramic
- also suitable for bonding metals, plastics and rubber to and among each other

#### VA 1500

- high viscosity, 1000-1500 mPa·s
- slow-curing
- for bonding rubber and plastics
- suitable for absorbing and porous materials such as wood, cork, leather and ceramic



#### Contact Gel

- pasty (highly thixotropic), 60000-90000 mPa·s
- very slow-curing (can be shortened when used in combination with WEICON Activator Spray)
- for porous surfaces and larger tolerances
- allows application on vertical surfaces
- allows re-alignment of the parts after contact
- the ideal adhesive for hobby and model making

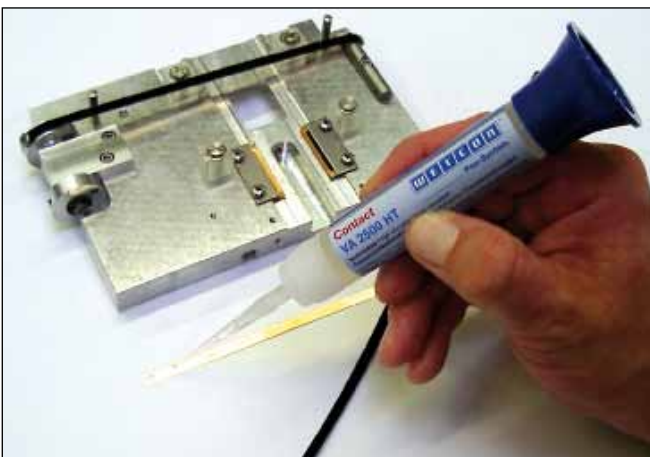
## VA 30 Black / VA 250 Black

- VA 30 Black – medium viscosity, 300 mPa·s, longer curing
- VA 250 Black - high viscosity, 2000-3000 mPa·s, slow curing
- types with residual elasticity after curing, therefore particularly suitable in ever changing climates
- not sensitive to longer term humidity
- temperature resistant from  $-50^{\circ}\text{C}$  ( $-58^{\circ}\text{F}$ ) to  $+135^{\circ}\text{C}$  ( $+275^{\circ}\text{F}$ )
- black, rubber-filled adhesives, ideal for bonding numerous rubber materials (e.g. solid rubber or cellular rubber), plastics as well as metal to plastic
- excellent peel and shock resistance

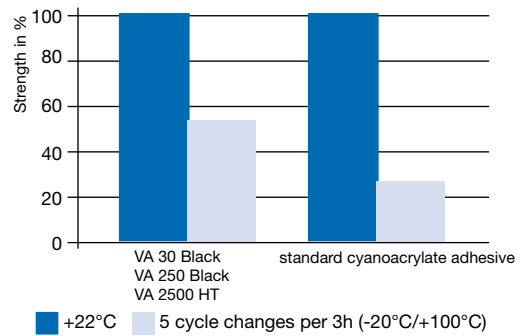


## VA 2500 HT

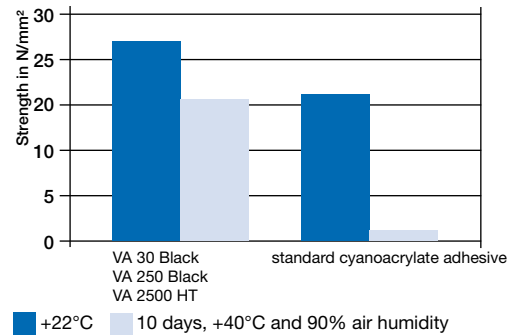
- high viscosity, 2000-3000 mPa·s
- slow-curing
- temperature resistant from  $-50^{\circ}\text{C}$  ( $-58^{\circ}\text{F}$ ) to  $+135^{\circ}\text{C}$  ( $+275^{\circ}\text{F}$ )
- residual elasticity after curing, therefore particularly suitable in ever changing climatic conditions
- not sensitive to longer term humidity
- excellent peel and shock resistance
- ideal for bonding various different rubber materials and plastics as well as metal to plastic



