Anglian Injection Cartridge

Features and Benefits

- *Good bond strength with High load resistance*
- *Used with all grades of threaded rod*
- *Used in concrete and masonry*
- *Fast gelling and curing*
- *Used in dry and wet conditions*
- *Also suitable as a filler for gap and crack filling*
- *Economical fixing resin*
- *Extremely versatile*
- *Close edge distance and small spacing*
- *Manual cleaning up to 20mm diameter and embedment depths of 240mm*
- *Independently tested and approved (ITB Approval / Socotec Approval)*

Contents

Shelf Life and Storage

This product should be stored between +5˚C & +25˚C.
The Shelf life of the product is 18 months from the manufacture date.

Anglian Injection Cartridge

Product Description

Anglian Injection Cartridge is a 2 component high strength 10:1 ratio chemical anchoring resin system. It is designed as a fast curing high stength resin fixing and anchor for medium loads and is particularly suitable for lower strength substrates and lower load fixings due to its excellent value.

Specific Benefits

- High loads possible
- Studs and other fixings
- Crack and gap filling
- Economical fixing resin

Approvals

- ETA 21/0866 - ETAG 029 Hollow Wall / Masonry Installations
- Tested according to LEED 2009 EQ c4.1, SCAQMD rule 1168 (2005).
- A+ Rating VOC content

Loads, Edge and Spacings based on Characteristic bond strengths - Showing steel failure

	Characteristic Resistance (kN)		Design Resistance (kN)		Recommended Load (kN)		Characteristic distances (mm)			Min Edge and Spacing (mm)
Size (mm)	Tension N_{rk}	Shear V_{rk}	Tension N_{rd}	Shear V_{rd}	Tension N_{rec}	Shear V_{rec}	Edge $C_{cr,N}$	Spacing $S_{cr,N}$	Edge $C_{cr,V}$	C_{min}, S_{min}
8	15.12		8.40		6.00					
	19.00	9.00	11.20	7.20	8.00	5.14	80	160	80	40
	19.00		12.70		9.07					
10	18.90		10.50		7.50					
	28.26	15.00	15.70	12.00	11.21	8.57	100	200	90	50
	30.20		20.10		14.36					
12	26.50		14.72		10.52					
	41.40	21.00	23.00	16.80	16.43	12.00	120	240	110	60
	43.80		29.20		20.86					
16	38.52		21.40		15.29					
	60.30	39.00	33.50	31.20	23.93	22.29	160	320	125	80
	81.60		54.40		38.86					
20	45.20		25.11		17.94					
	85.50	61.00	47.50	48.80	33.93	34.86	200	400	180	100
	127.40		84.90		60.64					
24	56.50		31.39		22.42					
	118.80	88.00	66.00	70.40	47.14	50.29	225	450	220	120
	183.60		122.40		87.43					
30	67.85		37.69		26.92					
	158.40	142.50	88.00	114.00	62.86	81.43	260	520	280	150
	292.00		194.50		138.93					

Nominal Embedment (mm)	Hole Diameter concrete (mm)	Hole Diameter fixture (mm)	Max Torque (Nm)
60			
80	10	9	10
160			
60			
90	12	12	20
200			
70			
110	14	14	40
240			
80			
125	18	18	80
320			
90			
170	22	22	120
400			
100			
210	28	26	160
480			
120			
280	35	32	200
600			

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Anglian Injection Cartridge

Design Resistance used with various stud strengths, material and rebar.

5.8 Grade Steel Studding

Stud Diameter	Hole Diameter	Embedment Depth hef																				h_{ef} failure	$F_{d,s}$ design load
(mm)	(mm)	60	70	80	90	100	110	120	130	140	160	200	240	280	320	400	480	540	600	660	720	(mm)	(kN)
8	10	8.4	9.8	11.2	12.6	12.7																91	12.7
10	12	10.5	###	14.0	15.7	17.5	19.2	20.1														115	20.1
12	14		###	16.8	18.9	20.9	23.0	25.1	27.2	29.2												140	29.2
16	18			21.4	24.1	26.8	29.5	32.2	34.9	37.5	42.9	53.6	54.4									203	54.4
20	22			22.3	25.1	27.9	30.7	33.5	36.3	39.1	44.7	55.9	67.0	78.2	84.9							304	84.9
24	28					31.4	34.6	37.7	40.8	44.0	50.3	62.8	75.4	88.0	101	122						389	122.4
27	30						36.3	39.6	42.9	46.2	52.8	66.0	79.2	92.4	106	132.0	158.4	159				482	159.1
30	35							37.7	40.8	44.0	50.3	62.8	75.4	88.0	101	125.7	150.8	169.7	188.5			619	194.5
Depth (mm)		60	70	80	90	100	110	120	130	140	160	200	240	280	320	400	480	540	600	660	720		

steel failure

8.8 Grade Steel Studding

Stud Diameter	Hole Diameter	Embedment Depth hef																				h_{ef} failure	$F_{d,s}$ design load
(mm)	(mm)	60	70	80	90	100	110	120	130	140	160	200	240	280	320	400	480	540	600	660	720	(mm)	(kN)
8	10	8.4	9.8	11.2	12.6	14.0	15.4	16.8	18.2	19.5												140	19.5
10	12	10.5	###	14.0	15.7	17.5	19.2	20.9	22.7	24.4	27.9	30.9										177	30.9
12	14		###	16.8	18.9	20.9	23.0	25.1	27.2	29.3	33.5	41.9	45.0									215	45.0
16	18			21.4	24.1	26.8	29.5	32.2	34.9	37.5	42.9	53.6	64.3	75.1	83.7							312	83.7
20	22			22.3	25.1	27.9	30.7	33.5	36.3	39.1	44.7	55.9	67.0	78.2	89.4	111.7						468	130.7
24	28					31.4	34.6	37.7	40.8	44.0	50.3	62.8	75.4	88.0	101	125.7	150.8					599	188.3
27	30						36.3	39.6	42.9	46.2	52.8	66.0	79.2	92.4	106	132.0	158.4	178.2				742	244.8
30	35							37.7	40.8	44.0	50.3	62.8	75.4	88.0	101	125.7	150.8	169.7	188.5			952	299.2
Depth (mm)		60	70	80	90	100	110	120	130	140	160	200	240	280	320	400	480	540	600	660	720		

cont.

