

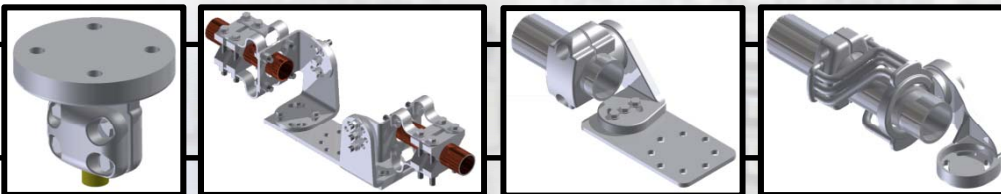


# Connectors and Switchgear Ltd

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## INSTALLATION INSTRUCTIONS



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# PROCEDURE FOR THE PREPARATION OF CURRENT CARRYING BOLTED ALUMINIUM JOINTS



- REMOVE FROM CONTACT FACES ALL COVERINGS PROVIDED FOR PROTECTION DURING SHIPMENT TO SITE.
- BRUSH THE CONTACT FACES VIGOROUSLY WITH A DRY CLEAN STAINLESS STEEL BRUSH UNTIL BOTH SURFACES ARE BRIGHT INDICATING REMOVAL OF THE ALUMINIUM OXIDE FILM. IF THE FACES ARE HEAVILY OXIDISED IT MAY BE EASIER TO USE A FILE OR "TRIMMA TOOL" INSTEAD OF A BRUSH.
- SPREAD THINLY A SMALL QUANTITY OF "OCG™5000" GREASE OVER THE ALUMINIUM JOINT SURFACE, ENSURING THAT THE JOINT SURFACE IS COMPLETELY COVERED. THIS SHOULD BE DONE IMMEDIATELY AFTER THE SURFACES HAVE BEEN CLEANED TO PREVENT FURTHER OXIDISATION.

SCRAPE EXCESS COMPOUND FROM THE FACES USING THE REVERSE SIDE OF A HACKSAW BLADE OR METAL STRAIGHT EDGE RULE, SO THAT ALL LUMPS ARE REMOVED AND A FINE EVENLY DISTRIBUTED COVERING REMAINS.

- RUN NUTS UP BOLTS OR STUDS TO ENSURE THAT THREADS ARE NOT TIGHT AND THAT THE THREADED LENGTH OF BOLT OR STUD SHANK IS ADEQUATE. WHERE BLIND OR TAPPED HOLES ARE INVOLVED, BOLTS SHOULD BE SCREWED IN WITHOUT WASHERS INITIALLY TO CHECK THAT "BOTTOMING" DOES NOT OCCUR.

SMEAR THE THREADS OF THE BOLTS OR STUDS WITH "OCG™5000" GREASE AND WIPE OFF ANY EXCESS SO THAT ONLY THE THREADS ARE FILLED WITH COMPOUND AND THERE IS NONE PROJECTING BEYOND THE THREAD CIRCUMFERENCE.

- BOLT UP THE FACES, SECURING ALL NUTS OR BOLTS WITH SPREADER AND LOCKWASHERS IN THE CORRECT POSITIONS, i.e. SPREADER WASHER BELOW LOCKING WASHER.

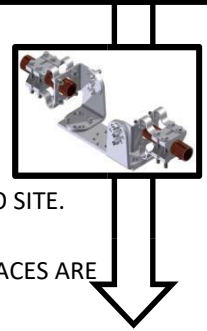
SPREADER WASHERS SHOULD BE 5MM THICK AND THE BOLTS TIGHTENED WITH A TORQUE WRENCH TO THE FOLLOWING TORQUES:- GALVANISED FIXINGS ONLY BOLT & NUT

BOLT SIZE	TORQUE Nm	U BOLT SIZE	TORQUE Nm
M10	40		
M12	50	M12	88
M16	90	M16	95
M20	150		

- WIPE OFF ANY EXTRUDED COMPOUND FROM THE PERIPHERY OF THE JOINT.
- WE RECOMMEND THAT ANY SLOTS OR CREVICES CAPABLE OF HOLDING WATER SHOULD BE FILLED WITH SILRUB 2" CJ GRADE COMPOUND.
- FOR CONNECTIONS INCLUDING A BI-METAL INTERFACE OF EITHER BRASS OR CUPAL, FOLLOW INSTRUCTIONS ABOVE BUT SEAL THE JOINTS WITH "SILRUB 2CJ" GRADE TO PREVENT THE INGRESS OF MOISTURE.
- ALL BIMETALS EITHER SINGLE SLOT OR SPLIT MUST BE INSTALLED SO THE SPLIT IS IN THE SAME POSITION AS THE GAP/GAPS BETWEEN THE CLAMPING SURFACES.

PLEASE NOTE THAT IT IS ALWAYS PREFERRED TO HAVE THE ALUMINIUM PART OF THE JOINT ABOVE THE COPPER/BRONZE PORTION.

## PROCEDURE FOR THE PREPARATION OF CURRENT CARRYING BOLTED COPPER JOINTS



- REMOVE FROM CONTACT FACES ALL COVERINGS PROVIDED FOR PROTECTION DURING SHIPMENT TO SITE.
- BRUSH THE CONTACT FACES LIGHTLY WITH A DRY CLEAN STAINLESS STEEL BRUSH UNTIL BOTH SURFACES ARE BRIGHT INDICATING REMOVAL OF THE OXIDE FILM..
- SPREAD THINLY A SMALL QUANTITY OF “OCG™5000” GREASE OVER THE TINNED JOINT SURFACE, ENSURING THAT THE JOINT SURFACE IS COMPLETELY COVERED. THIS SHOULD BE DONE IMMEDIATELY AFTER THE SURFACES HAVE BEEN CLEANED TO PREVENT FURTHER OXIDISATION.

SCRAPE EXCESS COMPOUND FROM THE FACES USING THE REVERSE SIDE OF A HACKSAW BLADE OR METAL STRAIGHT EDGE RULE, SO THAT ALL LUMPS ARE REMOVED AND A FINE EVENLY DISTRIBUTED COVERING REMAINS.

- RUN NUTS UP BOLTS OR STUDS TO ENSURE THAT THREADS ARE NOT TIGHT AND THAT THE THREADED LENGTH OF BOLT OR STUD SHANK IS ADEQUATE. WHERE BLIND OR TAPPED HOLES ARE INVOLVED, BOLTS SHOULD BE SCREWED IN WITHOUT WASHERS INITIALLY TO CHECK THAT “BOTTOMING” DOES NOT OCCUR.

SMEAR THE THREADS OF THE BOLTS OR STUDS WITH “OCG™5000” GREASE AND WIPE OFF ANY EXCESS SO THAT ONLY THE THREADS ARE FILLED WITH COMPOUND AND THERE IS NONE PROJECTING BEYOND THE THREAD CIRCUMFERENCE.

- BOLT UP THE FACES, SECURING ALL NUTS OR BOLTS WITH SPREADER AND LOCKWASHERS IN THE CORRECT POSITIONS, ie SPREADER WASHER BELOW LOCKING WASHER.

