

SAFETY DATA SHEET

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Name	Britesil C 20 , Britesil C 201 , Britesil C 205 , Britesil C 207 Silicic acid, sodium salt (1.6<MR<=2.6)
Alternative names	Sodium silicate , powder
CAS No.	1344-09-8
EINECS No.	215-687-4
REACH Registration No.	01-2119448725-31-0011

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

Identified use(s)	General purpose industrial chemical for use in a wide range of applications. Binding agent ; Corrosion inhibitor ; Dust binding agent ; Flame retardant or fire preventing agent ; Flotation agent ; Stabiliser ; Viscosity control agent ; Intermediate See also Annex to the extended Safety Data Sheet.
Uses advised against	None known.

1.3 Details of the supplier of the safety data sheet

Company Identification	PQ Silicas BV Ir. Rocourstraat 28 Industrieterrein Zuid 6245 AD Eijsden The Netherlands
Telephone	+31 (0)43-409-9333
E-Mail (competent person)	sds.uk@pqcorp.com

1.4 Emergency telephone number

Emergency Phone No.	PQ Silicas BV: +31 (0)43-409-9304 In the UK, PQ Silicas UK Ltd: +44 1925 416100
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SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification	H318 : Serious eye damage/irritation Category 1 H315 : Skin corrosion/irritation Category 2 H335 : STOT - single exposure Category 3
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Hazards summary

Alkaline.
Risk of serious damage to eyes.
Irritating to respiratory system and skin.

2.2 Label elements

Hazard pictogram(s)



Signal word(s)

Danger

Hazard statement(s)	H318: Causes serious eye damage. H315: Causes skin irritation. H335: May cause respiratory irritation.
Precautionary statement(s)	P261: Avoid breathing dust. P262: Do not get in eyes, on skin, or on clothing. P280: Wear protective gloves/protective clothing/eye protection/face protection. P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
2.3 Other hazards	Not classified as PBT or vPvB.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Regulation (EC) No. 1272/2008 (CLP)

Ingredient(s)	%W/W	CAS No.	EINECS No. / REACH Registration	Hazard symbol(s) and hazard statement(s)
Silicic acid, sodium salt (1.6<MR<=2.6) Powder	> 75	1344-09-8	215-687-4 01-2119448725-31	H318 : Eye Dam. 1 ; H315 : Skin Irrit. 2 ; H335 : STOT SE 3 ;
Water	< 25	7732-18-5	231-791-2	

For full text of R/H phrases see section 16.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Eye Contact	Irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 15 minutes. Obtain immediate medical attention.
Skin Contact	Wash affected skin with plenty of water. If symptoms develop, obtain medical attention.
Inhalation	Remove patient from exposure, keep warm and at rest. Obtain medical attention.
Ingestion	Do not induce vomiting. Wash out mouth with water and give 200-300 ml (half a pint) of water to drink. Obtain medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Alkaline.
Risk of serious damage to eyes.
Irritating to respiratory system and skin.
The toxicity of sodium silicate is dependent on the silica to alkali ratio and on the pH.

4.3 Indication of any immediate medical attention and special treatment needed

Obtain immediate medical attention.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing Media Compatible with all standard fire fighting techniques.

Unsuitable extinguishing Media	None known.
5.2 Special hazards arising from the substance or mixture	Not applicable. Inorganic powder or granules. Non-combustible.
5.3 Advice for fire-fighters	None.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures	Wear suitable protective clothing. Wear eye/face protection. An approved dust mask should be worn if dust is generated during handling. See Section: 8.2
6.2 Environmental precautions	Do not allow to enter drains, sewers or watercourses. Advise Authorities if spillage has entered water course or sewer or has contaminated soil or vegetation.
6.3 Methods and materials for containment and cleaning up	Caution - spillages may be slippery. Avoid generation of dust. Sweep or preferably vacuum up and collect in suitable containers for recovery or disposal.
6.4 Reference to other sections	See Also Section 8.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling	Avoid contact with eyes, skin and clothing. Avoid generation of dust. Emergency shower and eye wash facilities should be readily available. See Also Section 8.
7.2 Conditions for safe storage, including any incompatibilities	Keep container tightly closed and dry. Unsuitable containers: Aluminium See Also Section 10.
7.3 Specific end use(s)	See also Annex to the extended Safety Data Sheet.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

SUBSTANCE.	Occupational Exposure Limits
Silicic acid, sodium salt	No Occupational Exposure Limit assigned. An exposure limit of 2 mg/m ³ (15 min TWA) is recommended by analogy with sodium hydroxide (UK EH40).