Anglian Injection Cartridge

Design Resistance used with various stud strengths, material and rebar.

10.9 Grade Steel Studding

10.9 grade studding

Stud Diameter	Hole Diameter	Embedment Depth hef																				h_{ef} failure	$F_{d,s}$ design load
(mm)	(mm)	60	70	80	90	100	110	120	130	140	160	200	240	280	320	400	480	540	600	660	720	(mm)	(kN)
8	10	8.4	9.8	11.2	12.6	14.0	15.4	16.8	18.2	19.6	22.3											195	27.2
10	12	10.5	12.2	14.0	15.7	17.5	19.2	20.9	22.7	24.4	27.9	34.9										247	43.1
12	14		14.7	16.8	18.9	20.9	23.0	25.1	27.2	29.3	33.5	41.9	50.3									299	62.6
16	18			21.4	24.1	26.8	29.5	32.2	34.9	37.5	42.9	53.6	64.3	75.1	85.8							435	116.6
20	22			22.3	25.1	27.9	30.7	33.5	36.3	39.1	44.7	55.9	67.0	78.2	89.4	111.7						652	182.0
24	28					31.4	34.6	37.7	40.8	44.0	50.3	62.8	75.4	88.0	101	125.7	150.8					835	262.2
27	30						36.3	39.6	42.9	46.2	52.8	66.0	79.2	92.4	106	132.0	158.4	178.2				1034	341.0
30	35							37.7	40.8	44.0	50.3	62.8	75.4	88.0	101	125.7	150.8	169.7	188.5			1326	416.7
Depth (mm)		60	70	80	90	100	110	120	130	140	160	200	240	280	320	400	480	540	600	660	720		

A4-70 Stainless Steel Studding

Stud Diameter	Hole Diameter	steel failure; Embedment Depth hef																				h_{ef} failure	$F_{d,s}$ design load
(mm)	(mm)	60	70	80	90	100	110	120	130	140	160	200	240	280	320	400	480	540	600	660	720	(mm)	(kN)
8	10	8.4	9.8	11.2	12.6	13.7																98	13.7
10	12	10.5	12.2	14.0	15.7	17.5	19.2	20.9	21.7													124	21.7
12	14		14.7	16.8	18.9	20.9	23.0	25.1	27.2	29.3	31.6											151	31.6
16	18			21.4	24.1	26.8	29.5	32.2	34.9	37.5	42.9	53.6	58.8									219	58.8
20	22			22.3	25.1	27.9	30.7	33.5	36.3	39.1	44.7	55.9	67.0	78.2	89.4	91.7						328	91.7
24	28					31.4	34.6	37.7	40.8	44.0	50.3	62.8	75.4	88.0	101	125.7	132.1					421	132.1
27	30						36.3	39.6	42.9	46.2	52.8	66.0	79.2	80.2							1	243	80.2
30	35							37.7	40.8	44.0	50.3	62.8	75.4	88.0	98.1						1	312	98.1
Depth (mm)		60	70	80	90	100	110	120	130	140	160	200	240	280	320	400	480	540	600	660	720		

*1 = Tensile strength 500N/mm2

cont.

Anglian Injection Cartridge

Design Resistance used with various stud strengths, material and rebar.

A4-80 Stainless Steel Studding

Stud Diameter	Hole Diameter	Embedment Depth hef																			h_{ef} failure	$F_{d,s}$ design load
(mm)	(mm)	60	70	80	90	100	110	120	130	140	160	200	240	280	320	400	480	540	600	660	720	(mm)	(kN)
8	10	8.4	9.8	11.2	12.6	14.0	15.4	15.7														112	15.7
10	12		12.2	14.0	15.7	17.5	19.2	20.9	22.7	24.4	24.8											142	24.8
12	14		14.7	16.8	18.9	20.9	23.0	25.1	27.2	29.3	33.5	36.1										172	36.1
16	18			21.4	24.1	26.8	29.5	32.2	34.9	37.5	42.9	53.6	64.3	67.2								251	67.2
20	22			22.3	25.1	27.9	30.7	33.5	36.3	39.1	44.7	55.9	67.0	78.2	89.4	104.8						375	104.8
24	28					31.4	34.6	37.7	40.8	44.0	50.3	62.8	75.4	88.0	100.5	125.7	132.1					421	132.1
27	30						36.3	39.6	42.9	46.2	52.8	66.0	79.2	80.2							2	243	80.2
30	35							37.7	40.8	44.0	50.3	62.8	75.4	88.0	98.1						2	312	98.1
Depth (mm)		60	70	80	90	100	110	120	130	140	160	200	240	280	320	400	480	540	600	660	720		

High bond reinforcing bars Fyk=500N/mm2

Rebar Diameter	Hole Diameter	Embedment Depth hef																				h_{ef} failure	$F_{d,s}$ yield load
(mm)	(mm)	60	70	80	90	100	110	120	130	140	160	200	240	280	320	400	500	560	640	720	800	(mm)	(kN)
8	10	7.5	8.8	10.1	11.3	12.6	13.8	15.1	16.3	17.6	20.1											216	21.9
10	12	9.4	11.0	12.6	14.1	15.7	17.3	18.9	20.4	22.0	25.1	31.4										281	34.1
12	14		11.9	13.6	15.3	17.0	18.7	20.4	22.1	23.8	27.1	33.9	40.7									379	49.2
16	20			16.1	18.1	20.1	22.1	24.1	26.1	28.2	32.2	40.2	48.3	56.3	64.3							549	87.4
20	25			17.6	19.8	22.0	24.2	26.4	28.6	30.8	35.2	44.0	52.8	61.6	70.4	88.0						805	136.6
25	30					23.6	25.9	28.3	30.6	33.0	37.7	47.1	56.6	66.0	75.4	94.3	117.8					1107	196.5
28	35						24.2	26.4	28.6	30.8	35.2	44.0	52.8	61.6	70.4	88.0	110.0	123.2				1429	267.8
32	40								30.1	32.4	37.0	46.3	55.5	64.8	74.0	92.5	115.6	129.5	148.0			1783	349.7
Depth (mm)		60	70	80	90	100	110	120	130	140	160	200	240	280	320	400	500	560	640	720	800		