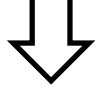
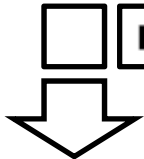
SPREADER WASHERS SHOULD BE 5MM THICK AND THE BOLTS TIGHTENED WITH A TORQUE WRENCH TO THE FOLLOWING TORQUES:-

BOLT SIZE	TORQUE Nm	U BOLT SIZE	TORQUE Nm
M10	40		
M12	70	M12	88
M16	90	M16	95
M20	150		

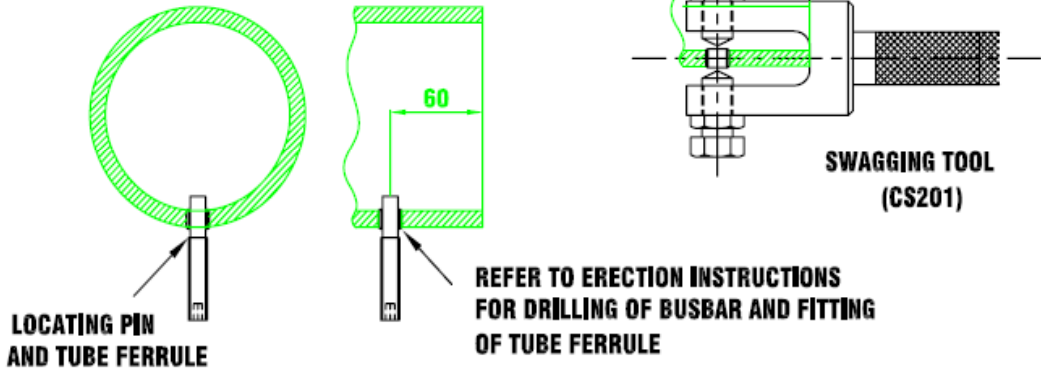
- WIPE OFF ANY EXTRUDED COMPOUND FROM THE PERIPHERY OF THE JOINT.
- ANY SLOTS OR CREVICES CAPABLE OF HOLDING WATER SHOULD BE FILLED WITH “SEALASTIC” CJ GRADE COMPOUND OR SIMILAR.
- FOR CONNECTIONS INCLUDING A BI-METAL INTERFACE OF EITHER ALUMINIUM OR CUPAL, FOLLOW INSTRUCTIONS ABOVE BUT SEAL THE JOINTS WITH “SEALASTIC” CJ GRADE TO PREVENT THE INGRESS OF MOISTURE.
- ALL BIMETALS EITHER SINGLE SLOT OR SPLIT MUST BE INSTALLED SO THE SPLIT IS IN THE SAME POSITION AS THE GAP/GAPS BETWEEN THE CLAMPING SURFACES.

PLEASE NOTE THAT IT IS ALWAYS PREFERRED TO HAVE THE ALUMINIUM PART OF THE JOINT ABOVE THE COPPER/BRONZE PORTION.

**LOCATION FOR BUSBAR TUBE INSERT**



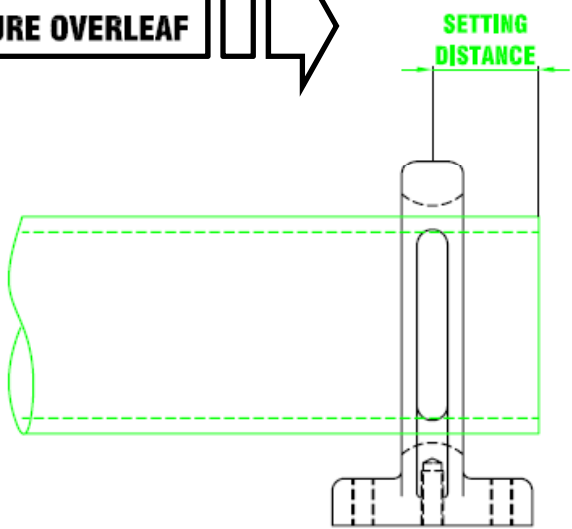
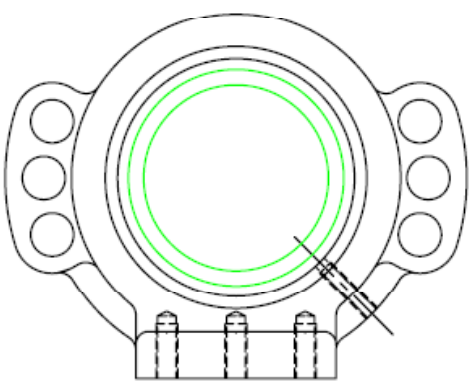
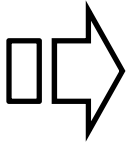
**ENSURE THAT THE SCREWS ARE TIGHTENED TO A TORQUE OF 156Nm**



1. MISCELLANEOUS ITEMS REQUIRED TO COMPLETE ASSEMBLY OF ALL FITINGS.
- a) OCG™5000
  - b) FERRULE DRILL
  - c) LOCTITE
  - d) CS201 SWAGGING TOOL
  - e) SILRUB 2