Derived No Effect Level (DNEL)	Oral / mg/kg bw/d	Inhalation / mg/m ³	Dermal / mg/kg bw/d
Workers - Acute - Systemic effects	-	-	-
Workers - Acute - Local effects	-	-	-
Workers - Long Term - Systemic effects	-	5.61	1.59
Workers - Long Term - Local effects	-	-	-
Consumers - Acute - Systemic effects	-	-	-
Consumers - Acute - Local effects	-	-	-
Consumers - Long Term - Systemic effects	0.80	1.38	0.80
Consumers - Long Term - Local effects	-	-	-

For further details and guidance see Exposure Scenarios in Annex to the extended Safety Data Sheet (eSDS). Risk management measures (RMMs) for identified uses must be implemented as described in this SDS and in the relevant exposure scenarios.

	Predicted No Effect Concentration
PNEC Water (fresh)	7.5 mg/l
PNEC Water (marine)	1 mg/l
PNEC Water (intermittent)	7.5 mg/l
PNEC Sediment	Not available
PNEC Soil	Not available
PNEC Sewage treatment plant	348 mg/l
PNEC Secondary Poisoning (oral)	Not applicable

8.2 Exposure controls

Wear protective equipment to comply with good occupational hygiene practice. Do not eat, drink or smoke at the work place.

8.2.1 Appropriate engineering controls

Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (dilution and local exhaust), and control of process conditions.

8.2.2 Personal Protection

Respiratory protection

Avoid inhalation of dusts. Wear suitable respiratory protective equipment if working in confined spaces with inadequate ventilation or where there is any risk of the exposure limits being exceeded. Advice on respiratory protective equipment is given in the HSE (Health and Safety Executive) publication HS(G)53.

Dust mask: FFP2 (EN 149).

Chemical goggles (EN 166).

Eye/face protection

Wear suitable protective clothing and gloves.

Skin protection

Plastic or rubber gloves. For example EN374-3, level 6 breakthrough time (>480min).

Wear suitable overalls. For example EN ISO 13982 (dust), EN 14605 (liquid splashes).

8.2.3 Environmental Exposure Controls

The primary hazard of sodium silicate is the alkalinity. Avoid generation of dust. Avoid release to the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Powder. White.
Odour	Odourless.
Odour Threshold (ppm)	Not applicable.
pH (Value)	Alkaline.
Freezing Point (°C)	Not applicable.
Melting Point (°C)	> 1000
Boiling Point (°C)	Not applicable.
Flash Point (°C) [Closed cup]	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not applicable.
Explosive Limit Ranges	Not applicable.
Vapour pressure (Pascal)	Not applicable.
Vapour Density (Air=1)	No data.
Density (g/ml)	No data.
Solubility (Water)	Soluble.
Solubility (Other)	No data.
Partition Coefficient	No data.
Auto Ignition Point (°C)	Not applicable.
Decomposition Temperature (°C)	Not applicable.
Viscosity (mPa. s)	Not applicable.
Explosive properties	Not applicable.
Oxidising Properties	Not applicable.
9.2 Other information	No data.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	See Section: 10.3
10.2 Chemical stability	Stable.
10.3 Possibility of hazardous reactions	When arc welding vessels containing aqueous solutions of this material, take care to control any explosion risk from hydrogen evolved by electrolysis. Aqueous solutions will react with aluminium, zinc, tin and their alloys evolving hydrogen gas which can form an explosive mixture with air. Can react violently if in contact with acids. Can react with sugar residues to form carbon monoxide.
10.4 Conditions to avoid	See Section: 10.3
10.5 Incompatible materials	See Section: 10.3
10.6 Hazardous decomposition product(s)	None known.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Ingestion	All symptoms of acute toxicity are due to high alkalinity. Material will cause irritation. Oral LD50 (rat) 3400 mg/kg bw
Inhalation	Dust is irritant to the respiratory tract. All symptoms of acute toxicity are due to high alkalinity. Inhalation LC50 (rat) >2.06 g/m ³
Skin Contact	Material will cause irritation. Dermal LD50 (rat) >5000 mg/kg bw
Eye Contact	Material will cause severe irritation. Risk of serious damage to eyes.
Skin corrosion/irritation	Irritating to skin.
Serious eye damage/irritation	Irritating to eyes.
Sensitisation	Not sensitising.
Mutagenicity	No evidence of genotoxicity. In vitro/in vivo negative.
Carcinogenicity	No structural alerts.
Reproductive toxicity	No evidence of reproductive toxicity or developmental toxicity.
STOT - single exposure	Irritating to respiratory system.
STOT - repeated exposure	Not classified. NOAEL oral (rat) >159 mg/kg bw/d
Aspiration hazard	Not classified