*1 = Tensile strength 500N/mm2

*2 = Tensile strength 700N/mm2

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Anglian Injection Cartridge

Bond Strength Factors

Influence of concrete strength on combined pull out and concrete cone resistance

Concrete Strength N/mm2	C15/20	C20/25	C25/30	C30/37	C35/45	C40/50	C45/55	C50/60
Non-Cracked fc =	0.97	1.00	1.02	1.04	1.07	1.10	1.12	1.15

Influence of environmental conditions in non cracked concrete

		M8	M10	M12	M16	M20	M24	M30
Temp I 40°C / 24°C	Dry and Wet	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Temp II 80°C / 50°C	Dry and Wet	0.90	0.88	0.87	0.86	0.85	0.84	0.82

Select concrete strength and environmental condition and apply to bond strength table on page 4

Anglian Injection Cartridge

Characteristic and Design Load resistances for REBAR based on characteristic bond strengths for hef 4d (min embedment) to 20d

	Non Cracked Concrete						Cracked Concrete						
	Characteristic Resistance (kN)		Design Resistance (kN)		Recommended Load (kN)		Characteristic Resistance (kN)		Design Resistance (kN)		Recommended Load (kN)		Nominal Embed-ment
Rebar	Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear	(mm)
Ø	N_{rk}	V_{rk}	N_{rd}	V_{rd}	N_{rec}	V_{rec}	N_{rk}	V_{rk}	N_{rd}	V_{rd}	N_{rec}	V_{rec}	
8	13.50	13.95	7.50	9.30	5.36	6.64	Not Applicable		Not Applicable		Not Applicable		60
	18.18		**10.10**		**7.21**								**80**
	36.18		20.10		14.36								160
10	16.92	21.45	9.40	14.30	6.71	10.21							60
	25.38		**14.10**		**10.07**								**90**
	56.52		31.40		22.43								200
12	21.42	31.05	11.90	20.70	8.50	14.79							70
	33.66		**18.70**		**13.36**								**110**
	73.26		40.70		29.07								240
16	28.98	55.50	16.10	37.00	11.50	26.43							80
	45.18		**25.10**		**17.93**								**125**
	115.74		64.30		45.93								320
20	35.64	86.55	19.80	57.70	14.14	41.21							90
	67.32		**37.40**		**26.71**								**170**
	158.40		88.00		62.86								400
25	42.48	135.00	23.60	90.00	16.86	64.29							100
	89.10		**49.50**		**35.36**								**210**
	212.04		117.80		84.14								500
28	43.56	168.75	24.20	112.50	17.29	80.36							110
	110.88		**61.60**		**44.00**								**280**
	221.76		123.20		88.00								560
32	54.18	220.95	30.10	147.30	21.50	105.22							130
	133.20		**74.00**		**52.86**								**320**
	266.40		148.00		105.71								640

Table notes : see back page

Anglian Injection Cartridge

Bond Strength Factors - REBAR

Influence of concrete strength on combined pull out and concrete cone resistance

Concrete Strength N/mm2 (MPa)	C15/20	C20/25	C25/30	C30/37	C35/45	C40/50	C45/55	C50/60
non cracked fc =	0.97	1.00	1.02	1.04	1.07	1.10	1.12	1.15

Influence of environmental conditions in non cracked concrete

		Ø 8	Ø 10	Ø 12	Ø 16	Ø 20	Ø 25	Ø 28	Ø 32
Temp I 40°C / 24°C	Dry and Wet	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Temp II 80°C / 50°C	Dry and Wet	0.90	0.90	0.88	0.88	0.86	0.86	0.84	0.84

Table notes : see back page

Anglian Injection Cartridge

Material Properties for grades of threaded rod

	Stud Grade 8.8		Stud Grade 10.9		Stud Grade A4-70		Stud Grade A4-80	
Stud Diameter	$N_{rk,\,s}$	$N_{rd,\,s}$	$N_{rk,\,s}$	$N_{rd,\,s}$	$N_{rk,\,s}$	$N_{rd,\,s}$	$N_{rk,\,s}$	$N_{rd,\,s}$
(mm)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)
M8	29.2	19.5	38.1	27.2	25.6	13.7	29.2	15.6
M10	46.4	30.9	60.3	43.1	40.6	21.7	46.4	24.8
M12	67.4	44.9	87.7	62.6	59.0	31.6	67.4	36.0
M16	125.6	83.7	163.0	116.4	109.9	58.8	125.7	67.2
M20	196.1	130.7	255.0	182.1	171.5	91.7	196.0	104.8
M24	282.5	188.3	367.0	262.1	247.1	132.1	293.0	132.1
M30	448.8	299.2	583.0	416.4	280.5	150.0	392.7	210.0

	Stud Grade 8.8		Stud Grade 10.9		Stud Grade A4-70		Stud Grade A4-80	
Stud Diameter	$V_{rk,\,s}$	$V_{rd,\,s}$	$V_{rk,\,s}$	$V_{rd,\,s}$	$V_{rk,\,s}$	$V_{rd,\,s}$	$V_{rk,\,s}$	$V_{rd,\,s}$
(mm)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)
M8	14.6	11.7	19.0	15.2	12.8	8.2	14.6	9.4
M10	23.2	18.6	30.2	24.1	20.3	13.0	23.2	14.9
M12	33.7	27.0	43.8	35.1	29.5	18.9	33.7	21.6
M16	62.8	50.2	81.6	65.3	55.0	35.2	62.8	40.3
M20	98.0	78.4	127.4	101.9	85.8	55.0	98.0	62.8
M24	141.2	113.0	183.6	146.8	123.6	79.2	141.2	90.5
M30	224.4	179.5	291.5	215.9	140.3	89.9	196.4	125.9

	Rebar BSt 500 to DIN 488		Rebar BSt 500 to DIN 488	
Rebar Diameter	$N_{rk,\,s}$	$N_{rd,\,s}$	$V_{rk,\,s}$	$V_{rd,\,s}$
(mm)	(kN)	(kN)	(kN)	(kN)
8	28.0	20.0	14.0	9.3
10	43.0	30.7	21.5	14.3
12	62.0	44.3	31.0	20.7
14	85.0	60.7	42.5	28.3
16	111.0	79.3	55.5	37.0
20	173.0	123.6	86.5	57.7
25	270.0	192.9	135.0	90.0
32	442	315.7	221	147.3