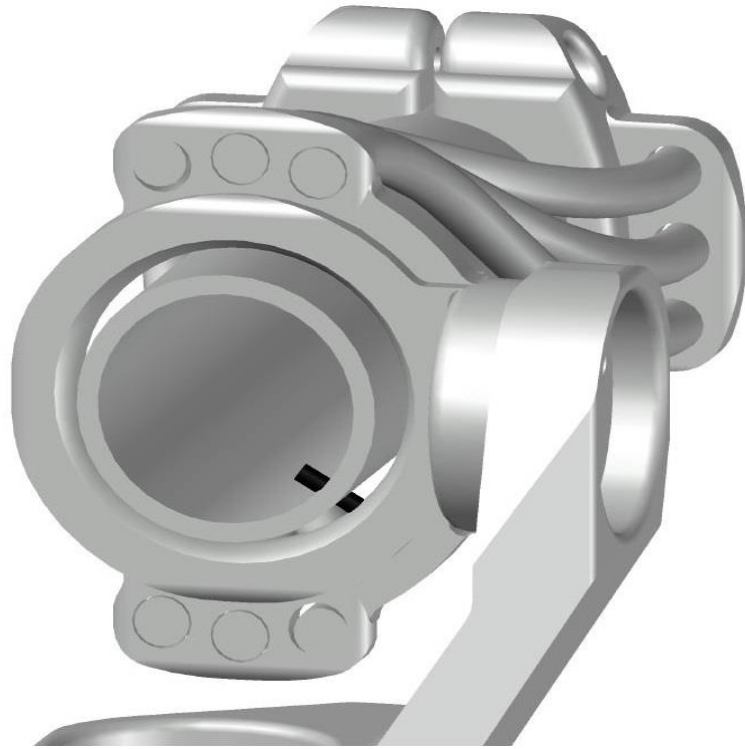
**FOR BUSBARS 140mm AND UPWARDS**

**SEE SETTING DISTANCE PROCEDURE OVERLEAF**

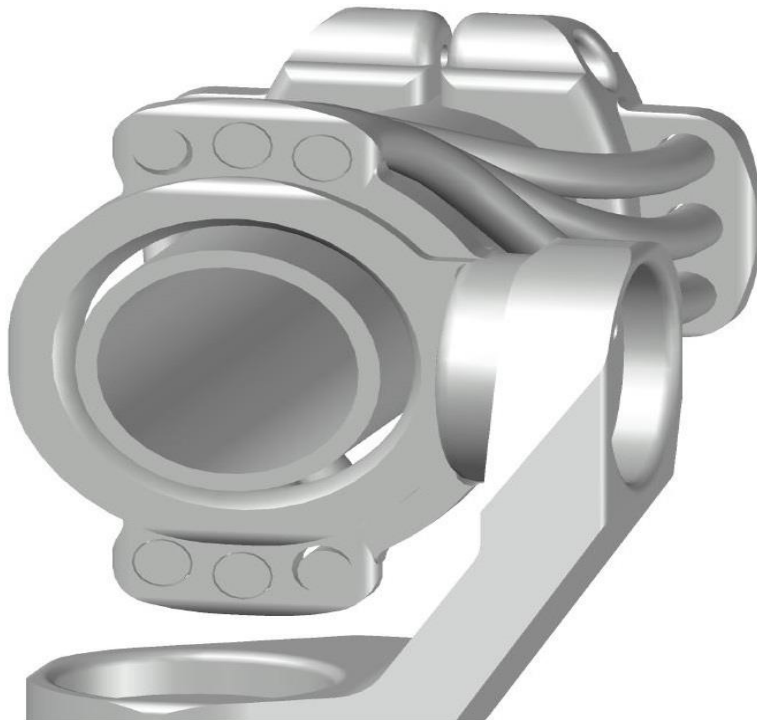


**NOTE - PIN ARRANGEMENT IS REQUIRED ON CONNECTORS WITH SLIDING CONTACT WHEN THERE IS A NEED TO HAVE A FIXED CONNECTION. NO PIN ARRANGEMENT IS REQUIRED FOR A SIMPLE SLIDING CONNECTION**

FIXED CONNECTION (PIN REQUIRED)



SIMPLE SLIDING CONNECTION (NO PIN REQUIRED)



# ERECTION INSTRUCTIONS FOR CONNECTORS THAT HAVE INCORPORATED SLIDER RINGS ON PLATES AND UNVIVERSAL TYPE

## THE FOLLOWING MAX. BUSBAR LENGTHS ARE AS BELOW

250x10x20.5 METRES 63kA FAULT  
220x8x19.25 METRES 63kA FAULT  
190x12x17.5 METRES 63kA FAULT  
140x10x14 METRES 63kA FAULT  
90x6x10.4 METERS 40kA FAULT

250x8x20.5 METRES 63kA FAULT  
200x8x18.5 METRES 63kA FAULT  
190x10x17.5 METRES 63kA FAULT  
140x12x14 METRES 63kA FAULT  
60x4x7.2 METRES 40kA FAULT

- ALL BUSBARS (**NOT 60 OR 90**) MUST BE FITTED WITH A KNURLED TUBE INSERT, AT THE FIXED END
- FITTING INSTRUCTIONS FOR TUBE INSERTS

**A)** MEASURE A DISTANCE PF 60mm FROM THE END OF THE BUSBAR TUBE TO BE PINNED AND DRILL A 15.5mm DIA HOLE (**10DIA**) DEBURR HOLE BOTH SIDES WITH A FILE

**B)** FIT INSERT WITH THE AID OF THE SPECIAL TOOL (C&S REF CS201) ENSURING THE INSERT IS SECURELY FITTED. A TORQUE OF 156Nm IS REQUIRED FOR SWAGGING.

**C)** WHEN FITTED, LIFT BUSBAR INTO ITS POSITION (INSERT END WILL BECOME THE FIXED END) WITHIN THE FIXED AND EXPANSION CONNECTORS. SCREW THE M12 (**M8**) LOCATING SCREW INTO THE TUBE INSERT.

**NOTE – WITH THE LARGER LENGTHS OF BUSBAR (i.e. LENGTHS IN EXCESS OF 8 METRES) IT IS ADVISABLE TO REMOVE THE SLIDER RING ASSEMBLY FROM THE CONNECTOR BASE PLATE OR CASTING AND SLIP THESE OVER EACH END OF THE BUSBAR BEFORE LIFTING THE BUSBAR INTO POSITION. THE SLIDER RING ASSEMBLIES CAN THEN BE RE-ASSEMBLED TO THEIR ORIGINAL LOCATIONS APPLIED TO THE PRIMARY PLANT TERMINALS.**

**D)** ONCE LOCATED, THE BUSBAR TUBE SHOULD BE ALLOWED TO REST UNSUPPORTED BETWEEN THE FIXED AND EXPANSION CONNECTORS.

**E)** MEASURE A DISTANCE (SETTING DISTANCE) “X”mm FROM CENTRE OF THE SLIDER RING OUTWARDS TOWARDS THE END OF THE BUSBAR TUBE AT THE EXPANSION CONNECTOR END. THE SETTING DISTANCE IS CALCULATED AS FOLLOWS : **THERMAL EXPANSION + S.C. DISPLACEMENT + SAFETY FACTOR** - THIS IS THE AMBIENT TEMPERATURE ON THE DAY OF ERECTION

**F)** THE BUSBAR TUBE SHOULD BE RETURNED TO GROUND LEVEL AND CUT TO THE REQUIRED LENGTH MEASURED DURING STAGE E ABOVE .

- THE SLIDER RINGS AND TUBE CLAMPS FOPR BOTH FIXED AND EXPANSION CONNECTORS SHOULD BE NOW ASSEMBLED IN THE USUAL MANNER (SEE ATTACHED JOINTING PROCEDURE INSTRUCTIONS) THE COUNTERSUNK ALLEN KEY SCREWS SHOULD BE TIGHTENED TO A TORQUE OF 70Nm WITH A PRIOR APPLICATION OF “LOCTITE 330”
- LIFT BUSBAR INTO POISTION, SCREW THE M12 SCREW IN THE SLIDER RING INTO THE TUBE INSERT, (THE M12 SOCKET CAP GRUB SCREW SHOULD BE COATED WITH “LOCTITE 330”) TO FORM A PERMANENT JOINT TIGHTEN CLAMPS AROUND TUBE, BOLT TORQUE SHOULD BE 50Nm (**25Nm**)
- THE DISTANCE MEASURED DURING STAGE E SHOULD THEN BE RE-CHECKED TO CONFIRM THE SETTING DISTANCE “X”mm
- ALL CONNECTIONS THAT INCORPORATE COUNTERSUNK ALLEN SCREWS MUST BE LOCTITED AFTER THE USUAL JOINTING PROCEDURE HAS BEEN PERFORMED AND THE SCREWS TIGHTENED TO 70Nm

## CLAMP FIXING HARDWARE

SOME CONNECTORS HAVE STAINLESS STEEL HARDWARE WITH “NYLOC” NUTS SUPPLIED SEPERATLEY ATTACHED TO THE FITTINGS

- ENSURE THAT ALL BOLT THREADS ARE COATED WITH GREASE TO PREVENT THREAD LOCK
- REMOVE TRANSIT GALVANISED NUTS AND REPLACE WITH THE “NYLOC” NUTS SUPPLIED
- IF FOR ANY REASON THE “NYLOC” NUT IS REMOVED A NEW NUT WILL NEED TO BE FITTED



