



Thompson Golf Planning Europe

**MEJORIA Y ACONDICIONAMIENTO DE DRENAJE PARA
BUNKER EN EL CENTRO NACIONAL DE GOLF.
MADRID - ESPAÑA**



Thompson Golf Planning Europe

INDICE

- 1.- CONDICIONES GENERALES
- 2.- DOCUMENTACION TÉCNICA DE GRAVA
- 3.- DOCUMENTACIÓN Y FICHA TÉCNICA DEL SPORTCRETE
- 4.- PRESUPUESTO



1.- CONDICIONES GENERALES

Proyecto :	Mejoría y acondicionamiento del sistema de drenaje de bunker
Ubicación :	Madrid, España
Propiedad :	Centro Nacional de Golf

El CENTRO NACIONAL DE GOLF, a quien en lo sucesivo denominaremos “LA PROPIEDAD”, contrata los servicios del denominado proyecto a:

THOMPSON GOLF PLANNING EUROPE (TGPE), denominado de ahora en adelante “LA CONTRATISTA”, los cuales serán los proveedores de los servicios que se regirán de acuerdo a las directrices y fases que se describen a continuación:

1. **Análisis in situ de la situación actual de la obra.** La propiedad deberá facilitar cualquier documentación necesaria relacionada con la obra a ejecutar.
2. **Planificación y definición del alcance de los trabajos que corresponde a cada parte.** Antes del inicio de las obras se deberá definir que trabajos a ejecutar corresponde a cada parte. La contratista entregará la documentación del proyecto y explicará cómo deberán ejecutarse los trabajos que correspondan a la propiedad.
3. **Supervisión y ejecución de las obras.** La contratista será la responsable de la aplicación del producto SPORTCRETE y de las pruebas necesarias para garantizar su correcto funcionamiento. Igualmente será y la encargada de supervisar los trabajos previos y posteriores que correspondan ejecutar por La Propiedad.



2.- DOCUMENTACIÓN TÉCNICA DE LA GRAVA

Debido a que la grava es un material fundamental para la optimización del drenaje, se recomienda seguir las indicaciones de mezcla de las tablas que se muestran a continuación para evitar futuros inconvenientes. La camada superior y la inferior se mezclarán preferiblemente desde la gravera más cercana a la obra para verter directamente sobre el bunker como una mezcla homogénea.

CAMADA SUPERIOR (TERMINACIÓN)

TAMIZ	Requerimiento FT	Muestra #
	% Passing	% Passing
3/4"		
1/2"	100	
3/8"	85-100	
1/4"	75-100	
#4	60-90	
#8	35-75	
#16	10-55	
#30	0-40	
#60	0-15	
#100	0-8	
#200	0-2	

CAMADA INFERIOR

TAMIZ	Requerimiento FT	Muestra #
	% Passing	% Passing
2"	100	
1 1/2"	90-100	
1"	75-100	
3/4"	65-95	
1/2"	55-85	
3/8"	40-75	
4#		
8#	0-40	
10#		
16#	0-20	
30#	0-7	
40#		
60#	0-5	
100#	0-3	
200#	0-2	



3.- DOCUMENTACION DEL SPORTCRETE

How Does Sportcrete Work In Your Bunker

The following represents the how's and why's of Sportcrete used in conjunction with stone to

create an Engineered base for a bunker:

1. The proper stone is selected to provide gradations that are open enough to accept the

Sportcrete liquid, yet closed enough for a sufficient amount of rocks to be touching each other after a light compaction has been accomplished.

2. The Sportcrete is then sprayed on in two coats and penetrates the stone and literally glues

or adheres the touching stones together. Gaps or voids are then left in the 2 inches of stone that allow water to drain through the stabilized stone. The Sportcrete materials are

actually designed to penetrate to a specified depth and setup properly within a short amount of time for ideal finished performance. When the Sportcrete cures within the initial

24 hours of spraying, the stabilized stone approaches the 2500 PSI performance qualities of

concrete...in other words it handles the weight of concrete yet is POROUS. Another specification that compares to concrete and Sportcrete is the mega Pascal measurement.

Concrete is rated at 17 to 20 mega Paschal while Sportcrete is laboratory-rated at 17 mega

Pascal. The point here again is that Sportcrete has characteristics of concrete, yet is porous.

3. Resiliency is also a positive attribute of Sportcrete. Concrete has zero resiliencies; Asphalt is

typically rated at 1 to 4% while Sportcrete is rated at > 20%. This resiliency will allow the Sportcrete-stabilized stone to flex with the subtle movements of soils in the bunker.