Anglian Injection Cartridge

Effect of Anchor Spacing - Tension

Anchor Spacing	Stud / Rebar Diameter						
(mm)	8	10	12	16	20	24	30
40	0.64						
50	0.67	0.63					
60	0.70	0.65	0.63				
70	0.73	0.67	0.64				
80	0.76	0.69	0.66	0.63			
90	0.79	0.72	0.68	0.64			
100	0.82	0.74	0.70	0.65	0.63		
120	0.87	0.79	0.74	0.68	0.65	0.63	
150	0.96	0.86	0.80	0.73	0.68	0.65	0.63
160	1.00	0.88	0.82	0.74	0.70	0.66	0.64
175		0.92	0.85	0.76	0.71	0.68	0.65
200		1.00	0.90	0.80	0.74	0.71	0.68
225			0.95	0.84	0.77	0.74	0.70
240			1.00	0.86	0.79	0.76	0.72
250				0.87	0.80	0.77	0.73
275				0.91	0.83	0.80	0.75
280				0.92	0.84	0.80	0.76
300				0.95	0.86	0.82	0.78
320				1.00	0.88	0.85	0.80
350					0.92	0.88	0.83
400					1.00	0.94	0.88
425						0.97	0.90
450						1.00	0.93
480							0.96
520							1.00

Effect of Edge Distance - Tension

Edge Distance	Stud / Rebar Diameter						
(mm)	8	10	12	16	20	24	30
40	0.64						
50	0.73	0.63					
60	0.82	0.70	0.63				
70	0.90	0.77	0.68				
80	1.00	0.84	0.74	0.63			
90		0.91	0.80	0.67			
100		1.00	0.86	0.71	0.63		
110			0.92	0.76	0.66		
120			1.00	0.80	0.70	0.64	
140				0.89	0.77	0.68	0.63
160				1.00	0.84	0.76	0.66
180					0.91	0.84	0.72
200					1.00	0.92	0.78
225						1.00	0.86
250							0.94
260							1.00

Effect of Edge Distance - Shear

Edge Distance	Stud / Rebar Diameter						
(mm)	8	10	12	16	20	24	30
40	0.25						
50	0.44	0.30					
60	0.63	0.48	0.30				
70	0.81	0.65	0.44				
80	1.00	0.83	0.58	0.40			
90		1.00	0.72	0.53			
100			0.86	0.67	0.35		
110			1.00	0.80	0.44		
125				1.00	0.58	0.35	
140					0.72	0.45	0.30
160					0.91	0.58	0.36
180					1.00	0.71	0.47
200						0.84	0.59
225						1.00	0.74
250							0.88
280							1.00

ANGLIAN FASTENERS

Bedford Head Office & Trade Counter
20-21 Shuttleworth Road, Elms Industrial Estate, Bedford, MK41 0EP
Sales Tel : 01234 345641
Trade Counter Open 8.30am - 4.30pm | Mon - Fri

info@anglianfasteners.co.uk

Northampton Office & Trade Counter
52 Tenter Road, Moulton Park Industrial Estate, Northampton, NN3 6AX
Sales Tel : 01604 645341
Trade Counter Open : 8am - 1pm, 2pm - 4.45pm | Mon - Fri

nton@anglianfasteners.co.uk

Anglian Injection Cartridge

Minimum Curing Time

Concrete Temperature	Gel - Working Time	Minimum curing time in dry concrete	Minimum curing time in wet concrete
- 10°C *	50 min	240 min	x2
-5°C *	40 min	180 min	x2
5°C	20 min	90 min	x2
15°C	9 min	60 min	x2
25°C	5 min	30 min	x2
35°C	3 min	20 min	x2

* Resin temperature must be at least 20°C

- Full cure 24 hours

- All specifications based on supplied mixer

Temperature Ranges

Temperature Range	Concrete Service Temperature	Maximum Long Term Concrete Temp	Maximum Short Term Concrete Temp
Range I	-40°C to +40°C	+24°C	+40°C
Range II	-40°C to +80°C	+50°C	+80°C

Service temperature range: Range of ambient temperatures after installation and during the lifetime of the anchor.

Short term temperature: Temperatures within the service temperature range which vary over short intervals,

e.g. day/night cycles and freeze/thaw cycles.

Long term temperature: Temperature, within the service temperature range, which will be approximately constant

over significant periods of time.

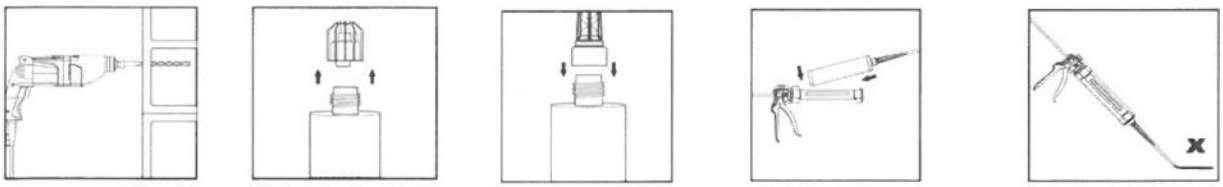
Long term temperatures will include constant or near constant temperatures, such as those experienced in cold stores or next to heating installations.

Physical Properties

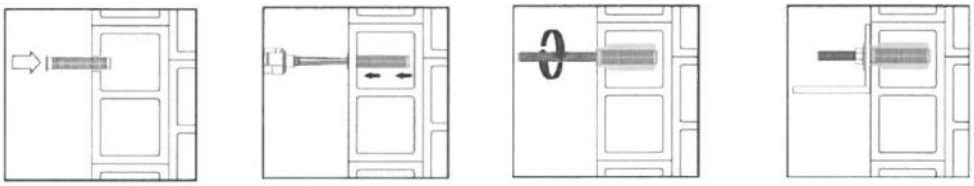
	N/mm2	Test Method
Compressive Strength	41.8	EN ISO 604 / ASTM 695
Flexural Strength	14.1	EN ISO 178 / ASTM 790
Flexural Modulus	2589.6	EN ISO 178 / ASTM 790
Tensile Strength	7.4	EN ISO 527 / ASTM 638
E Modulus	4365.5	EN ISO 527 / ASTM 638
VOC Content	A+ Rating	-

