

# Test Report

REPORT NO. MA3397/X

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## Silicone Carbide

a) Hexoloy SA

b) Hexoloy SP


**CLIENT:**

Saint-Gobain Ceramics  
23 Acheson Drive  
Niagara Falls  
New York 14303  
USA

  
JENNY TSANG  
MATERIALS CHEMIST

DATE: 6 MARCH+  
2007

CLIENT'S REFERENCE: Paul Faker

  
GILL MIDDLETON  
HEAD OF MATERIALS  
TESTING

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**SUITABILITY OF NON-METALLIC PRODUCTS FOR USE IN CONTACT WITH WATER INTENDED FOR HUMAN CONSUMPTION WITH REGARD TO THEIR EFFECT ON THE QUALITY OF THE WATER  
WRAS TESTS OF EFFECT ON WATER QUALITY (BS 6920: 2000)  
AUDIT TESTS; HIGH TEMPERATURE TESTS (BS6920: PART 3: 2000)**

**INFORMATION AND GUIDANCE NOTE**

**Water Regulations Advisory Scheme**

The Scheme wishes to draw to the attention of product manufacturers and users that reports issued by accredited test laboratories do not of themselves constitute approval by the Scheme or the test laboratory. Only a letter from the Scheme, citing a Directory Reference Number, can be regarded as indicating approval.

**1. SAMPLES FOR TESTING**

General composition of products	silicone carbide
Trade names and references of materials	a) Hexoloy SA b) Hexoloy SP
Material manufacturer	Saint Gobain Advanced Ceramics
Component names and references	a) tiles: part number 45225 b) tiles: part number 12765
Component manufacturer	Saint Gobain Advanced Ceramics
Submitting organisation	Saint Gobain Advanced Ceramics
Batch numbers of products	information not supplied
Dates of manufacture of products	December 2006
Description of samples	grey opaque shiny plaque
Method of manufacture of samples	information not supplied
Sampling procedures	information not supplied
Surface area of test pieces	14697mm <sup>2</sup>
Number of articles constituting test pieces	1
Dimensions of test pieces: length/width/ thickness:	100mm/70mm/2.05mm
Calibration mark of test containers	1 litre
Date of receipt of test samples	18 December 2006
Condition of samples on receipt	satisfactory
Method of packaging	plastic packaging
Conditions of storage of the samples between receipt and testing	as instructed in BS6920-2.1: 2000: clause 5.2

Proposed use of the products

mechanical pump seals

**2. ODOUR AND FLAVOUR OF WATER**

Extraction temperature - 85°C

Date tests commenced – 16 January 2007

Number of tasters in the taste panel – 3

**product a)**

Extract 1

(i) chlorine free test water:

Taster	Odour description	Flavour description	Flavour dilution number
1	nil	nil	<1
2	nil	nil	<1
3	nil	nil	<1

(ii) chlorinated test water:

Taster	Odour description	Flavour description	Flavour dilution number
1	nil	nil	<1
2	nil	nil	<1
3	nil	nil	<1

**product b)**

Extract 1

(i) chlorine free test water:

Taster	Odour description	Flavour description	Flavour dilution number
1	nil	N/A	N/A
2	musty	N/A	N/A
3	nil	N/A	N/A

(ii) chlorinated test water:

Taster	Odour description	Flavour description	Flavour dilution number
1	nil	nil	<1
2	nil	nil	<1
3	nil	nil	<1

Extract 7 (final extract)

(i) chlorine free test water:

Taster	Odour description	Flavour description	Flavour dilution number
1	nil	nil	<1
2	nil	nil	<1
3	nil	nil	<1

Comment - thus the samples of these products have been found to comply with the requirements of BS 6920: Part 1: clause 4 when extracted at 85°C.

**3. GROWTH OF AQUATIC MICROORGANISMS**

**product a) only**

Date test commenced – 19 December 2006

Mean dissolved oxygen differences -

Test container (product)	0.1mg/l
Negative reference (glass) sample	0.3mg/l
Positive reference (wax) sample	6.1mg/l
Mean dissolved oxygen concentration of the negative control	7.7mg/l

Note - At the end of this test the test piece showed no changes in colour and appearance.

Comments - thus the sample of this product has been found to comply with the requirements of BS 6920: Part 1: clause 6.

**4. THE EXTRACTION OF METALS**

**product a) only**

Extraction temperature - 85°C

Date test commenced – 5 February 2007

Number of extracts - 1

All analyses (except Mercury) carried out under UKAS accreditation number 1550 on duplicate samples of the product as specified below

Aluminium, Antimony, Arsenic, Barium, Cadmium, Chromium, Iron, Lead, Manganese, Mercury, Nickel, Selenium: Inductively coupled plasma emission spectroscopy (ICP-MS) method code ING113 ICP-MS

**Extract 1**

Metal	Expression of the results	Max. admissible concentration	Reporting Limit	Concentration Final Extract		Determined Reagent Blanks
				I	II	
Aluminium	Al µg/L	200	20.0	47.2	28.5	< 20.0
Antimony	Sb µg/L	5	0.5	< 0.5	< 0.5	< 0.5
Arsenic	As µg/L	10	1.0	< 1.0	< 1.0	< 1.0
Barium	Ba µg/L	1000	100.0	< 100.0	< 100.0	<100.0
Cadmium	Cd µg/L	5	0.5	< 1.0	< 0.5	< 0.5
Chromium	Cr µg/L	50	5.0	< 100.0	< 5.0	< 5.0
Iron	Fe µg/L	200	20.0	< 20.0	< 20.0	< 20.0
Lead	Pb µg/L	25	1.0	1.31	12.0	< 1.0
Manganese	Mn µg/L	50	5.0	< 5.0	< 5.0	< 5.0
Mercury	Hg µg/L	1	0.1	< 0.1	< 0.1	< 0.1
Nickel	Ni µg/L	20	2.0	< 2.0	< 2.0	< 2.0
Selenium	Se µg/L	10	1.0	< 1.0	< 1.0	< 1.0

Comment - thus the samples of this product have been found to comply with the requirements of BS 6920: Part 1: clause 8 when extracted at 85°C.

## CONCLUSION

The samples of the products referred to in this report have been tested in accordance with the methods specified in BS 6920: Part 2: 2000 "Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water: "Methods of test" (including High Temperature Tests in accordance with BS 6920: Part 3: 2000) and the requirements of the Water Regulations Advisory Scheme.

**These products have satisfied the criteria set out in BS 6920: Part 1: 2000 "Specification" and thus complies with the requirements of the Water Regulations Advisory Scheme Tests of Effect on Water Quality (BS 6920: 2000): Audit Tests / Odour & Flavour of Water / Growth of Aquatic Microorganisms (product a) only) / Extraction of Metals (product a) only) / High Temperature Tests.**

NO OTHER TESTS WERE UNDERTAKEN ON THESE PRODUCTS

N.B The results specified in this report relate only to the samples of the products submitted for testing. Any changes in the nature or source of ingredients and the process of manufacture or application could affect the suitability of the products for use in contact with potable water.

Materials and products intended for use by a public water supply company in the preparation or conveyance of water may need to satisfy more comprehensive toxicological requirements as set specified by the Drinking Water Inspectorate. These additional requirements are necessary to ensure legal compliance with Regulation 31 of Water Supply (Water Quality) Regulations 2000.

## NOTE FOR WRAS

Audit tests on products covered by our report ref. MA2641/N dated 21 June 2002 and your letter ref C/JC dated 26 October 2006.