4. The cured Sportcrete stone base is lab-tested to drain at a rate of 100 inches of rainfall per

hour while sand is typically rated at about 10 inches per hour!

5. The combination of the 2500 PSI quality and the 100 inches per hour porosity is the magic

of Sportcrete in that it allows the engineered base to create a hydraulic draw or "suction" once rainfall is introduced to the sand. As the water begins to drain through the sand with a

porosity of 10 inches per hour, and reaches the stone, a draw begins to develop because of

the greater porosity of the stone when compared to the sand. This draw or suction pulling

the rainfall vertically through the sand and stone encourages the sand to stay in place rather than move horizontally in the bunker as with other products that do not create this



draw. Erosion of the sand from mostly surface movement of the water without the draw is

the ending result of rainfall in a typical sand bunker. This creates a situation where the maintenance personnel have to reposition the sand by raking it in the bunker, literally pulling the sand by hand up the steeper flashings of modern bunker design.

6. Another important aspect of the Engineered Stone Base is the ENTIRE stone base becomes

a drainage medium. Over a period of time grass, clay soils, or other mediums may begin to

contaminate the sand. While a small portion of these contaminants could manage to reach

the Sportcrete base through the sand, it is virtually inconceivable that enough of the base

could be covered to prevent efficient drainage. This sort of thing would be related much more to a superintendent doing no maintenance as opposed to the possibility of a Sportcrete bunker becoming naturally plugged and not able to drain.

7. Contamination of the bunker from below the soils surface is virtually eliminated because of

the concrete-like performance of the ENGINEERED Sportcrete BASE. This type of contamination is a common problem facing greens superintendents and is one of the problems that other bunker products may address for at least a short period of time.

8. Sportcrete is a patented, environmentally-friendly material for creating and engineered stone base.

In summary, the SPORTCRETE ENGINEERED STONE BASE for sand bunkers is superior to every

other competitive product because it prevents contamination from below the sub soils of the

bunker. It's concrete-like performance and drainage characteristics creates a hydraulic draw

designed to minimize sand movement and erosion during rainfall events and encourages great

drainage performance during rainfall. It will also reduce the amount of time and money spent

in daily operating costs in maintaining bunkers, which produces a superior bunker for golfers

playing the course!

Sportcrete Ltd.

Method Statement.

1. Initial site works. (By contractor)

Clearance of the site to provide a flat and well compacted formation base is required.

2. Drainage scheme. (By contractor)

As designed by consultant, install UPVC drainage system to area outfall to main drainage or soak away.

3. Stone. (By contractor)

Supply and Installation of 200mm (Dependant on ground report) of MOT type 1 stone (Type 1X also suitable if drainage requires) compacted and rolled to +/- 5mm over straight edge.

4. Kerb Edging. (By contractor)

Install 150 x 50mm pre cast concrete edge to line and level.

5. Top stone (By contractor)

Supply and lay 45 mm compacted depth of 5mm – dust granite to surface. On tennis courts, utilising screed rails (on larger areas laser controlled machinery) the material should be screeded to +/- 2mm under a 3m straight edge.

Compaction using a Bomag 55 roller, re screeding to obtain levels and then hand roll using sportcrete 2m light weight roller.

Where necessary, the surface can be hand finished to remove any marks.

Sportcrete are able to help and advise on site during this process, as necessary.

6. Spraying the surface with *sportcrete* (By Sportcrete)

Materials are brought to site in either IBC containers (Silicon) or 230kg barrels (*sportcrete* chemical 3 and hardener)

The pump system is set up. A two way modified mono cp system draws the silicon and hardener mix together at the required mix ratio.

The solution is tested to ensure mix ratios are correct.

The solution is delivered through the spray head to the surface at a rate of between 3 and 4 litres per square metre, depending on type of facility and infiltration required.

The surface is entirely sprayed and checked for regularity and coverage.

Sportcrete will begin to harden within minutes, depending on the ambient temperature and be completely hard within 24 hours and be suitable for laying synthetic surfaces.

Sportcrete are able to provide advice on all stages of construction as necessary.

Sportcrete Ltd.

Data Sheet

Sportcrete is a mixed solution of Sodium Silicate, Ethyleneglycol Diacetate, Water and Sportcrete 'chemical 3'. The precise mixing ratios are not provided in this data sheet.

Use.