Anglian Injection Cartridge

Installation parameters: drilling hole cleaning and installation HOLLOW WALL



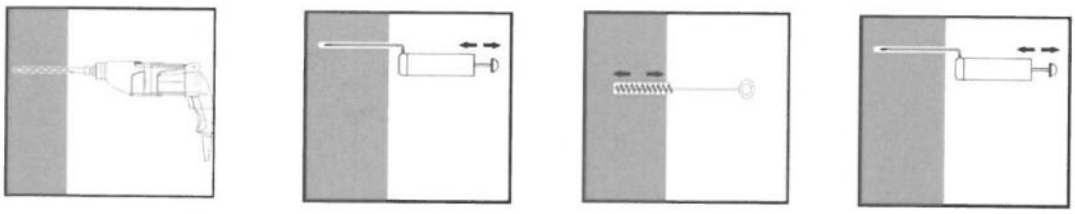
Drill hole in the substrate to the required embedment depth using the appropriately sized carbide drill bit. Bore hole cleaning Just before setting an anchor, the bore hole must be free of dust and debris. Remove the threaded cap from the cartridge. Tightly attach the mixing nozzle. Do not modify the mixer in any way. Made sure the mixing element is inside the mixer. Use only the supplied mixer. Insert the cartridge into the dispenser gun. Discard the initial trigger pulls of adhesive. Discard the first 10ml of resin until an even colour is achieved.



Introduce the sleeve of suitable dimensions. Insert the nozzle to the end of the sleeve and inject the resin so long till the sleeve will fill into 100%. Insert the anchor, slowly with a slight twisting motion into the sleeve. Remove excess resin and leave the fixing until minimum couring (loading) times has elapsed.

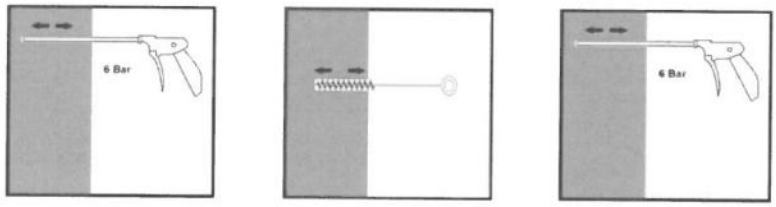
Anglian Injection Cartridge

Installation parameters: drilling hole cleaning and installation

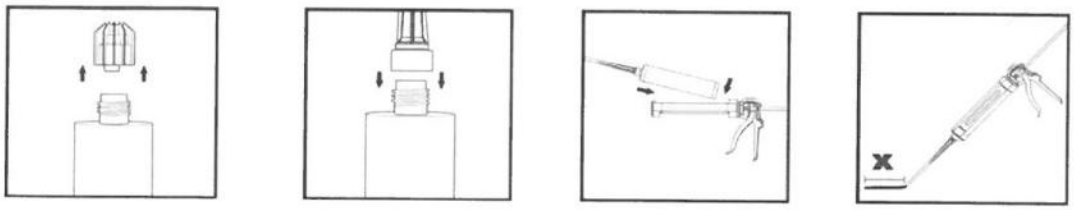


Drill hole in the substrate to the required embedment depth using the appropriately sized carbide drill bit. Bore hole cleaning Just before setting an anchor, the bore hole must be free of dust and debris. The manual pump shall be used for blowing out bore holes up to diameters do ≤ 24mm and embedment depths up to hef ≤ 10d. Blow out at least 4 times from the back of the bore hole, using an extension if needed. Brush 4 times with the specified brush size (see Table 6) by inserting the steel brush to the back of the hole (if needed with an extension) in a twisting motion and removing it. Blow out again with manual pump at least 4 times.

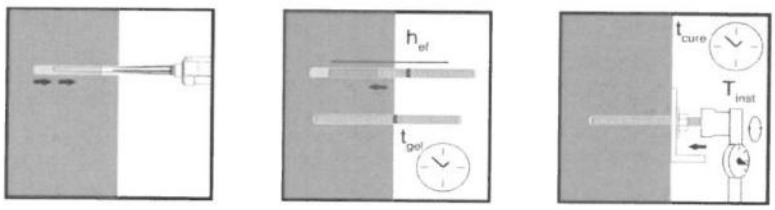
Compressed air cleaning (CAC) for all bore hole diameters do and all bore hole depths



Blow 2 times from the back of the hole (if needed with a nozzle extension) over the whole length with oil-free compressed air (min. 6 bar at 6 m³/h). Brush 2 times with the specified brush size (see Table 6) by inserting the steel brush to the back of the hole (if needed with an extension) in a twisting motion and removing it.
X 2 Blow out again with compressed air at least 2 times.



Remove the threaded cap from the cartridge. Tightly attach the mixing nozzle. Do not modify the mixer in any way. Made sure the mixing element is inside the mixer. Use only the supplied mixer. Insert the cartridge into the dispenser gun. Discard the initial trigger pulls of adhesive. Discard the first 10ml of resin.



Inject the adhesive starting at the back of the hole, slowly withdrawing the mixer with each trigger pull. Fill holes approximately 2/3 full, to ensure that the annular gap between the anchor and the concrete is completely filled with adhesive along the embedment depth. Before use, verify that the threaded rod is dry and free of contaminants. Install the threaded rod to the required embedment depth during the open gel time tgel has elapsed. The working time tgel is given in Table 7. The anchor can be loaded after the required curing time tcure (see Table 7). The applied torque shall not exceed the values Tmax given in Table 1.