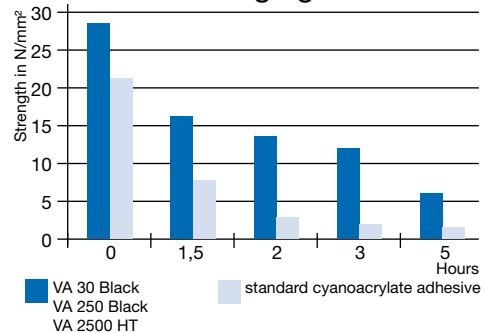
## Temperature Change Load



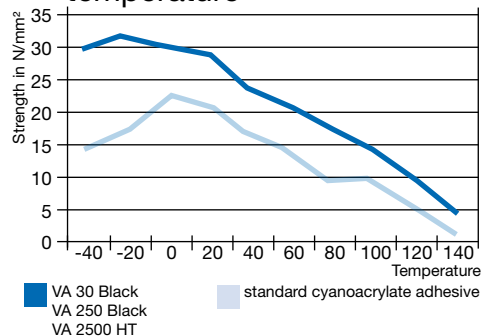
## Humid Climate Resistance



## Short-term Aging at +140°C



## Strength dependent on temperature



## Alcoxy ethyl based types:

### VA 1408

- low viscosity, 20-40 mPa-s
- fast-curing
- low odour when processing, therefore recommendable for assembly line manufacturing
- low “blooming” resulting in clean and optically appealing bonding joints
- for bonding numerous materials
- less sensitive to humidity when cured



### VA 1460

- medium viscosity, 120-200 mPa-s
- longer curing
- low odour and “blooming”
- for bonding numerous materials
- less sensitive to humidity when cured



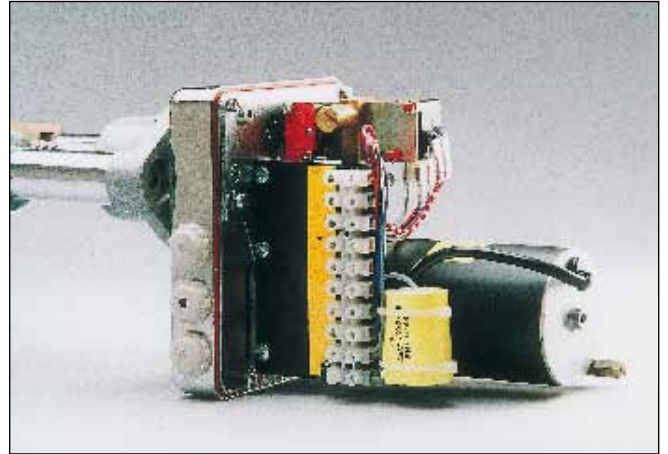
### VA 1403

- high viscosity, 1100-1800 mPa-s
- slow-curing
- low odour when processing, therefore recommendable for assembly line manufacturing
- low “blooming” resulting in clean and optically appealing bonding joints
- for bonding all sorts of materials
- less sensitive to humidity when cured

## Methyl ester based types:

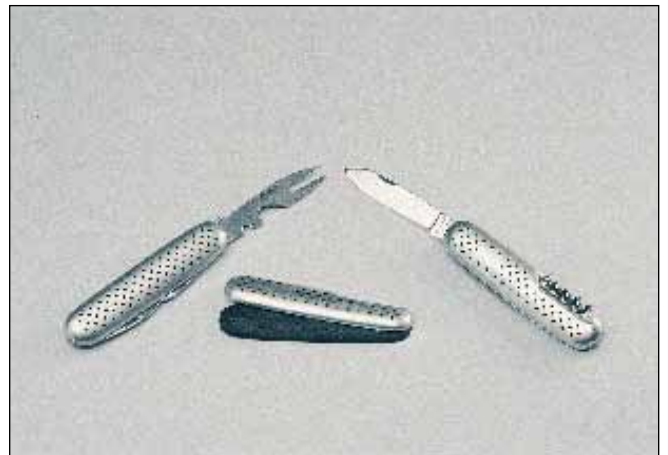
### VM 20

- low viscosity, 20-40 mPa-s
- very fast-curing
- for metal-metal combinations, particularly in assembly line manufacture for the bonding of close fitting parts