60mm dia Aluminium Busbar



Busbar Diameter			60X4				
Ambient Temperature Ref	Temperature Effect	Max Busbar Length	C.F	Thermal Expansion MM	SC Displacement	Safety Factor/Endcap	Setting Distance
-25	0	7400	0.000023	0.00	19	30	49
-20	5	7400	0.000023	0.85	19	30	49.85
-15	10	7400	0.000023	1.70	19	30	50.70
-10	15	7400	0.000023	2.55	19	30	51.55
-5	20	7400	0.000023	3.40	19	30	52.40
0	25	7400	0.000023	4.26	19	30	53.26
5	30	7400	0.000023	5.11	19	30	54.11
10	35	7400	0.000023	5.96	19	30	54.96
15	40	7400	0.000023	6.81	19	30	55.81
20	45	7400	0.000023	7.66	19	30	56.66
25	50	7400	0.000023	8.51	19	30	57.51
30	55	7400	0.000023	9.36	19	30	58.36
35	60	7400	0.000023	10.21	19	30	59.21
40	65	7400	0.000023	11.06	19	30	60.06
45	70	7400	0.000023	11.91	19	30	60.91
50	75	7400	0.000023	12.77	19	30	61.77
55	80	7400	0.000023	13.62	19	30	62.62
60	85	7400	0.000023	14.47	19	30	63.47
65	90	7400	0.000023	15.32	19	30	64.32
70	95	7400	0.000023	16.17	19	30	65.17
75	100	7400	0.000023	17.02	19	30	66.02
80	105	7400	0.000023	17.87	19	30	66.87
85	110	7400	0.000023	18.72	19	30	67.72
90	115	7400	0.000023	19.57	19	30	68.57

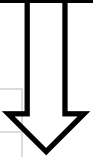
90mm dia wall Aluminium Busbar

Busbar Diameter			90X6				
Ambient Temperature Ref	Temperature Effect	Max Busbar Length	C.F	Thermal Expansion MM	SC Displacement	Safety Factor/Endcap	Setting Distance
-25	0	10400	0.000023	0.00	27.5	30	57.5
-20	5	10400	0.000023	1.20	27.5	30	58.70
-15	10	10400	0.000023	2.39	27.5	30	59.89
-10	15	10400	0.000023	3.59	27.5	30	61.09
-5	20	10400	0.000023	4.78	27.5	30	62.28
0	25	10400	0.000023	5.98	27.5	30	63.48
5	30	10400	0.000023	7.18	27.5	30	64.68
10	35	10400	0.000023	8.37	27.5	30	65.87
15	40	10400	0.000023	9.57	27.5	30	67.07
20	45	10400	0.000023	10.76	27.5	30	68.26
25	50	10400	0.000023	11.96	27.5	30	69.46
30	55	10400	0.000023	13.16	27.5	30	70.66
35	60	10400	0.000023	14.35	27.5	30	71.85
40	65	10400	0.000023	15.55	27.5	30	73.05
45	70	10400	0.000023	16.74	27.5	30	74.24
50	75	10400	0.000023	17.94	27.5	30	75.44
55	80	10400	0.000023	19.14	27.5	30	76.64
60	85	10400	0.000023	20.33	27.5	30	77.83
65	90	10400	0.000023	21.53	27.5	30	79.03
70	95	10400	0.000023	22.72	27.5	30	80.22
75	100	10400	0.000023	23.92	27.5	30	81.42
80	105	10400	0.000023	25.12	27.5	30	82.62
85	110	10400	0.000023	26.31	27.5	30	83.81
90	115	10400	0.000023	27.51	27.5	30	85.01



### 120mm dia Aluminium Busbar

Busbar Diameter			120X8					
Ambient Temperature Ref	Temperature Effect	Max Busbar Length	C.F	Thermal Expansion MM	SC Displacement	Safety Factor/Endcap	Setting Distance	
-25	0	12000	0.000023	0.00	17.16	30	47.16	
-20	5	12000	0.000023	1.38	17.16	30	48.54	
-15	10	12000	0.000023	2.76	17.16	30	49.92	
-10	15	12000	0.000023	4.14	17.16	30	51.30	
-5	20	12000	0.000023	5.52	17.16	30	52.68	
0	25	12000	0.000023	6.90	17.16	30	54.06	
5	30	12000	0.000023	8.28	17.16	30	55.44	
10	35	12000	0.000023	9.66	17.16	30	56.82	
15	40	12000	0.000023	11.04	17.16	30	58.20	
20	45	12000	0.000023	12.42	17.16	30	59.58	
25	50	12000	0.000023	13.80	17.16	30	60.96	
30	55	12000	0.000023	15.18	17.16	30	62.34	
35	60	12000	0.000023	16.56	17.16	30	63.72	
40	65	12000	0.000023	17.94	17.16	30	65.10	
45	70	12000	0.000023	19.32	17.16	30	66.48	
50	75	12000	0.000023	20.70	17.16	30	67.86	
55	80	12000	0.000023	22.08	17.16	30	69.24	
60	85	12000	0.000023	23.46	17.16	30	70.62	
65	90	12000	0.000023	24.84	17.16	30	72.00	
70	95	12000	0.000023	26.22	17.16	30	73.38	
75	100	12000	0.000023	27.60	17.16	30	74.76	
80	105	12000	0.000023	28.98	17.16	30	76.14	
85	110	12000	0.000023	30.36	17.16	30	77.52	
90	115	12000	0.000023	31.74	17.16	30	78.90	



### 140mm dia Aluminium Busbar

Busbar Diameter			140X10					
Ambient Temperature Ref	Temperature Effect	Max Busbar Length	C.F	Thermal Expansion MM	SC Displacement	Safety Factor/Endcap	Setting Distance	
-25	0	14000	0.000023	0.00	21.61	30	51.61	
-20	5	14000	0.000023	1.61	21.61	30	53.22	
-15	10	14000	0.000023	3.22	21.61	30	54.83	
-10	15	14000	0.000023	4.83	21.61	30	56.44	
-5	20	14000	0.000023	6.44	21.61	30	58.05	
0	25	14000	0.000023	8.05	21.61	30	59.66	
5	30	14000	0.000023	9.66	21.61	30	61.27	
10	35	14000	0.000023	11.27	21.61	30	62.88	
15	40	14000	0.000023	12.88	21.61	30	64.49	
20	45	14000	0.000023	14.49	21.61	30	66.10	
25	50	14000	0.000023	16.10	21.61	30	67.71	
30	55	14000	0.000023	17.71	21.61	30	69.32	
35	60	14000	0.000023	19.32	21.61	30	70.93	
40	65	14000	0.000023	20.93	21.61	30	72.54	
45	70	14000	0.000023	22.54	21.61	30	74.15	
50	75	14000	0.000023	24.15	21.61	30	75.76	
55	80	14000	0.000023	25.76	21.61	30	77.37	
60	85	14000	0.000023	27.37	21.61	30	78.98	
65	90	14000	0.000023	28.98	21.61	30	80.59	
70	95	14000	0.000023	30.59	21.61	30	82.20	
75	100	14000	0.000023	32.20	21.61	30	83.81	
80	105	14000	0.000023	33.81	21.61	30	85.42	
85	110	14000	0.000023	35.42	21.61	30	87.03	
90	115	14000	0.000023	37.03	21.61	30	88.64	