Anglian Injection Cartridge

Characteristic and recommended loads for masonry:

The design details are fully disclosed in the ETA. The recommended load are valid under the following conditions:

- dry environment
- masonry mortar class more than M2.5
- space distance s ≥ s_{cr}
- edge distance c ≥ c_{cr}
- joints (vertical and horizontal) are visible and filled with mortar
- no pre-stressing force on the wall
- steel strength of anchor 5.8 or higher
- no interaction of tension and shear loads considered
- temperature range from -40 to +40°C

Brick type and strength: solid clay brick with compressive strength ≥ 40 Mpa			**Bulk density 1,67 kg/dm3**		
Brick Mateo Pione dimension 250 x 120 x 60 mm			**M8**	**M10**	**M12**
Anchorage depth	h_{ef}	mm	85	85	85
Drill diameter (hole diameter)	d_0	mm	10	12	14
Minimum wall thickness	h_{min}	mm	250	250	250
Critical space distance parallel to horizontal joint	$s_{cr,\parallel}$	mm	255	255	255
Critical space distance perpendicular to horizontal joint	$s_{cr,\perp}$	mm	255	255	255
Minimal space distance	s_{min}	mm	255		
Critical edge distance	c_{cr}	mm	127.5	127.5	127.5
Minimal edge distance	c_{min}	mm	127.5		
Installation torque	T_{ins}	Nm	2		
Characteristic tension load	N rk	kN	2.5	2.5	2.5
Recommended tension load	N rec	kN	0.71		
Characteristic shear load	V rk	kN	6	6	6
Recommended shear load	V rec	kN	1.71		

Brick type and strength: hollow brick - compressive strength ≥ 8,5 Mpa			**Bulk density 0,6 kg/dm3**		
Brick "French brick" dimension 560 x 200 x 274 mm			**M8**	**M10**	**M12**
Sleeve dimention (nylon or plastic)		mm	16 x 85		
Anchorage depth	h_{ef}	mm	85	85	85
Drill diameter (hole diameter)	d_0	mm	16	16	16
Minimum wall thickness	h_{min}	mm	250	250	250
Critical space distance parallel to horizontal joint	$s_{cr,\parallel}$	mm	560	560	560
Critical space distance perpendicular to horizontal joint	$s_{cr,\perp}$	mm	200	200	200
Minimal space distance	s_{min}	mm	560		
Critical edge distance	c_{cr}	mm	100	100	100
Minimal edge distance	c_{min}	mm	100		
Installation torque	T_{ins}	Nm	2		
Characteristic tension load	N rk	kN	0.75	0.75	0.75
Recommended tension load	N rec	kN	0.21		
Characteristic shear load	V rk	kN	3.5	3.5	3.5
Recommended shear load	V rec	kN	1		

Anglian Injection Cartridge

Notes

PAGE 2 :

Typical characteristic and design resistance performance with 5.8 grade studding and associated installation data

All data is based on correct installation - see instructions

No influence of edge and spacing

Minimum base material thickness hef +30mm >100mm for M8 to M12 and for M16 to M30 hef +2 d

h_{ef} range minimum or 4d whichever is greatest to 20d

Concrete strength C20/25 - f_c cube = 25N/mm^2 (25MPa)

5.8 grade stud

Temperature range i maximum long term / short term temperature +24/40°C

PAGE 3 to 5 :

Design Resistance with various stud strengths, material and rebar.

Note 1 for stainless steel tensile strength is 500N/mm^2 (500MPa)

Note 2 for stainless steel tensile strength is 700N/mm^2 (500MPa)

Data shown below the minimum embedment depth is for reference only. Please refer to manufacturer for advice.

All data is based on correct installation - see instructions

No influence of edge and spacing

Minimum base material thickness hef +30mm >100mm for M8 to M12 and for M16 to M30 hef +2 d

h_{ef} range minimum or 4d whichever is greatest to 20d

Concrete strength C20/25 - f_c cube = 25N/mm^2 (25MPa)

Temperature range i maximum long term / short term temperature +24/40°C

PAGE 68& 7 :

Bond Strength Factors

Select concrete strength and environmental condition and apply to bond strength table on page 3 to 5

Partial Safety Factors for pages 2,3,4,5,7 :

1.8 for all sizes studs

1.8 for all sizes rebar

Anglian Injection Cartridge

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Issue date: 08/12/2022 Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Name : Anglian Injection IS11G 400Ml Grey Cartridge Polyester Resin
Type of product : A Chemical anchoring application
Product group : Trade Product

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category : Industrial use,Professional use
Use of the substance/mixture : A Chemical anchoring application
Function or use category : Building and construction work

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Anglian Fasteners Ltd
20-21 Shuttleworth Road, Elms Industrial Estate, Bedford
MK41 0EP
01234 345641
info@anglianfasteners.co.uk

1.4. Emergency telephone number

Emergency number : 01234 345641 (Office Hours Only)

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH	0344 892 0111	Only for healthcare professionals

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Reproductive toxicity, Category 2	H361
Specific target organ toxicity – Repeated exposure, Category 1	H372

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Suspected of damaging fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure. Causes skin irritation. Causes serious eye irritation.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

GHS07 GHS08

Signal word (CLP) : Danger
Contains : STYRENE
Hazard statements (CLP) : H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H361 - Suspected of damaging the unborn child..
H372 - Causes damage to organs (hearing organs) through prolonged or repeated exposure (Inhalation:vapour).
Precautionary statements (CLP) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective clothing, eye protection, face protection.

2.3. Other hazards

Contains no PBT/vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
STYRENE	CAS-No.: 100-42-5 EC-No.: 202-851-5 EC Index-No.: 601-026-00-0	10 – 20	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Repr. 2, H361d STOT RE 1, H372

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : IF exposed or concerned: Get medical advice/attention.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact : Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after skin contact : Irritation.
Symptoms/effects after eye contact : Eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Anglian Injection Cartridge

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Mechanically recover the product. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.

7.3. Specific end use(s)

Building and construction work.

Anglian Injection Cartridge

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

STYRENE (100-42-5)	
United Kingdom - Occupational Exposure Limits	
Local name	Styrene
WEL TWA (OEL TWA) [1]	430 mg/m³
WEL TWA (OEL TWA) [2]	100 ppm
WEL STEL (OEL STEL)	1080 mg/m³
WEL STEL (OEL STEL) [ppm]	250 ppm
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:
Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment symbol(s):

8.2.2.1. Eye and face protection

Eye protection:
Safety glasses

8.2.2.2. Skin protection

Skin and body protection:
Wear suitable protective clothing

Hand protection:
Chemical resistant gloves (according to European standard EN 374 or equivalent)

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Hand protection					
Type	**Material**	**Permeation**	**Thickness (mm)**	**Penetration**	**Standard**
Disposable gloves, Reusable gloves	Nitrile rubber (NBR), Butyl rubber, Viton® II	6 (> 480 minutes)	0.4	As the product is a preperation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.	EN ISO 374

8.2.2.3. Respiratory protection

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment. EN141. [In case of inadequate ventilation] wear respiratory protection.