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity	Fish (Brachydanio rerio) LC50 (96 hour) 1108 mg/l Aquatic invertebrates: (Daphnia magna) EC50 (48 hour) 1700 mg/l
12.2 Persistence and degradability	Inorganic. Soluble silicates, upon dilution, rapidly depolymerise into molecular species indistinguishable from natural dissolved silica.
12.3 Bioaccumulative potential	Inorganic. The substance has no potential for bioaccumulation.
12.4 Mobility in soil	Not applicable.
12.5 Results of PBT and vPvB assessment	Not classified as PBT or vPvB.
12.6 Other adverse effects	The alkalinity of this material will have a local effect on ecosystems sensitive to changes in pH.

SECTION 13: DISPOSAL CONSIDERATIONS

- 13.1 Waste treatment methods** Discharge of this product to sewage treatment works is dependent on local regulations with regard to pH controls. Dispose of this material and its container to hazardous or special waste collection point. This material is classified as hazardous waste under EC Directive 2008/98/EC. This material is classified as hazardous waste under the Hazardous Waste (England and Wales) Regulations SI 2005 No. 894. Disposal should be in accordance with local, state or national legislation.

SECTION 14: TRANSPORT INFORMATION

Not classified according to the United Nations 'Recommendations on the Transport of Dangerous Goods'.

- 14.1 UN number** Not applicable
14.2 Proper Shipping Name Not applicable.
14.3 Transport hazard class(es) Not applicable.
14.4 Packing group Not applicable.
14.5 Environmental hazards Not classified as a Marine Pollutant.
14.6 Special precautions for user No special packaging requirements. Unsuitable containers: Aluminium
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

SECTION 15: REGULATORY INFORMATION

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

TSCA Inventory Status: Reported/Included.
AICS Inventory Status: Reported/Included.
DSL/NDSL Inventory Status: Reported/Included.
German Water Hazard Classification VwVwS: Product ID number 1314, WGK class 1 (low hazard to water).

- 15.2 Chemical Safety Assessment** A Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: OTHER INFORMATION

Data referenced in this eSDS is from company-owned information and from data legitimately accessed by PQ Corporation through membership of Industry Consortia or other agreements. This includes data relating to toxicology, ecotoxicology, DNELs, PNECs and other information in this eSDS and its annex.

This SDS was last reviewed: 11/2016

The following sections contain revisions or new statements: No significant changes required to this version at last review.

GLOSSARY

H318: Causes serious eye damage.

H315: Causes skin irritation.

H335: May cause respiratory irritation.

STOT SE 3 : Specific target organ toxicity — single exposure Category 3

DNEL : Derived No Effect Level

PNEC : Predicted No Effect Concentration

PBT: Persistent, Bioaccumulative and Toxic

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Annex to the extended Safety Data Sheet (eSDS)

Substance: SILICIC ACID, SODIUM SALT
Alternative name: SODIUM SILICATE
Trade name: BRITESIL