### 190mm dia Aluminium Busbar

Busbar Diameter			190X10 190X12.5				
Ambient Temperature Ref	Temperature Effect	Max Busbar Length	C.F	Thermal Expansion MM	SC Displacement	Safety Factor/Endcap	Setting Distance
-25	0	17500	0.000023	0.00	11.08	30	41.08
-20	5	17500	0.000023	2.01	11.08	30	43.09
-15	10	17500	0.000023	4.03	11.08	30	45.11
-10	15	17500	0.000023	6.04	11.08	30	47.12
-5	20	17500	0.000023	8.05	11.08	30	49.13
0	25	17500	0.000023	10.06	11.08	30	51.14
5	30	17500	0.000023	12.08	11.08	30	53.16
10	35	17500	0.000023	14.09	11.08	30	55.17
15	40	17500	0.000023	16.10	11.08	30	57.18
20	45	17500	0.000023	18.11	11.08	30	59.19
25	50	17500	0.000023	20.13	11.08	30	61.21
30	55	17500	0.000023	22.14	11.08	30	63.22
35	60	17500	0.000023	24.15	11.08	30	65.23
40	65	17500	0.000023	26.16	11.08	30	67.24
45	70	17500	0.000023	28.18	11.08	30	69.26
50	75	17500	0.000023	30.19	11.08	30	71.27
55	80	17500	0.000023	32.20	11.08	30	73.28
60	85	17500	0.000023	34.21	11.08	30	75.29
65	90	17500	0.000023	36.23	11.08	30	77.31
70	95	17500	0.000023	38.24	11.08	30	79.32
75	100	17500	0.000023	40.25	11.08	30	81.33
80	105	17500	0.000023	42.26	11.08	30	83.34
85	110	17500	0.000023	44.28	11.08	30	85.36
90	115	17500	0.000023	46.29	11.08	30	87.37

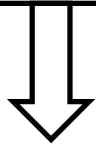


### 200mm dia Aluminium Busbar

Busbar Diameter			200X8				
Ambient Temperature Ref	Temperature Effect	Max Busbar Length	C.F	Thermal Expansion MM	SC Displacement	Safety Factor/Endcap	Setting Distance
-25	0	18500	0.000023	0.00	28.36	30	58.36
-20	5	18500	0.000023	2.13	28.36	30	60.49
-15	10	18500	0.000023	4.26	28.36	30	62.62
-10	15	18500	0.000023	6.38	28.36	30	64.74
-5	20	18500	0.000023	8.51	28.36	30	66.87
0	25	18500	0.000023	10.64	28.36	30	69.00
5	30	18500	0.000023	12.77	28.36	30	71.13
10	35	18500	0.000023	14.89	28.36	30	73.25
15	40	18500	0.000023	17.02	28.36	30	75.38
20	45	18500	0.000023	19.15	28.36	30	77.51
25	50	18500	0.000023	21.28	28.36	30	79.64
30	55	18500	0.000023	23.40	28.36	30	81.76
35	60	18500	0.000023	25.53	28.36	30	83.89
40	65	18500	0.000023	27.66	28.36	30	86.02
45	70	18500	0.000023	29.79	28.36	30	88.15
50	75	18500	0.000023	31.91	28.36	30	90.27
55	80	18500	0.000023	34.04	28.36	30	92.40
60	85	18500	0.000023	36.17	28.36	30	94.53
65	90	18500	0.000023	38.30	28.36	30	96.66
70	95	18500	0.000023	40.42	28.36	30	98.78
75	100	18500	0.000023	42.55	28.36	30	100.91
80	105	18500	0.000023	44.68	28.36	30	103.04
85	110	18500	0.000023	46.81	28.36	30	105.17
90	115	18500	0.000023	48.93	28.36	30	107.29

### 220mm dia Aluminium Busbar

Busbar Diameter			220X8					
Ambient Temperature Ref	Temperature Effect	Max Busbar Length	C.F	Thermal Expansion MM	SC Displacement	Safety Factor/Endcap	Setting Distance	
-25	0	19250	0.000023	0.00	19.38	30	49.38	
-20	5	19250	0.000023	2.21	19.38	30	51.59	
-15	10	19250	0.000023	4.43	19.38	30	53.81	
-10	15	19250	0.000023	6.64	19.38	30	56.02	
-5	20	19250	0.000023	8.86	19.38	30	58.24	
0	25	19250	0.000023	11.07	19.38	30	60.45	
5	30	19250	0.000023	13.28	19.38	30	62.66	
10	35	19250	0.000023	15.50	19.38	30	64.88	
15	40	19250	0.000023	17.71	19.38	30	67.09	
20	45	19250	0.000023	19.92	19.38	30	69.30	
25	50	19250	0.000023	22.14	19.38	30	71.52	
30	55	19250	0.000023	24.35	19.38	30	73.73	
35	60	19250	0.000023	26.57	19.38	30	75.95	
40	65	19250	0.000023	28.78	19.38	30	78.16	
45	70	19250	0.000023	30.99	19.38	30	80.37	
50	75	19250	0.000023	33.21	19.38	30	82.59	
55	80	19250	0.000023	35.42	19.38	30	84.80	
60	85	19250	0.000023	37.63	19.38	30	87.01	
65	90	19250	0.000023	39.85	19.38	30	89.23	
70	95	19250	0.000023	42.06	19.38	30	91.44	
75	100	19250	0.000023	44.28	19.38	30	93.66	
80	105	19250	0.000023	46.49	19.38	30	95.87	
85	110	19250	0.000023	48.70	19.38	30	98.08	
90	115	19250	0.000023	50.92	19.38	30	100.30	



### 250mm dia Aluminium Busbar

Busbar Diameter			250X8WALL 250X10WALL					
Ambient Temperature Ref	Temperature Effect	Max Busbar Length	C.F	Thermal Expansion MM	SC Displacement	Safety Factor/Endcap	Setting Distance	
-25	0	20500	0.000023	0.00	13.6	30	43.6	
-20	5	20500	0.000023	2.36	13.6	30	45.96	
-15	10	20500	0.000023	4.72	13.6	30	48.32	
-10	15	20500	0.000023	7.07	13.6	30	50.67	
-5	20	20500	0.000023	9.43	13.6	30	53.03	
0	25	20500	0.000023	11.79	13.6	30	55.39	
5	30	20500	0.000023	14.15	13.6	30	57.75	
10	35	20500	0.000023	16.50	13.6	30	60.10	
15	40	20500	0.000023	18.86	13.6	30	62.46	
20	45	20500	0.000023	21.22	13.6	30	64.82	
25	50	20500	0.000023	23.58	13.6	30	67.18	
30	55	20500	0.000023	25.93	13.6	30	69.53	
35	60	20500	0.000023	28.29	13.6	30	71.89	
40	65	20500	0.000023	30.65	13.6	30	74.25	
45	70	20500	0.000023	33.01	13.6	30	76.61	
50	75	20500	0.000023	35.36	13.6	30	78.96	
55	80	20500	0.000023	37.72	13.6	30	81.32	
60	85	20500	0.000023	40.08	13.6	30	83.68	
65	90	20500	0.000023	42.44	13.6	30	86.04	
70	95	20500	0.000023	44.79	13.6	30	88.39	
75	100	20500	0.000023	47.15	13.6	30	90.75	
80	105	20500	0.000023	49.51	13.6	30	93.11	
85	110	20500	0.000023	51.87	13.6	30	95.47	
90	115	20500	0.000023	54.22	13.6	30	97.82	



7. HANDLING AND STORAGE

**Handling:** Read instructions before use. Ensure spray button is directed away from the face before spraying. Ensure adequate ventilation.

**Storage:** Store in a cool, dry area away from direct sources of heat and sunlight. Do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after useful life is over. Do not spray on or near naked flames or any incandescent materials or devices.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Avoid inhalation of vapours and contact with eyes.