Sportcrete has been developed to be used in the construction of artificial sports surfaces. It binds granular surfaces together to form a hard, porous base for installation of synthetic grass.

Application.

Sportcrete is applied using a Mono CP series pump. The solution is delivered through a spray applicator provided by Sportcrete. Application is made to the surface at the prescribed rate for the specific type of facility and ground conditions on site. Normally, this is between 3 and 4 litres per square metre. It is advised that a structural report is completed and passed to Sportcrete for assessment on all projects.

Safety.

Sportcrete is harmful if swallowed and this should be avoided. There are no risks with regard to transport of any of the chemicals used in the process. Silicon is transported in 1000 litre containers, EGDA and Sportcrete chemical 3 are transported in 230 kg drums.

Personal protection.

Protective clothing should be worn including protective gloves for use with chemicals, and protective eye wear.

Properties.

Colour	Colourless
Odour	Odourless
Density	1300-1420kg/m ³ (20c)
Viscosity	20-500 Mpas (20c)
PH Value	Greater than 11.45
Boiling point	Approx 100c
Melting	Approx -3c
Vapour pressure	Approx 2.2 kpa (20c)
Flash point	Non combustible



ISSUE: F
DATE: 4.9.02

Safety data

^1. IDENTIFICATION OF THE SUBSTANCE AND COMPANY

PRODUCT NAME ETHYLENE GLYCOL DIACETATE

ALTERNATIVE NAMES GLYCOL DIACETATE
DIACETOXYETHANE
1,2 ETHANEDIOL DIACETATE

PRINCIPAL CONSTITUENT

FORMULA $\text{CH}_3\text{COOCH}_2\text{CH}_2\text{OCOCH}_3$

MOLECULAR WEIGHT 146.14

COMPANY: TESSENDERLO FINE CHEMICALS LTD

Macclesfield Road

Leek

Staffordshire UK

ST13 8UZ

Tel: +44 (0)1538 399100

Fax: +44 (0)1538 399025

Emergency Tel: +44 (0)1538 399100

^Recommended Use of the Product

Industrial plasticizer and solvent

^2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient Name	CAS No.	^EC No.	Content (%)	Hazard Classification
Ethylene Glycol Diacetate	111-55-7	203-881-1	98	Xn, R22
Ethylene Glycol Monoacetate	542-59-6	208-821-8	2	Xn, R22

3. HAZARD CLASSIFICATION

SUMMARY Harmful if swallowed

For more details see Sections 8, 11, 14 and 15.

Amendment to Sections 1, 2, 5, 6, 7, 8, 9, 12, 15 & 16 on Issue F (marked ^)



4. FIRST AID MEASURES

EYE CONTACT	Rinse continuously with water for at least 10 minutes.
SKIN CONTACT	Shower immediately and remove contaminated clothing.
INHALATION	Fresh air and rest.
INGESTION	Rinse mouth with water and give small amounts of water to drink. NEVER GIVE AN UNCONSCIOUS PATIENT WATER TO DRINK. DO NOT INDUCE VOMITING. Seek immediate medical advice
OTHER	It is only necessary to consult a doctor for a major exposure; this is for ingestion. Show medical staff substance data sheet or ensure information accompanies patient.

^5. FIRE FIGHTING MEASURES

HAZCHEM CODE	None
EXTINGUISHING MEDIA	CO2, Foam, Powder and Water fog/spray.

^SPECIAL FIRE FIGHTING PROCEDURES

Use self contained breathing apparatus as acrid fumes are produced as product decomposes.

UNUSUAL FIRE & EXPOSURE HAZARDS

As above

^6. ACCIDENTAL RELEASE MEASURES

Recover materials if possible. Also absorb spilled substance in sand or inert substance and remove to a safe place. Prevent material entering drains with absorbent socks and drain protectors. After absorption and recovery, wash away traces with large amounts of water. Any absorbent material used to mop up a spill to be disposed of in a closed metal container.

Protective Equipment to be worn for a spill – Chemical splash resistant overalls, Wellingtons or boots, chemical resistant PVC gauntlets and visor.



^7. HANDLING AND STORAGE

^HANDLING

Use in well ventilated areas. Keep containers tightly closed when not in use. Open and handle containers with care. Store in original containers. Avoid breathing vapours or particulate mist. Avoid accumulation of static charge, especially in high mixing systems (low electrical conductivity see Section 9). Emergency shower and eyewash should be close by. Electrical equipment to be suitable for electrical apparatus group and temperature class of the material (see Section 9).