### VM 120

- medium viscosity, 100-130 mPa-s
- slower curing, a short-term re-alignment of parts is possible
- for all kinds of metal-bonding



### VM 2000

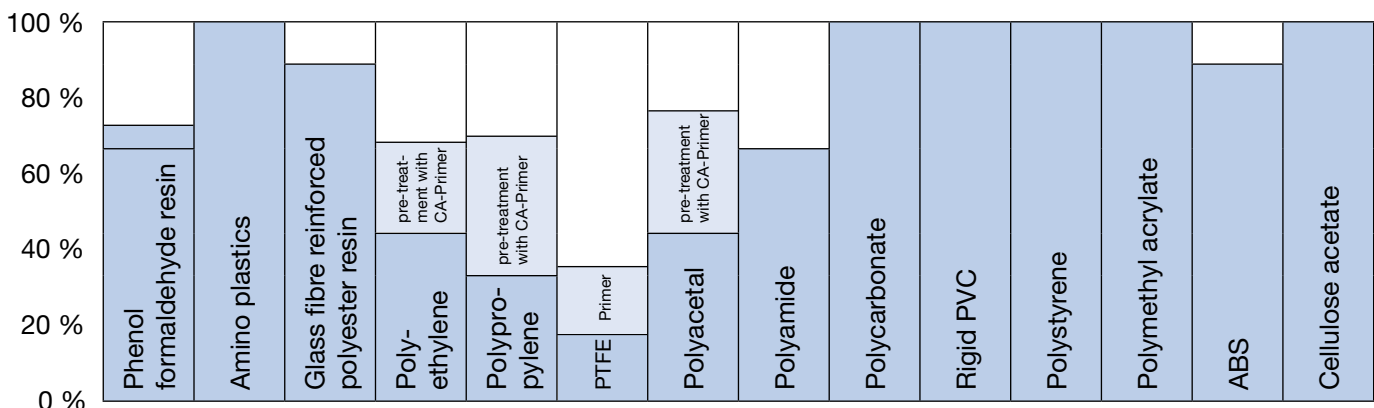
- high viscosity, 1700-2000 mPa-s
- slow-curing, allows re-alignment of parts
- also suitable for absorbing and porous materials
- for all kinds of metal-bonding

## Bonding of Plastics with WEICON Contact Cyanoacrylate Adhesives

Thermoplastics, like for example polystyrene, styrene butadiene, styrene acryl nitrile, polymethylmethacrylate, polycarbonate and polyvinylchloride as well as polyamide, which are most frequently used in industry, can be bonded well with the right WEICON Contact Adhesive. With plastics like polyethylene, polypropylene, polyacetal, polytetrafluor ethylene and other fluorite hydrocarbons with their natural adhesive aversive surfaces, an insufficient wetting of the surface takes place, and the adhesive cannot anchor itself to the surface structure. Only if these materials are pre-treated with WEICON Contact Primer, their surfaces are activated and therefore able to bond.

Duroplastics like melamine formaldehyde resin, urea formaldehyde resin, epoxy and polyester resins can be bonded well with WEICON Contact; phenal formaldehyde resins, however, can only be bonded under certain conditions. For each type of plastic a specific strength results; that is why test bonding should always be carried out.

### Combined tension and shear resistance (DIN 53283 / ASTM D 1002)



Test specimen DIN 53281:	100 x 25 x 1,5 mm
Pre-treatment:	cleaned with WEICON Cleaner S and surface made coarse
Adhesive:	WEICON Contact VA 8406
Bonding:	Normal climate DIN 50014, +23°C and 50% rel. air humidity
Overlapping:	12 mm
Test speed:	10 mm/min.

### Contact Activator

The Activator speeds up the curing process of WEICON Contact Cyanoacrylate Adhesives.

When applied to absorbing surfaces, like for example wood or foam etc., and all chemically-treated surfaces, like for example zinc galvanized metals etc., the Activator's effectiveness lasts approx. one minute. With non-absorbent surfaces the Activator's effectiveness lasts up to approx. twelve hours.