**Workplace exposure limits:** - EH40

Ingredient name	% wt/wt	Long term exposure limit (8-hour TWA)		Short term exposure limit (15 minute)	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Butane	< 50	600	1450	750	1810
Isoparaffinic hydrocarbons (recommended)	< 70	300	-	-	-

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical form: Pressurised liquid

Colour: Clear

Odour: Paraffinic

Boiling point (°C): 155 (active liquid)

Melting point (°C): < 0 (active liquid)

Flash point (°C): - 40 (propellant gas)

Flammability: Extremely flammable

Autoflammability (°C): > 200

Oxidising properties: Not applicable

Explosive properties (% vol in air @ 25°C) - LEL: 0.8  
UEL: 9.0

Vapour pressure: Not determined

Vapour density: Greater than air

Evaporation rate (n-but Ac = 1): Not applicable

Viscosity: Not applicable

Specific gravity (@ 20°C): Not applicable

Bulk density (KG/LT): Not applicable

Solubility: Insoluble in water

pH, neat: Not applicable

pH, (0.5% aqueous): Not applicable

Partition coefficient (n-octanol/water): Not determined

Can pressure (bar): 3.0

VOC content (g/L): 400

10. STABILITY AND REACTIVITY

**General:** Stable product when handled and stored as directed.

**Materials to avoid:** Oxidising agents, reducing agents, acids and alkalis.

**Conditions to avoid:** Direct sources of heat and prolonged exposure to sunlight.

**Hazardous decomposition products:** Carbon monoxide, carbon dioxide and products of incomplete combustion if involved in a fire.

11. TOXICOLOGICAL INFORMATION

Low systemic toxicity. Ingestion of appreciable quantities may cause nausea, vomiting and diarrhoea. Deliberate inhalation, as in the case of solvent abuse, may produce narcotic effects and other symptoms of central nervous system depression.

12. ECOLOGICAL INFORMATION

**Mobility** : Insoluble in water. Will float and eventually evaporate.

**Degradability** : Slowly but ultimately biodegradable.

**Accumulation** : No long term accumulation potential.

**Ecotoxicity** : No acute toxicity to aquatic organisms is expected at the maximum water solubility of this material. Long term adverse effects are unlikely due to containment.

13. DISPOSAL CONSIDERATIONS

Segregate spent aerosol containers from other waste.

Classification is by use of the European Waste Catalogue and Hazardous Waste List (EWC). Unused product is as below:

EWC chapter sub-heading : Waste organic solvents, refrigerants and foam/aerosol propellants  
 EWC 6-digit code : 14 06 03  
 EWC description : Other solvents and solvent mixtures  
 Waste type : Hazardous  
 Hazard properties : H3-A

Dispose of via authorised waste management company ensuring compliance with local and national regulations. Furnish the waste management company with a copy of this document. Do not dump indiscriminately. Essentially empty packaging should be treated as regulated waste.

14. TRANSPORT INFORMATION

UN N°: 1950 CLASS: 2 SUBSIDIARY RISK: N/A PACKING GROUP: N/A

PROPER SHIPPING NAME: AEROSOLS.

ADR/RID	HI N°	: N/A
	Packing instruction	: P003
IMO	EmS schedule	: F - D, S - U
	MFAG Table N°	: 4, 7 & 8
	Marine pollutant	: No
	Packing instruction	: P003
IATA	Packing Instruction -	
	Passenger	: 203
	Cargo	: 203
	IATA specific PSN	: Aerosols, flammable
	IATA specific class	: 2.1

15. REGULATORY INFORMATION

Ingredients listed in Approved Supply List : Butane, isoparaffinic hydrocarbons  
 Product classified under CHIP as : Extremely flammable (F+)

Contains : Not applicable

Risk phrases : None

Safety phrases : S2 - 16 - 23 - 24/25

The aerosol carries a statutory caution statement as agreed by the British Aerosol Manufacturers Association (BAMA).

16. OTHER INFORMATION

The information contained in this Material Safety Data Sheet is valid at the date indicated. Containers are pre-printed and stock rotated, therefore older containers may show pre-updated information.

This document has been compiled in accordance with the guidance given in the Approved Code of Practice (ACOP): The compilation of safety data sheets (Third edition), Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 (CHIP 3).

# SAFETY DATA SHEET

## OCG™5000

According to Regulation (EC) No 1907/2006, Annex II, as amended by Regulation (EU) No 453/2010

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

#### 1.1. Product identifier

Product name OCG™5000

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

Identified uses Grease.

Uses advised against No specific uses advised against are identified.

#### 1.3. Emergency telephone number

Emergency telephone +44(0) 161 775 7771

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Not Classified

Environmental hazards Not Classified

#### 2.2. Label elements

Hazard statements NC Not Classified

#### 2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures



## OCG™ 5000

<b>Distillates (petroleum), hydrotreated heavy naphthenic &lt;3% DMSO</b>			<b>60-100%</b>
CAS number: 64742-52-5	EC number: 265-155-0	REACH registration number: 01-2119467170-45-0002	
<b>Classification</b> Not Classified			
<b>propylene carbonate</b>			<b>1-5%</b>
CAS number: 108-32-7	EC number: 203-572-1	REACH registration number: 01-2119537232-48-XXXX	
<b>Classification</b> Eye Irrit. 2 - H319			

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

#### SECTION 4: First aid measures

##### 4.1. Description of first aid measures

<b>General information</b>	If in doubt, get medical attention promptly. Show this Safety Data Sheet to the medical personnel.
<b>Inhalation</b>	No specific recommendations. If throat irritation or coughing persists, proceed as follows. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Loosen tight clothing such as collar, tie or belt. Get medical attention if any discomfort continues.
<b>Ingestion</b>	No specific recommendations. If throat irritation or coughing persists, proceed as follows. Rinse mouth. Get medical attention if any discomfort continues.
<b>Skin contact</b>	No specific recommendations. Rinse with water. Get medical attention if any discomfort continues.
<b>Eye contact</b>	Rinse with water. Get medical attention if any discomfort continues.
<b>Protection of first aiders</b>	Use protective equipment appropriate for surrounding materials.

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

<b>General information</b>	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
<b>Inhalation</b>	No specific symptoms known.
<b>Ingestion</b>	No specific symptoms known. May cause discomfort if swallowed.
<b>Skin contact</b>	Prolonged contact may cause dryness of the skin.
<b>Eye contact</b>	No specific symptoms known. May be slightly irritating to eyes.

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

<b>Notes for the doctor</b>	Treat symptomatically.
<b>Specific treatments</b>	No special treatment required.

#### SECTION 5: Firefighting measures

##### 5.1. Extinguishing media

## OCG™ 5000

**Suitable extinguishing media** The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

### 5.2. Special hazards arising from the substance or mixture

**Specific hazards** None known.

**Hazardous combustion products** Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours.

### 5.3. Advice for firefighters

**Protective actions during firefighting** Avoid breathing fire gases or vapours. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out.

**Special protective equipment for firefighters** Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

**Personal precautions** No specific recommendations. For personal protection, see Section 8.

### 6.2. Environmental precautions

**Environmental precautions** Avoid discharge into drains or watercourses or onto the ground.

### 6.3. Methods and material for containment and cleaning up

**Methods for cleaning up** Reuse or recycle products wherever possible. Collect spillage with a shovel and broom, or similar and reuse, if possible. Collect and place in suitable waste disposal containers and seal securely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dispose of contents/container in accordance with national regulations.

### 6.4. Reference to other sections

**Reference to other sections** For personal protection, see Section 8.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

**Usage precautions** Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Keep container tightly sealed when not in use.

**Advice on general occupational hygiene** Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse.

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage precautions** No specific recommendations.