^STORAGE

Store away from oxidising agents. Suitable storage material – 316 Stainless Steel. Do NOT use galvanised metal. Suitable seals - Perfluoroelastomer (Kalrez), suitable gaskets – graphite supported on 316 Stainless steel or asbestos free aramid fibre composite. Storage tanks to be bunded to contain 110% of tank contents, or as local regulations. This product may attack concrete surfaces, particularly in the presence of water

^8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

VENTILATION

No special ventilation required unless used in a spray form. If a spray form is used, suitable ventilation equipment is required. However engineering controls should be aimed for to prevent the need for ventilation.

^PROTECTIVE EQUIPMENT for normal operation, (see section 6 for a spill).

BREATHING

No respiratory protection is required, unless subject to mist contact. See above comments under ventilation.

^PROTECTIVE GLOVES

Use protective gloves/gauntlets made of PVC.

^EYE PROTECTION

Wear close fitting goggles or visor when handling, e.g. sampling.

OTHER PROTECTION

Wear normal industrial workwear to prevent skin contact.

OCCUPATIONAL EXPOSURE LIMITS

There is not an exposure standard set in the UK by the HSE in EH40. Tessenderlo Fine Chemicals has set an internal Company Exposure Standard (CES).

These are: - Vapour $60 \text{ mg/m}^3/8\text{h}$ Particulate Mist $10 \text{ mg/m}^3/8\text{h}$

They are based on the Occupational Exposure Standard for Ethylene Glycol.



9. PHYSICAL AND CHEMICAL PROPERTIES

Colour	Colourless
State at 20°C	Liquid
Odour	Slight
Solubility in water (%w/w at 20°C)	16.4
Solubility of water in product (%w/w at 20°C)	7.6
Density at 20°C	1105-1115 kgm ⁻³
Evaporation Rate (Butyl Acetate = 1) at 20°C	0.07
Vapour Pressure at 20 °C	1 mm Hg
Vapour Density (Air = 1)	5.04
Melting Point	-31°C
Boiling Point	191°C
Viscosity	2.9 mPas
Flash Point	88°C (Closed cup)
Auto Ignition Temperature	482°C
Flammability Limit – Lower	1.6%
Flammability Limit – Upper	8.4%
Decomposition Temperature °C	Not determined
^Odour Threshold	Not Determined
^Henry's Law Constant	1.2 Pa m ³ /mol
^Electrical Conductivity	0.029 μS/cm
^Gas Group and Temperature Class	Group IIB Class T1
^Log Octanol/Water Partition Coefficient	-0.4 (calculated)



10. STABILITY AND REACTIVITY

STABILITY TO HEAT	Stable at least up to 170°C
REACTIVITY	Reacts with strong oxidising agents
REACTION WITH WATER	Very slow hydrolysis can occur to Ethylene Glycol and Acetic acid.
POLYMERISATION HAZARD	None

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA	LD ₅₀ Oral (rat) 6850 mg/kg LD ₅₀ Dermal (rabbit) 8480 mg/kg LDL ₀ Oral (human) 500mg/kg
ACUTE & CHRONIC HEALTH HAZARDS	
ACUTE EFFECTS	
EYE CONTACT	Pain, Redness, Watering
SKIN CONTACT	Redness
INHALATION	Irritation of nose, throat and respiratory tract
INGESTION	Headache, vomiting, diarrhoea
CHRONIC EFFECTS	Kidney damage due to breakdown to oxalic acid via ethylene glycol.
CARCINOGENICITY	No data



^12. ECOLOGICAL INFORMATION

^MOBILITY:	The Henry's Law Constant (from Section 9) shows that there is no clear partition between air and water. The Soil absorption coefficient Koc has been calculated as 0.5, which suggests binding to soil will be very low.
BIODEGRADABILITY:	BOD5/COD > 50%, so readily biodegradable.
BIOACCUMULATION:	Bioconcentration factor has been estimated at 0.3, so bioaccumulation is insignificant.
AQUATIC TOXICITY:	Leopomis macrochirus 96h LC ₅₀ 90ppm and Mendia beryllina 96h LC ₅₀ 78ppm. So harmful to aquatic life, but R52 cannot be allocated on its own.
SUMMARY:	Since the material is readily biodegradable, even though it is harmful to aquatic life, it is not classified as dangerous to the environment, nor allocated any environmental risk phrases.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS Incinerate or treat in a suitable treatment plant.