Use is recommendable with:

- highly viscous WEICON Contact types
- large thickness of the adhesive layer
- absorbing and porous surfaces
- passive materials (alkaline surfaces, like for example zinc coated metal parts).
- disadvantageous environmental conditions (low temperatures, too low air humidity < 30%)

### Contact Primer for Polyolefines

Without pre-treatment, many plastics are unable to bond or bond only under certain conditions. When these plastics are pre-treated with WEICON Contact Primer, their surface structure changes. Thereby the joining of plastics, like polyethylene (PE) and polypropylene (PP) belonging to the polyolefine group, which are usually difficult to bond, is made possible.

Even modern thermoplastic elastomers (TPE), Teflon® (PTFE) and related plastics as well as silicones, can be bonded when pre-treated with WEICON Contact Primer.

Thus, the following advantages arise:

- larger choice of usable plastics
- higher bonding strength with plastics which are usually difficult to bond
- cost savings as other mechanical methods of pre-treatment (scalping, low pressure plasma, heat treatment etc.) are not necessary

The effectiveness of WEICON CA-Primer begins approx. 2 minutes after application and lasts up to approx. 24 hours.

Teflon® = registered brand name E.I. DuPont



# Technical Data

WEICON Contact in liquid form																		
Product	VA 20	VA 8312	VA 8406	VA 100	VA 1401	VA 300	VA 1500	GEL	VA 2500 HT	VA 30 Black	VA 250 Black	VA 1408	VA 1460	VA 1403	VM 20	VM 120	VM 2000	
Ester type	Ethyl											Alkoxy			Methyl			
Condition / nature	colourless, clear liquid, VA 2500 HT opaque, VA 30 Black and VA 250 Black																	
Properties	particularly suitable for rubber and plastic bonding							pasty	particularly suitable for rubber and plastic bonding			low odour, low blooming			particularly suitable for bonding metals			
Viscosity at +20°C (m.Pas.) Brookfield	< 20	20-40	20-50	60-120	100-150	200-300	1000-1500	60000-90000	2000-3000	300	2000-3000	20-40	120-200	1100-1800	20-40	100-130	1700-2000	
Max. gap covering in mm **	0,10	0,10	0,10	0,15	0,15	0,15	0,20	0,20	0,20	0,20	0,20	0,10	0,15	0,20	0,10	0,15	0,20	
Specific gravity at +20°C (g/cm³)	1,04	1,05	1,05	1,06	1,06	1,07	1,08	1,08	1,06	1,06	1,06	1,06	1,02	1,10	1,10	1,10	1,12	
Flash point acc. to Abel-Pensky DIN 55213 in °C	87°C (+189°F)																	
Initial adhesion* in seconds	Aluminium <sup>1)</sup>	30-60	30-60	2-10	30-60	2-10	60-90	90-120	90-120	40-80	40-50	90-120	30-60	30-60	90-120	50-70	50-70	70-90
	Nora Test rubber <sup>2)</sup>	2-15	2-10	< 5	3-20	< 5	2-10	5-30	20-30	25-60	5-10	20-40	3-20	10-60	5-30	10-60	10-60	10-90
	Rigid PVC <sup>3)</sup>	5-60	5-30	2-10	10-60	2-10	10-60	10-120	40-80	25-100	5-10	40-80	10-30	20-150	10-120	30-120	30-120	30-150
Final strength in hours	24																	
WEICON Contact in cured state																		
Shear strength in N/mm² according to DIN 53283 (ASTM D 1002 psi)		VA 20	VA 8312	VA 8406	VA 100	VA 1401	VA 300	VA 1500	GEL	VA 2500 HT	VA 30 Black	VA 250 Black	VA 1408	VA 1460	VA 1403	VM 20	VM 120	VM 2000
	Sand-blasted steel	19 (2.750)	20 (2.900)	22 (3.200)	20 (2.900)	22 (3.200)	21 (3.050)			24 (3.450)	22 (3.200)	24 (3.450)	18 (2.600)			25 (3.600)		
	Sand-blasted Aluminium	14 (2.050)	14 (2.050)	16 (2.300)	15 (2.175)	16 (2.300)	15 (2.175)			18 (2.600)	18 (2.600)	18 (2.600)	12 (1.750)			19 (2.75 0)		
	Rigid PVC	12 (1.750)	13 (1.900)	14 (2.050)	13 (1.900)	14 (2.050)	13 (1.900)			13 (1.900)	14 (2.050)	13 (1.900)	7 (1.000)			12 (1.750)		
	ABS	11 (1.600)	12 (1.750)	13 (1.900)	12 (1.750)	13 (1.900)	12 (1.750)			12 (1.750)	11 (1.600)	12 (1.750)	10 (1.450)			11 (1.600)		
	PC	12 (1.750)	13 (1.900)	13 (1.900)	13 (1.900)	13 (1.900)	12 (1.750)			13 (1.900)	13 (1.900)	13 (1.900)	8 (1.150)			12 (1.750)		
	NBR	> 8 (1.150) (bonding exceeds strength of substrate)																
Temperature resistance	All types from -50°C (-58°F) to approx. +80°C (+176°F) (briefly up to +100°C (+212°F)), VA 2500 HT, VA 30 Black and VA 250 Black from -50°C (-58°F) to +135°C (+275°F)																	
Glass transition temperature	160°C - 170°C (+320°F - 338°F)																	
Refractive index n <sup>D20</sup>	1.49 (similar to glass) / for types VA 2500 HT, VA 30 Black and VA 250 Black not applicable																	
Linear thermal expansion coefficient ISO 11359 / ASTM D 696 (K <sup>-1</sup> )	80 x 10 <sup>-6</sup>																	
Specific forward resistance DIN 53482* / ASTM D 257 (Ω mm)	> 10 <sup>15</sup>																	
Dielectric strength DIN 53481* / ASTM D 149 (KV/mm)	25																	
Thermal conductivity ISO 8894-2 / ASTM C 177 (W/m•K)	0,1																	
Solubility	Dimethyl formamide, dimethyl sulfoxide, acetonitrile, alkali. Swelling is possible by long-time storage in ethyl acetate, acetone and methylene chloride.																	