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Appearance	:	Paste.
Colour	:	Beige.
Odour	:	Characteristic odour.
Odour threshold	:	No data available
pH	:	No data available
Relative evaporation rate (butylacetate=1)	:	No data available
Melting point	:	No data available
Freezing point	:	Not applicable
Boiling point	:	No data available
Flash point	:	Not applicable
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	Non flammable.
Vapour pressure	:	6.67 hPa
Relative vapour density at 20°C	:	No data available
Relative density	:	1.69
Solubility	:	Material insoluble in water.
Partition coefficient n-octanol/water (Log Pow)	:	No data available
Viscosity, kinematic	:	Not applicable
Viscosity, dynamic	:	> 100000 cP Brookfield HB DV1 viscometer
Explosive properties	:	No data available
Oxidising properties	:	No data available
Explosive limits	:	Not applicable

9.2. Other information

Additional information	:	Solid suspension - classified as non-flammable according to results from Test N.1 test method for readily combustible solids.

Anglian Injection Cartridge

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

STYRENE (100-42-5)	
LD50 oral rat	5000 mg/kg Source: ECHA
LD50 dermal rat	> 2000 mg/kg Source: ECHA
LC50 Inhalation - Rat (Vapours)	11.8 mg/l Source: ECHA

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

STYRENE (100-42-5)	
IARC group	2B - Possibly carcinogenic to humans

Reproductive toxicity : Suspected of damaging the unborn child..
STOT-single exposure : Not classified
STOT-repeated exposure : Causes damage to organs (hearing organs) through prolonged or repeated exposure (Inhalation:vapour).

STYRENE (100-42-5)	
STOT-repeated exposure	Causes damage to organs (hearing organs) through prolonged or repeated exposure.

Aspiration hazard : Not classified

ZETACARTRIDGE No1 COMP A	
Viscosity, kinematic	Not applicable

Anglian Injection Cartridge

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Hazardous to the aquatic environment, short–term (acute) : Not classified

Hazardous to the aquatic environment, long–term (chronic) : Not classified

Not rapidly degradable

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

STYRENE (100-42-5)	
Partition coefficient n-octanol/water (Log Pow)	2.95 Source: HSDB,CHemIDplus

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2. UN proper shipping name				
Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.3. Transport hazard class(es)				
Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.4. Packing group				
Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.5. Environmental hazards				
Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
No supplementary information available				

Anglian Injection Cartridge

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

14.6. Special precautions for user

Overland transport
Not regulated.

Transport by sea
Not regulated.

Air transport
Not regulated.

Inland waterway transport
Not regulated.

Rail transport
Not regulated.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

Anglian Injection Cartridge

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

SECTION 16: Other information

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer :
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Anglian Injection Cartridge

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Full text of H- and EUH-statements:	
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H361	Suspected of damaging fertility or the unborn child.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 1	Specific target organ toxicity – Repeated exposure, Category 1

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Anglian Injection Cartridge COMP B (FOR No1,2,4 & 7)

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Issue date: 08/12/2022 Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Name : Anglian Injection IS11G 400Ml Grey Cartridge COMP B (FOR No1, 2, 4 & 7)
Type of product : A Chemical anchoring application
Product group : Trade product

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category : Industrial use,Professional use
Use of the substance/mixture : A Chemical anchoring application
Catalyst
Function or use category : Building and construction work

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Anglian Fasteners Ltd
20-21 Shuttleworth Road, Elms Industrial Estate, Bedford
MK41 0EP
01234 345641
info@anglianfasteners.co.uk

1.4. Emergency telephone number

Emergency number : 01234 345641 (Office Hours Only)

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH	0344 892 0111	Only for healthcare professionals

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Serious eye damage/eye irritation, Category 2	H319
Skin sensitisation, Category 1	H317
Hazardous to the aquatic environment – Chronic Hazard, Category 3	H412

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

May cause an allergic skin reaction. Causes serious eye irritation. Harmful to aquatic life with long lasting effects.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS07

Anglian Injection Cartridge COMP B (FOR No1,2,4 & 7)

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according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Signal word (CLP)	:	Warning
Contains	:	DIBENZOYL PEROXIDE.
Hazard statements (CLP)	:	H317 - May cause an allergic skin reaction. H319 - Causes serious eye irritation. H412 - Harmful to aquatic life with long lasting effects.
Precautionary statements (CLP)	:	P261 - Avoid breathing dust/fume/gas/mist/vapours/spray. P264 - Wash hands, forearms and face thoroughly after handling. P272 - Contaminated work clothing should not be allowed out of the workplace. P273 - Avoid release to the environment. P280 - Wear protective clothing, eye protection, face protection. P302+P352 - IF ON SKIN: Wash with plenty of soap and water.

2.3. Other hazards

Contains no PBT/vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
DIBENZOYL PEROXIDE.	CAS-No.: 94-36-0 EC-No.: 202-327-6 EC Index-No.: 617-008-00-0 REACH-no: 01-2119511472-50	10 – 20	Org. Perox. B, H241 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10)
ETHYLENE GLYCOL. substance with a Community workplace exposure limit	CAS-No.: 107-21-1 EC-No.: 203-473-3 EC Index-No.: 603-027-00-1 REACH-no: 01-2119456816-28	3 – 10	Acute Tox. 4 (Oral), H302 STOT RE 2, H373

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	:	Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	:	Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	:	Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after skin contact	:	May cause an allergic skin reaction.
Symptoms/effects after eye contact	:	Eye irritation.

Anglian Injection Cartridge COMP B (FOR No1,2,4 & 7)

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Mechanically recover the product.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray. Wear personal protective equipment.

Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

7.3. Specific end use(s)

No additional information available

Anglian Injection Cartridge COMP B (FOR No1,2,4 & 7)

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

DIBENZOYL PEROXIDE. (94-36-0)	
United Kingdom - Occupational Exposure Limits	
Local name	Dibenzoyl peroxide
WEL TWA (OEL TWA) [1]	5 mg/m³
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

ETHYLENE GLYCOL. (107-21-1)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Ethylene glycol
IOEL TWA	52 mg/m³
IOEL TWA [ppm]	20 ppm
IOEL STEL	104 mg/m³
IOEL STEL [ppm]	40 ppm
Remark	Skin
Regulatory reference	COMMISSION DIRECTIVE 2000/39/EC
United Kingdom - Occupational Exposure Limits	
Local name	Ethane-1,2-diol
WEL TWA (OEL TWA) [1]	10 mg/m³ particulate 52 mg/m³ vapour
WEL TWA (OEL TWA) [2]	20 ppm vapour
WEL STEL (OEL STEL)	104 mg/m³ vapour
WEL STEL (OEL STEL) [ppm]	40 ppm vapour
Remark	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:
Ensure good ventilation of the work station.