NOTE

Incineration must be carried out in a suitable high temperature incinerator operated by a registered disposal company. User must ensure that this complies with all local/national laws.

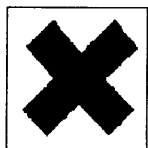
14. TRANSPORT INFORMATION

UN No	Not Classified
PACKING GROUP	Not Classified
ADR/SEA/AIR CLASS No.	Not Classified
ADR HAZARD ID No.	Not Classified
CEPIC TEC(R) (TREM CARD) No.	Not Classified
HAZCHEM	None
LABELS FOR CONVEYANCE	Not Classified



^15. REGULATORY INFORMATION

LABELS FOR SUPPLY



Harmful

RISK PHRASES

Numbers

Text

22

Harmful if swallowed.

SAFETY PHRASES

23

Do not breathe vapour/spray

^Relevant Regulations

Dangerous Substances Directive 67/548/EEC, currently at 8th Amendment and 28th Adaptation

Dangerous Preparations Directive 1999/45/EC, currently at 1st Amendment

Safety Data Sheets Directive 91/155/EEC, currently at 1st Amendment and 2nd Adaptation

^16. OTHER INFORMATION

^INFORMATION SOURCES

References and data sources can be supplied on request.

COMMENTS

While Tessenderlo Fine Chemicals endeavour to ensure that all advice given relating to the use and/or application of our products (whether in this leaflet or otherwise) is both correct and useful, the information is based partly on data made available to us from other sources and is not guaranteed as accurate. It is not intended in any way to be exhaustive or as a substitute for the customers own product testing, evaluation and safety procedures.

If you have any queries over the suitability or safety precautions required for your particular application, please contact us and we will endeavour to assist you further. Customers who make use of the product without contacting us do so at their own risk.

The information contained in this leaflet is under continuous review and liable to be modified from time to time.

NAME MR I BOWDERY
POSITION ENVIRONMENTAL ADVISOR

SODIUM SILICATE SOLUTION, MOLAR RATIO > 3,2**5. FIRE-FIGHTING MEASURES****Extinguishing media:**

Not combustible. Use extinguishing media appropriate to the source of the fire.
Unsuitable extinguishing media are not known.

Special exposure hazards:

Beware of the caustic aqueous solution of the product.

Hazardous decomposition/combustion products:

None known.

Protective equipment:

Use appropriate protective equipment to the source of the fire.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions:**

Avoid contact with skin and eyes. Do not breath aerosols. High risk of slipping due to the leakage of product.
For personal protection see section 8.

Environmental precautions:

Do not allow to enter drains, surface water, groundwater and soil.

Methods for cleaning up:

Pick up rest with absorbent material (e.g. sand, sawdust, general purpose binder).

7. HANDLING AND STORAGE**Handling:**

Avoid contact with skin, eyes. Do not breath aerosols. The usual precautionary measures for handling chemicals should be observed. For personal protection see section 8.

Fire and explosion prevention:

No specific recommendations.

Storage requirements:

Protect from frost.

Recommended storage temperature: 15 – 60 °C

Keep the original package or container closed if not use. Do not store in galvanized containers, containers made of aluminum, other light metals or glass.

Do not store with acids.

Other information:

For materials to be used in installations and equipment refer to the heading „storage conditions“ and section 10.

8. EXPOSURE CONTROL/ PERSONAL PROTECTION**Engineering controls:**

Avoid the creation of aerosol. If the creation of aerosols cannot be avoided insure good ventilation of the working area.

Exposure limits:

No exposure limit has been established.

Personal protection:

Respiratory:

In case of creation of aerosols and insufficient ventilation, wear suitable respiratory equipment (filtering halfmask with protection against aerosols).

Hand:

Wear chemical or alkali resistant protective gloves (according to EN 374, cat. III).

Eye:

Wear safety glasses.

Skin and body:

Wear suitable protective clothing.

SODIUM SILICATE SOLUTION, MOLAR RATIO > 3,2**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance:	viscous liquid
Colour:	colourless
Odour:	odourless
Density:	1300 – 1420 kg/m ³ (20 °C)
Viscosity:	20 - 500 mPas (20 °C)
pH value:	< 11,45
Boiling point/range:	approx. 100 °C (not determined)
Melting point/range:	approx. – 3°C (not determined)
Vapour pressure:	approx. 2.2 kPa (20 °C) [same as water]
Flash point:	non combustible
Autoignition temperature:	non combustible
Explosive properties:	not applicable
Solubility in water:	completely miscible
Solubility in other solvents:	not determined

10. STABILITY AND REACTIVITY**Stability:**

The product is stable.

