Technical Data Sheet
January 2021

PX681C

A general-purpose two-part epoxy adhesive with excellent adhesion

Application

- Bonding of most plastics, Metals, Wood and GRP

Key Properties

- Long pot life
- Excellent adhesion
- Impact resistant
- Good chemical resistance

Description

- Basic Two-component epoxy adhesive
- Resin RX681C
- Hardener HX681C

Physical Data (approx. – values)	**Colour**	**Specific Gravity**	**Viscosity (mPas) @ 25°C**
Resin	Clear Black	1.17 1.18	1000 - 4000
Hardener	Amber	0.97	200-300
Composite	Amber Black	1.06-1.07 1.07-1.08	800-1500

Cure Schedule (1.5cm bead)	**Working Life**	**Gel Time**	**Tack Free**	**Light Handling**	**Full Cure**
Temperature	(minutes)	(minutes)	(hours)	(hours)	(hours)
RT	120	210	7	24	48
Usable life in nozzle	240				

Cure Schedule (300g)	**Working Life**	**Gel Time**	**Light Handling**	**Full Cure**
Temperature	(minutes)	(minutes)	(hours)	(hours)
10°C	65-75	-	48	96
RT*	55-65	35-45	16	32
30°C	25-35	-	8	16
60°C	-	-	2	4
80°C	-	-	1	2

*RT is defined as 20-25°C *2mm cross sectional area
Cure time will depend on cross sectional area, ambient conditions and mixing method. The above data is given as a guide only. Hotter temperatures may be used for faster cure but will result in higher post cure shrinkage and higher cure exotherm. Experimentation and testing is suggested to avoid side effects.

Processing	**Black**	**Natural**
	Mix ratio by weight 1.05:1 (RX: HX) Mix ratio by volume 0.86:1 (RX: HX) Mixed SG = 1.07 Product can also be used at 1:1 by volume Mix ratio by weight 1.22:1 (RX: HX) Mix ratio by volume 1:1 (RX: HX) Mixed SG = 1.08	Mix ratio by weight 1:1 (RX: HX) Mix ratio by volume 0.83:1 (RX: HX) Mixed SG = 1.06 Product can also be used at 1:1 by volume Mix ratio by weight 1.21:1 (RX: HX) Mix ratio by volume 1:1 (RX: HX) Mixed SG = 1.07

Typical Properties	**Result**	**Unit**
Hardness	65 - 75	Shore D
Operating Temperature	-55°C to +120	°C (Application and geometry dependant)
Compressive Strength	64	MN/m^2
Surface Resistivity	1.6×10^{12}	ohm.cm
Dielectric strength	17	kV/mm
Tensile strength	44	MPa
Thermal Conductivity	0.3	W/mK
Elongation at Break	2	%
Solids Content	100	%
VOC	None Present	
Glass transition	~50	°C

Lap Shear Adhesion			
Aluminium to Aluminium	7.6 MPa	ABS to ABS (1)	5.5 MPa
Copper to Copper	6.1 Mpa	Nylon 6 to Nylon 6	2.5 MPa
Stainless Steel	9.0 MPa	Acrylic to Acrylic	2.3 MPa

(1) Substrate failure

Approvals	
RoHS compliant	Yes
UL94 V-0	No
REACH (SVHC concentration)	Refer to SDS

Packaging

Available in Twin Cartridges, Twinpacks, Bulk, Kits & Sets

Availability

Available through distribution and www.resins-online.com

Cartridges – Part Numbers	
PX681C/BK/050TC	PX681C/NC/050TC
PX681C/BK/400TC	PX681C/NC/200TC
	PX681C/NC/400TC

It is essential for best results that the cartridge is 'balanced' before use to ensure correct mixing.
Loading the cartridge into the gun before attaching the mixer element and pumping the gun to push a small amount of the contents forward will achieve this. Wipe the excess from the cartridge tip and add the static mixer. The cartridge is now ready for use.

Twinpacks – Part Numbers	
PX681C/NC/025	PX681C/NC/250

Twinpacks are pre-weighed resin and hardener components contained in a tough flexible film, separated by a removable clip and rail.
Once the clip and rail is removed the resin and hardener is thoroughly mixed within the bag and is immediately ready for use.
Mixing will normally take ~ 2 minutes due to the viscosity; but pay special attention to the corners.
Twinpacks are ideal for small to medium production runs, prototyping and on-site or field use.
The twinpack weight/volume may also be tailored to a specific size on request.
For further details please visit www.robnor-resinlab.com

Bulk Materials – Part Numbers	
RX681C/NC/1KG	HX681C/NC/1KG
RX681C/NC/225KG	HX681C/NC/20KG
RX681C/NC/225KG	HX681C/NC/140KG
	HX681C/NC/190KG

Both resin and hardener are supplied in 5kg, 25kg and 200ltr drums and fully evacuated and ready for use.
Care should be taken to ensure when mixing the resins air is not entrained in the mixture.
If this is unavoidable the mixed resin and hardener should be re-evacuated before dispensing.
The bulk resin and hardener materials can be dispensed from suitable dispensing machinery, details provided by Fluid Research on request.

Kits and Sets – Part Numbers	
PX681C/BK/10KGKIT	PX681C/NC/2KGKIT

Kits and Sets are provided in separate containers to the correct ratio.
In Kit form, pour the contents of the small container into the larger container and use it as a mixing vessel.
Stir well using an appropriate mixer until homogeneous.

Note: Incomplete mixing will be characterised by erratic or partially incomplete cure even after extended time periods.

Cleaning

All equipment contaminated with mixed material should be cleaned before the material has hardened.
TS130 is a suitable non-flammable cleaning agent, although other solvents may be found suitable.
TS130 will also remove cured material provided it can soak for several hours.

Storage and Shelf Life

24 months at 25 °C

Many epoxy resin systems are prone to crystallization as epoxy resin is a super-cooled fluid. This condition may give the product a gritty or grainy appearance (or hazy in clear products). Products in this state will not usually cure to normal and expected properties. In extreme cases it may appear solid and cured. Fluctuating temperatures (within 5 to 50 °C) aggravate this phenomenon. Heating the individual component to 50 to 60 °C while stirring can usually restore products to original state. Storage at 25 +/- 10 °C is optimum for most products

Some epoxy systems are prone to settling due to high filler content and should be inverted every two to three weeks to reduce the accumulation of the fillers on the bottom of the containers.

Inventory should be rotated on a FIFO (first in, first out) basis.

Health and Safety

Please refer to RX/HX681C Health and Safety data or our Technical Service Department for individual/specific advice.

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