**Storage class** Unspecified storage.

### 7.3. Specific end use(s)

**Specific end use(s)** The identified uses for this product are detailed in Section 1.2.

## SECTION 8: Exposure Controls/personal protection

## OCG™ 5000

### 8.1. Control parameters

#### Occupational exposure limits

##### diphenylamine

Long-term exposure limit (8-hour TWA): WEL 10 mg/m<sup>3</sup>

Short-term exposure limit (15-minute): WEL 20 mg/m<sup>3</sup>

WEL = Workplace Exposure Limit

#### Distillates (petroleum), hydrotreated heavy naphthenic <3% DMSO (CAS: 64742-52-5)

##### DNEL

Workers - Inhalation; Long term local effects: 5.4 mg/m<sup>3</sup>

### 8.2. Exposure controls

#### Appropriate engineering controls

No specific ventilation requirements.

#### Eye/face protection

No specific eye protection required during normal use. Large Spillages: Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible.

#### Hand protection

No specific hand protection recommended. Large Spillages: Wear protective gloves.

#### Hygiene measures

Wash hands thoroughly after handling. Wash at the end of each work shift and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.

#### Respiratory protection

No specific recommendations. Provide adequate ventilation. Large Spillages: If ventilation is inadequate, suitable respiratory protection must be worn.

#### Environmental exposure controls

Not regarded as dangerous for the environment.

## SECTION 9: Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

#### Appearance

Grease.

#### Colour

Yellow. to Brown.

#### Odour

Characteristic.

#### Relative density

~ 0.940

#### Solubility(ies)

Immiscible with water. Miscible with the following materials: Chloroform.

#### Oxidising properties

The mixture itself has not been tested but none of the ingredient substances meet the criteria for classification as oxidising.

### 9.2. Other information

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

#### Reactivity

There are no known reactivity hazards associated with this product.

### 10.2. Chemical stability

#### Stability

Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.

### 10.3. Possibility of hazardous reactions

#### Possibility of hazardous reactions

No potentially hazardous reactions known.

## OCG™ 5000

### 10.4. Conditions to avoid

**Conditions to avoid** There are no known conditions that are likely to result in a hazardous situation.

### 10.5. Incompatible materials

**Materials to avoid** No specific material or group of materials is likely to react with the product to produce a hazardous situation.

### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

**Toxicological effects** Not regarded as a health hazard under current legislation.

#### Acute toxicity - oral

**Notes (oral LD<sub>50</sub>)** Based on available data the classification criteria are not met.

#### Acute toxicity - dermal

**Notes (dermal LD<sub>50</sub>)** Based on available data the classification criteria are not met.

#### Acute toxicity - inhalation

**Notes (inhalation LC<sub>50</sub>)** Based on available data the classification criteria are not met.

#### Skin corrosion/irritation

**Animal data** Based on available data the classification criteria are not met.

#### Serious eye damage/irritation

**Serious eye damage/irritation** Based on available data the classification criteria are not met.

#### Respiratory sensitisation

**Respiratory sensitisation** Based on available data the classification criteria are not met.

#### Skin sensitisation

**Skin sensitisation** Based on available data the classification criteria are not met.

#### Germ cell mutagenicity

**Genotoxicity - in vitro** Based on available data the classification criteria are not met.

#### Carcinogenicity

**Carcinogenicity** Based on available data the classification criteria are not met.

#### IARC carcinogenicity

None of the ingredients are listed or exempt.

#### Reproductive toxicity

**Reproductive toxicity - fertility** Based on available data the classification criteria are not met.

**Reproductive toxicity - development**

Based on available data the classification criteria are not met.

#### Specific target organ toxicity - single exposure

**STOT - single exposure** Not classified as a specific target organ toxicant after a single exposure.

#### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** Not classified as a specific target organ toxicant after repeated exposure.

#### Aspiration hazard

**OCG™ 5000**

<b>Aspiration hazard</b>	Not relevant. Solid.
<b>General information</b>	No specific health hazards known. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
<b>Inhalation</b>	No specific symptoms known.
<b>Ingestion</b>	No specific symptoms known. May cause discomfort if swallowed.
<b>Skin contact</b>	Prolonged contact may cause dryness of the skin.
<b>Eye contact</b>	No specific symptoms known. May be slightly irritating to eyes.
<b>Route of entry</b>	Ingestion Inhalation Skin and/or eye contact
<b>Target organs</b>	No specific target organs known.

**Toxicological information on ingredients.****propylene carbonate****Acute toxicity - oral**

**Acute toxicity oral (LD<sub>50</sub>)** 32,319.0  
mg/kg)

**Species** Rat

**Acute toxicity - dermal**

**Acute toxicity dermal (LD<sub>50</sub>)** 20,000.0  
mg/kg)

**Species** Rabbit

**SECTION 12: Ecological Information**

**Ecotoxicity** Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

**12.1. Toxicity**

**Toxicity** Based on available data the classification criteria are not met.

**12.2. Persistence and degradability**

**Persistence and degradability** The degradability of the product is not known.

**12.3. Bioaccumulative potential**

**Bioaccumulative potential** No data available on bioaccumulation.

**12.4. Mobility in soil**

**Mobility** No data available.

**12.5. Results of PBT and vPvB assessment****12.6. Other adverse effects**

**Other adverse effects** None known.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods**

## OCG™ 5000

<b>General information</b>	The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way.
<b>Disposal methods</b>	Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste packaging should be collected for reuse or recycling. Incineration or landfill should only be considered when recycling is not feasible. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority.

### SECTION 14: Transport information

<b>General</b>	The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).
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#### 14.1. UN number

Not applicable.

#### 14.2. UN proper shipping name

Not applicable.

#### 14.3. Transport hazard class(es)

No transport warning sign required.

#### 14.4. Packing group

Not applicable.

#### 14.5. Environmental hazards

##### **Environmentally hazardous substance/marine pollutant**

No.

#### 14.6. Special precautions for user

Not applicable.

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

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

### SECTION 15: Regulatory information

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

##### **National regulations**

Health and Safety at Work etc. Act 1974 (as amended).  
 The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).  
 The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].  
 EH40/2005 Workplace exposure limits.

## OCG™5000

### EU legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

Commission Regulation (EU) No 453/2010 of 20 May 2010.

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

Dangerous Preparations Directive 1999/45/EC.

Dangerous Substances Directive 67/548/EEC.

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

### SECTION 16: Other information

<b>Training advice</b>	Only trained personnel should use this material.
<b>Revision date</b>	26/01/2017
<b>Revision</b>	1
<b>SDS number</b>	4795
<b>Hazard statements in full</b>	H319 Causes serious eye irritation.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.



## Silirub 2

Revision: 27/05/2020

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### Technical data

Basis	Polysiloxane
Consistency	Stable paste
Curing system	Moisture curing
Skin formation* (23°C/50% R.H.)	Ca. 9 min
Curing speed * (23°C/50% R.H.)	Ca. 2 mm/24h
Hardness**	25 ± 5 Shore A
Density**	Ca. 1,03 g/ml (transp, brilliant white) Ca. 1,25 g/ml (colours)
Elastic recovery (ISO 7389)**	> 80 %
Maximum allowed distortion (ISO 11600)	25 %
Max. tension (ISO 37)**	Ca. 1,25 N/mm <sup>2</sup>
Elasticity modulus 100% (ISO 37)**	Ca. 0,39 N/mm <sup>2</sup>
Elongation at break (ISO 37)**	> 700 %
Temperature resistance**	-60 °C → 180 °C
Application temperature	5 °C → 35 °C
Water vapor diffusion resistance factor (μ)	655
Water vapor permeability (Sd)	2,40 m

\* These values may vary depending on environmental factors such as temperature, moisture, and type of substrates. \*\* This information relates to fully cured product.