\*Achieved in normal climate DIN 50014 +23°C (+73°F) and 50% relative air humidity. Within the given time period, handling strength can be reached.

\*\* These details are dependent on the type of material to be bonded and its properties

\*\*\* Following the DIN-norm measured on bonding joints.

1) Aluminium. Type Al Cu Mg 2pl., not pre-treated

2) Nora test rubber, smoothed

3) Rigid PVC Trovidur® EN, not pre-treated

## Fast Bonding Kit

The practical adhesive set for professional and fast bonding of wood of all types, e.g.:

- medium thick fibreboard
- Balsa-wood
- dense fibreboard
- chipboard (work top)
- compressed cardboard
- original wood (solid wood)
- plywood etc.

Also suitable for porous and absorbent metal, rubber and plastic surfaces.

Directions of use:

- ensure clean, dry, dust-free and degreased surfaces
- apply adhesive either drop by drop or in one coat on the surface depending on its size
- spray the Activator-Spray over the whole surface of the other part
- position the parts and hold together applying gentle pressure for approx. ten seconds. Excess adhesive which comes out of the bond line can be hardened by additionally spraying with the Activator
- depending on the properties of the material and the surfaces, the joint can be stressed within 45-60 seconds.



## Pen-System

WEICON Pen-System – well-known WEICON Contact Cyanoacrylate Adhesives in a new design.

The newly developed Pen-System lies in your hand like a pen and therefore guarantees:

- easy application
- clean processing
- improved dosing



## Contact Filler

Fillers for instant bonding and filling-in of clefts and cracks, holes as well as unlevelled surfaces in conjunction with WEICON Contact Adhesive VA 8312.

Contact Filler should be applied in layers:

adhesive - filler – adhesive.

After curing is completed, the material can be sanded and overpainted.