Conditions to avoid:

None known.

Materials to avoid:

The product reacts with aluminum and other light metals and their alloys, tin and zinc to generate hydrogen which can form explosive mixtures with air. The product sticks to and may etch glass surfaces. Acids decomposes the product and silicic acid precipitates. Reacts with acids with formation of heat.

Hazardous decomposition products:

None known.

11. TOXICOLOGICAL INFORMATION**Acute toxicity:**

Oral LD 50:	rat: > 2000 mg/kg
Dermal LD 50:	no data available
Inhalation LC50:	no data available

Irritation:

Skin:	Slightly irritating to skin but not sufficient for classification
Eye:	Slightly irritating to eyes but not sufficient for classification
Sensitization:	not sensitizing (Lit.)
Genotoxicity:	not mutagenic (in vitro) (Lit.)
Other toxicological information:	not carcinogenic (Lit.)

SODIUM SILICATE SOLUTION, MOLAR RATIO > 3,2**12. ECOLOGICAL INFORMATION****Ecotoxicity:**

fish:	96 h – LC 50 (Brachydanio rerio, OECD no. 203): 3185 mg/l (pH 10,1)
daphnia:	48 h – EC 50 (Daphnia magna): 4857 mg/l
bacteria:	48 h – EC 0 (Pseudomonas putida, OECD no. 209) > 1000 mg/l

Environmental behavior:

Degradation Abiotic	In an aqueous solution of pH=< 9 the silicate is mineralized and precipitated. The maximum concentration of soluble silicates at this pH is 120 mg/l.
Degradation Biotic	not applicable
Bioaccumulation	No bioaccumulation potential. Silicon materials such as silicates are used physiologically by algae, plants without retention.
Other information	If not neutralized, this product can be toxic for aquatic organism because of its alkalinity. The pH-rise is responsible for the environmental effect on the aquatic life.

13. DISPOSAL CONSIDERATIONS**Product:**

Disposal in accordance with EC directive 91/692/EEC. Waste code number EWC 060299.

Contaminated packaging:

Contaminated containers must be completely emptied and may be reused after proper cleaning.

14. TRANSPORT INFORMATION**Land transport (ADR/RID):**

ADR – Class	not relevant	ADR item number:	not relevant
RID – Class	not relevant	RID item number:	not relevant
Hazard Identification No.	not relevant	Substance Ident. No.	not relevant
TREM-Card	not relevant	UN-Number	none
Proper Shipping Name	not relevant		
Other Information	Not dangerous goods according to national and international transport regulations.		

See transport (IMDG-code/IMO):

IMO/IMGD-Code	not relevant	Class	not relevant
Packing group	not relevant	UN-Number	none
EMS	not relevant	MFAG	not relevant
Marine pollutant	no		
Proper Shipping Name	not relevant		
Other Information	Not dangerous goods according to national and international transport regulations.		

Air transport (ICAO-TI/IATA-DGR):

ICAO-TI/IATA-DGR-class	not relevant	UN-Number	none
Packing group	not relevant		
Proper Shipping Name	not relevant		
Other Information	Not dangerous goods according to national and international transport regulations.		



PQ Europe

EC-SAFETY DATA SHEET

according to 91/155/EWC

Group Safety Data Sheet



PQ Europe
Last issued: 6/23/2003 12:03
PM

Page: 5 von 5

SODIUM SILICATE SOLUTION, MOLAR RATIO > 3,2

15. REGULATORY INFORMATION

Chemical description:

Sodium silicate, solution, molar ratio > 3,2

Labeling according to EC directives:

EC-number	not applicable
Classification based on	tests
Symbol(s)	none
R(isk)-phrases	none
S(afety)-phrases	none
Other Information	none

National regulations:

Germany	Wassergefährdungsklasse (WGK) 1 (VwVwS Anhang 2, Kenn-Nr. 1314)
Netherlands	Algemene Beoordelingsmethodiek voor stoffen en Preparaten: B(11) Weinig schadelijk voor in water levende organismen

16. OTHER INFORMATION

The above mentioned information describes exclusively the safety requirements of the product(s) and is based on our present-day knowledge. It does not represent a guarantee for the properties of the product(s) described in terms of the legal warranty regulations. Properties of the product are to be found in the specification or the product information sheet.