### Product description

Silirub 2 is a high quality, elastic, 1-component sealant based on silicones.

### Properties

- Very easy to apply
- UV-resistant
- Neutral curing
- Low modulus
- Very good resistance to ageing
- Excellent moisture resistance
- Permanently elastic after curing
- Very good adhesion on many materials
- Not paintable
- Not suitable for natural stone

### Applications

- All usual building joints with high movement.
- Glazing and joint works.
- Expansion joints between many different construction materials.
- Sealing between PVC, treated wooden and metal profiles and glass.

### Packaging

*Colour:* transparent, white, grey, alu grey, black, brown, teak, bronze, beige, light brown, oak, stone, dark brown, natural stone, terra cotta, buff, brilliant white, toffee, basalt grey, dark grey

*Packaging:* 310 ml cartridge, 300 ml foilbag, 600 ml foil bag

### Shelf life

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

### Chemical resistance

Resistant to intermittent exposure to salt water, detergents, oils, weak acids and bases (preliminary test required). Poor resistance to aromatic solvents, concentrated acids and chlorinated hydrocarbons.

### Substrates

*Substrates:* all usual building substrates

*Nature:* rigid, clean, dry, free of dust and grease.

Remark: This technical data sheet replaces all previous versions. The directives contained in this documentation are the result of our experiments and of our experience and have been submitted in good faith. Because of the diversity of the materials and substrates and the great number of possible applications which are out of our control, we cannot accept any responsibility for the results obtained.

## Silirub 2

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*Surface preparation:* Silirub 2 has a good adhesion to most substrates. However, for optimal adhesion and in critical applications, such as joints exposed to extreme weather conditions, high- or water-loaded joints, we recommend to follow a pre-treatment procedure. Prepare non-porous surfaces with a Soudal activator or cleaner (see Technical Data Sheet). Porous surfaces should be primed with Primer 150. There is no adhesion on PE, PP, PTFE (Teflon®) and bituminous substrates. We recommend a preliminary adhesion and compatibility test on every surface.

### Compatibility with glass

Tests carried out in our laboratories show that Silirub 2 is compatible with most edge seals of insulating double glazing and conventional PVB films. External testing at TÜV Rheinland have shown no visual defects or no other inconsistencies that were found between the secondary seal or PVB film and Silirub 2 after exposure to high temperature and humidity (Report No. 12490R-a-89202273). Due to the large number of edge sealing systems on the market, it is impossible to test the compatibility of all combinations with glazing sealants.

### Joint dimensions

*Min. width for joints:* 5 mm

*Max. width for joints:* 30 mm

*Min. depth for joints:* 5 mm Recommendation sealing jobs: joint width = 2 x joint depth.

### Application method

Apply the product by means of a manual-, battery- or pneumatic- caulking gun. Apply Silirub 2 evenly without air inclusions into the joint. Smoothen the joint with a spatula with the help of finishing solution. Avoid that soapy solution comes between the joint edges and sealant (to prevent adhesion loss). *Application method:* With a manual, pneumatic or accu caulking gun.

*Cleaning:* Clean with Soudal Surface Cleaner or with Soudal Swipex, immediately after use

Cured Silirub 2 can only be removed mechanically.

*Finishing:* With a soapy solution or Soudal Finishing Solution before skinning. *Repair:* With the same material.

### Health- and Safety Recommendations

Take the usual labour hygiene into account. Consult label and material safety data sheet for more information.

### Remarks

- Do not use on natural stones like marble, granite,...(staining). Use Soudal Silirub MA or Silirub+ S8800 for this application.
- A total absence of UV can cause a color change of the sealant.
- Discoloration due to chemicals, high temperatures, UV-radiation may occur. A change in color does not affect the technical properties of the product.
- In an acid environment or in a dark room, a white sealant can slightly turn yellow. Under the influence of sunlight it will turn back to its initial colour.
- We strongly recommend not to apply the Finishing Solution in full sunlight as it will dry very fast in these circumstances.
- When finished with a finishing solution or soapy solution, make sure that the surfaces are not touched by this solution. This will cause the sealant not to adhere to that surface. Therefore we recommend to only dip the finishing tool in this solution.
- Do not use in applications where continuous water immersion is possible. ☐ Not suitable for bonding aquariums.
- When using different reactive joint sealants, the first joint sealant must be completely hardened before the next one is applied.
- Contact with bitumen, tar or other plasticizer releasing materials such as EPDM, neoprene, butyl, etc. is to be avoided since it can give rise to discolouration and loss of adhesion.

Remark: This technical data sheet replaces all previous versions. The directives contained in this documentation are the result of our experiments and of our experience and have been submitted in good faith. Because of the diversity of the materials and substrates and the great number of possible applications which are out of our control, we cannot accept any responsibility for the results obtained. Since the design, the quality of the substrate and processing conditions are beyond our control, no liability under this publication is accepted. In every case it is recommended to carry out preliminary experiments. Soudal reserves the right to modify products without prior notice.

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## Silirub 2

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### Standards and certificates

- Belgium: ATG 1808 (NIT 107) Conform to ISO 11600 F+G 25LM

### Environmental clauses

#### *Leed regulation:*

Silirub 2 conforms to the requirements of LEED. Low –Emitting Materials: Adhesives and Sealants. SCAQMD rule 1168. Complies with USGBC LEED 2009 Credit 4.1: Low-Emitting Materials – Adhesives & Sealants concerning the VOC-content.

### Liability

The content of this technical data sheet is the result of tests, monitoring and experience. It is general in nature and does not constitute any liability. It is the responsibility of the user to determine by his own tests whether the product is suitable for the application.

Remark: This technical data sheet replaces all previous versions. The directives contained in this documentation are the result of our experiments and of our experience and have been submitted in good faith. Because of the diversity of the materials and substrates and the great number of possible applications which are out of our control, we cannot accept any responsibility for the results obtained. Since the design, the quality of the substrate and processing conditions are beyond our control, no liability under this publication is accepted. In every case it is recommended to carry out preliminary experiments. Soudal reserves the right to modify products without prior notice.

# WARNING

**DC NOT USE IMPACT  
WRENCHES ON OUR PRODUCTS  
THESE MAY DAMAGE  
THE THREADS**



This is Rated up to 180Nm

**PLEASE USE MAI UAL  
TORQUI WRENCHES**

**Right Tool for the Job**



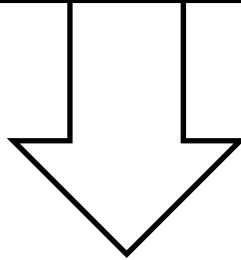
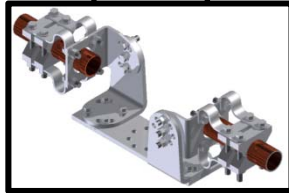
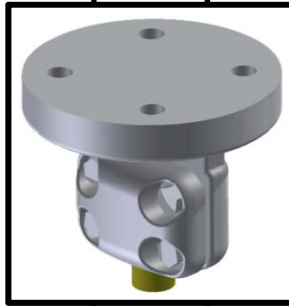
**Torque Settings**

	U Bolts
M12 – 50Ntr	M12 – 88Nm
M16 – 90Ntr	M16 – 95Nm
M20 – 150Ntr	



**Connectors and Switchgear Ltd**  
25 Chacombe Road, Banbury, OXON  
01295 710505 / 710408

IF IN DOUBT PLEASE ASK!



## Connectors and Switchgear Ltd

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