Anglian Injection Cartridge COMP B (FOR No1,2,4 & 7)

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

8.2.2. Personal protection equipment

Personal protective equipment symbol(s):

8.2.2.1. Eye and face protection

Eye protection:
Safety glasses

8.2.2.2. Skin protection

Skin and body protection:
Wear suitable protective clothing

Hand protection:
Chemical resistant gloves (according to European standard EN 374 or equivalent)

Hand protection

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves, Reusable gloves	Nitrile rubber (NBR), Butyl rubber, Viton® II	6 (> 480 minutes)	0.4	As the product is a preperation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.	EN ISO 374

8.2.2.3. Respiratory protection

Respiratory protection:
Wear suitable respiratory equipment in case of insufficient ventilation. EN141

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Colour	:	Beige. Black. White. Grey.
Appearance	:	Paste.
Odour	:	Barely perceptible odour.
Odour threshold	:	Not available
Melting point	:	0 °C
Freezing point	:	Not available
Boiling point	:	Not available
Flammability	:	Not available
Oxidising properties	:	Not oxidising.
Explosive limits	:	Not applicable
Lower explosion limit	:	Not applicable

Anglian Injection Cartridge COMP B (FOR No1,2,4 & 7)

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Upper explosion limit	:	Not applicable
Flash point	:	Not applicable
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	Not available
SADT	:	≈ 50 °C
pH	:	Not available
pH solution	:	Not available
Viscosity, kinematic	:	Not applicable
Solubility	:	Material insoluble in water.
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Vapour pressure	:	Not available
Vapour pressure at 50°C	:	Not available
Density	:	Not available
Relative density	:	1.45 g/cm3
Relative vapour density at 20°C	:	Not applicable
Particle size	:	Not available

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral)	:	Not classified
Acute toxicity (dermal)	:	Not classified
Acute toxicity (inhalation)	:	Not classified

DIBENZOYL PEROXIDE. (94-36-0)	
LD50 oral rat	> 2000 mg/kg

Anglian Injection Cartridge COMP B (FOR No1,2,4 & 7)

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

ETHYLENE GLYCOL. (107-21-1)	
LD50 oral rat	7712 mg/kg bodyweight Animal: rat
LD50 dermal	3500 mg/kg

Skin corrosion/irritation : Not classified

ETHYLENE GLYCOL. (107-21-1)	
pH	6 – 7.5 Source: GESTIS

Serious eye damage/irritation : Causes serious eye irritation.

ETHYLENE GLYCOL. (107-21-1)	
pH	6 – 7.5 Source: GESTIS

Respiratory or skin sensitisation : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

DIBENZOYL PEROXIDE. (94-36-0)	
IARC group	3 - Not classifiable

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

ETHYLENE GLYCOL. (107-21-1)	
NOAEL (oral, rat, 90 days)	150 mg/kg bodyweight/day

Aspiration hazard : Not classified

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Harmful to aquatic life with long lasting effects.

Hazardous to the aquatic environment, short–term (acute) : Not classified

Hazardous to the aquatic environment, long–term (chronic) : Harmful to aquatic life with long lasting effects.

Not rapidly degradable

ZETACARTRIDGE COMP B (FOR No1, 2, 4 & 7)	
LC50 - Fish [1]	> 100 mg/l OECD TG 203
EC50 - Other aquatic organisms [1]	> 10 mg/l OECD TG 202
EC50 72h - Algae [1]	> 60 mg/l OECD TG 201

DIBENZOYL PEROXIDE. (94-36-0)	
LC50 - Fish [1]	0.0602 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [1]	0.11 mg/l Test organisms (species): Daphnia magna
EC50 - Other aquatic organisms [1]	0.11 mg/l
ErC50 algae	0.071 mg/l Source: ECHA

Anglian Injection Cartridge COMP B (FOR No1,2,4 & 7)

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

ETHYLENE GLYCOL. (107-21-1)	
LC50 - Fish [1]	> 72860 mg/l Test organisms (species): Pimephales promelas
EC50 - Crustacea [1]	> 100 mg/l Test organisms (species): Daphnia magna
EC50 - Other aquatic organisms [1]	100 mg/l
EC50 96h - Algae [1]	6500 – 13000 mg/l Source: ECHA
NOEC (chronic)	≥ 1000 mg/l Test organisms (species): Americamysis bahia (previous name: Mysidopsis bahia) Duration: '23 d'
NOEC chronic fish	15380 mg/l
NOEC chronic crustacea	8590 mg/l

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

DIBENZOYL PEROXIDE. (94-36-0)	
Partition coefficient n-octanol/water (Log Pow)	3.46 Source: HSDB
ETHYLENE GLYCOL. (107-21-1)	
Partition coefficient n-octanol/water (Log Pow)	-1.36

12.4. Mobility in soil

ETHYLENE GLYCOL. (107-21-1)	
Mobility in soil	0.2 Source: HSDB

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2. UN proper shipping name				
Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.

Anglian Injection Cartridge COMP B (FOR No1,2,4 & 7)

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

ADR	IMDG	IATA	ADN	RID
14.3. Transport hazard class(es)				
Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.4. Packing group				
Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.5. Environmental hazards				
Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
No supplementary information available				

14.6. Special precautions for user

Overland transport
Not regulated.

Transport by sea
Not regulated.

Air transport
Not regulated.

Inland waterway transport
Not regulated.

Rail transport
Not regulated.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Anglian Injection Cartridge COMP B (FOR No1,2,4 & 7)

Safety Data Sheet

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Drug Precursors Regulation (273/2004)

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15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

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SECTION 16: Other information

Abbreviations and acronyms:	
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Anglian Injection Cartridge COMP B (FOR No1,2,4 & 7)

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Abbreviations and acronyms:	
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Full text of H- and EUH-statements:	
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H241	Heating may cause a fire or explosion.
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
Org. Perox. B	Organic Peroxides, Type B
Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2

Safety Data Sheet (SDS), EU

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