# Type Selection Table

	VA 20	VA 8312	VA 8406	VA 100	VA 1401	VA 300	VA 1500	GEL	VA 2500 HT	VA 30 Black	VA 250 Black	VA 1408	VA 1460	VA 1403	VM 20	VM 120	VM 2000
Metal	+	+	+	++	++	+	+	+	+	+	+	+	+	+	++	++	++
Plastic*	++	++	++	++	++	++	++	+	++	++	++	++	++	++	+	+	+
Rubber	++	++	++	++	++	+	++	+	++	++	++	++	++	+	+	+	+
EPDM Elastomers	+	+	++	+	++	+	+		+	+	+	+	+	+			
Wood	+			+	+	++	+	+	+	+	+	+		++			
Balsa-wood		+	+	+	+	+	+	++	+	+	+	+		++			
Glass / Ceramic	+		+	++	++	++	+	++	+	+	+	++	+	+			
Leather		+		++	++	++	++	++	+	+	+	+	+	++			

suitable (+) highly suitable (++)

In line with the type recommendations above, the bonding of two different materials, like for example metal/rubber and metal/plastic, is also possible.

\* see table page 6 (combined tension and shear resistance DIN 52283)

## Directions for use

- To ensure a perfect bonding, the surfaces to be joined must be clean and dry (to clean and degrease use e.g. WEICON Cleaner S).
- Smooth surfaces should be mechanically roughened.
- Apply WEICON Contact Cyanoacrylate Adhesive only on one of the surfaces to be bonded.
- The bond line should be between 0.05 mm and max. 0.2 mm in thickness. Otherwise complete hardening cannot be guaranteed.
- For bonding large surfaces WEICON Contact Cyanoacrylate Adhesive should be applied drop by drop to avoid inner tensions.
- WEICON Contact Cyanoacrylate Adhesives are very economical. One drop is sufficient to cover approx. 3 - 5 cm<sup>2</sup> of bonded surface.
- The parts to be joined should be bonded in an atmosphere of 40 - 80 % relative humidity. In conditions of below 40%, the cure will be considerably slowed or even inhibited. With a relative air humidity of more than 80% or with basic substrates (e.g. glass), shock-curing can occur. In such cases, some materials show a drop in bond strength of 10 - 15 %, due to inner tensions in the bond line.
- Basic-reacting surfaces (pH-value >7) will speed up the cure whereas acidic-reacting surfaces will retard and, under extreme conditions, completely inhibit the polymerization.

## Conversions

(°C x 1.8) +32 = °F  
 kV/mm x 25.4 = V/mil  
 mm / 25.4 = inches  
 µm / 25.4 = mil  
 N x 0.225 = lb  
 N/mm x 5.71 = lb/in  
 N/mm x 5.71 = pli  
 N/mm<sup>2</sup> x 145 = psi

MPa x 145 = psi  
 MPa x 0.145 = KSI  
 mPa·s = cP  
 N·m x 8.851 = lb·in  
 N·m x 0.738 = lb·ft  
 N·mm x 0.142 = oz·in  
 kg x 2.2046 = lb

## Physiological Properties

### Health and safety at work

Physiologically, WEICON Contact Cyanoacrylate Adhesives may be considered as essentially harmless. However, ensure sufficient ventilation of workplaces to cope with the adhesive's typical vapours.

Vapours of WEICON Contact may cause irritation of the mucous membranes and the eyes. Avoid contact with skin and eyes (wear gloves and protective goggles). The use of WEICON Hand Protective Foam prevents skin irritation and hand cleaning problems

## Storage

WEICON Contact Cyanoacrylate Adhesives should always be stored in a cool, dry and dark place. The shelf life is at least 9 months if stored at room temperature (18 - 25°C). If stored at +5°C (e.g. in a refrigerator), the shelf life can be extended to 12 months.





# Contact

## Cyanoacrylate Adhesives

- super fast
- economical
- versatile
- durable

Distributed by:



The specifications and recommendations given in this brochure must not be seen as guaranteed product characteristics. They are based on our laboratory tests and on practical experiences. Since individual application conditions are beyond our knowledge, control and responsibility, this information is provided without any obligation. We do guarantee the continuously high quality of our products. However, our adequate laboratory and practical tests to find out if the product in question meets the required properties are recommended. A claim cannot be derived from them. The user bears the only responsibility for non-appropriate or other than specified applications.

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