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SECTION 1		Title of Exposure Scenario
Title	Workplace exposure to sodium silicate powder	
Use Descriptor	Sectors of use [SU]: 3, 22	
	Process category [PROC]: 1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 11, 13, 14, 22, 23, 24	
	Environmental release categories [ERC]: not required	
Processes and activities covered by the exposure scenario	Manufacture of the substance as well as industrial and professional uses.	
SECTION 2		Operational conditions and risk management measures
	Whenever handling sodium silicate as a substance on its own (lumps/powder/granules) or in a preparation outside closed systems, depending on the use and concentration suitable personal protective equipment (gloves, goggles, dust masks or respirators) are the preferred and only measure of control.	
SECTION 2.1		Worker Exposure Controls
Characteristics of chemical products		
Physical form of the product	Solid, Powder, Vapour pressure 0.00016 kPa (1172 °C)	
Concentration of substance in preparation / mixture or article	Covers percentage substance in the product up to 100 %, unless otherwise stated.	
Amount used per time or activity	No limit.	
Duration and frequency of use	Covers frequency up to: daily use, weekly, monthly, yearly, unless otherwise stated.	
Human factors not influenced by risk management	Not applicable.	
Other Operational Conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene is implemented. The work occurs inside as well as outside.	
Contributing Scenarios		Risk Management Measures
PROC 1, 2, 3	Use in closed systems.	
PROC 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 22, 23, 24	Wear protective gloves/eye protection. Gloves: Wear impervious gloves (EN 374).	
PROC 7, 11	Provide enhanced general ventilation by mechanical means. An approved dust mask should be worn if dust is generated during handling. Wear: Half-face mask (DIN EN 140)/Quarter-face mask (DIN EN 140); Filter type: A/P2. Wear protective gloves/eye protection. Gloves: Wear impervious gloves (EN 374).	
SECTION 2.2		Environmental Exposure Controls
	Not required, as soluble silicates, including sodium silicate, do not meet the criteria for classification as dangerous to the environment according to 67/548/EEC (see Article 14.4 of REACH Regulation). Furthermore, as high production volume substances, soluble silicates have been reviewed to a great extent for their exposure potential to the environment and the possible risks arising from their release (Van Dokkum et al. 2002, OECD SIDS 2004, HERA 2005, and CEES 2008). It was concluded that soluble silicates are currently of low priority for further work because of their low hazard profile.	

SECTION 1		Title of Exposure Scenario
Title	Workplace exposure to sodium silicate solutions	
Use Descriptor	Sectors of use [SU]: 3, 22	
	Process category [PROC]: 1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 11, 13, 14, 22, 23, 24	
	Environmental release categories [ERC]: not required	
Processes and activities covered by the exposure scenario	Manufacture of the substance/preparation as well as industrial and professional uses.	
SECTION 2		Operational conditions and risk management measures
	Whenever handling sodium silicate as a substance on its own (lumps/powder/granules) or liquid or in a preparation outside closed systems, depending on the use and concentration suitable personal protective equipment (gloves, goggles, dust masks or respirators) are the preferred and only measure of control.	
SECTION 2.1		Worker Exposure Controls
Characteristics of chemical products		
Physical form of the product	Liquid, Solution, Vapour pressure 0.00016 kPa (1172 °C)	
Concentration of substance in preparation / mixture or article	Covers percentage substance in the product up to 100 %, unless otherwise stated.	
Amount used per time or activity	No limit.	
Duration and frequency of use	Covers frequency up to: daily use, weekly, monthly, yearly Except for PROCs 7 and 11: Avoid carrying out operation for more than 1 hour.	
Human factors not influenced by risk management	Not applicable.	
Other Operational Conditions affecting worker exposure	Assumes a good basic standard of occupational hygiene is implemented. The work occurs inside as well as outside.	
Contributing Scenarios		Risk Management Measures
PROC 1, 2, 3	Use in closed systems.	
PROC 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 22, 23, 24	Wear protective gloves/eye protection. Gloves: Wear impervious gloves (EN 374).	
PROC 7, 11	Covers percentage substance in the product up to 25 %. Provide enhanced general ventilation by mechanical means. An approved dust mask should be worn if dust is generated during handling. Wear: Half-face mask (DIN EN 140)/Quarter-face mask (DIN EN 140); Filter type: A/P2. Avoid carrying out operation for more than 1 hour. Wear protective gloves/eye protection. Gloves: Wear impervious gloves (EN 374).	
SECTION 2.2		Environmental Exposure Controls
	Not required, as soluble silicates, including sodium silicate, do not meet the criteria for classification as dangerous to the environment according to 67/548/EEC (see Article 14.4 of REACH Regulation). Furthermore, as high production volume substances, soluble silicates have been reviewed to a great extent for their exposure potential to the environment and the possible risks arising from their release (Van Dokkum et al. 2002, OECD SIDS 2004, HERA 2005, and CEES 2008). It was concluded that soluble silicates are currently of low priority for further work because of their low hazard profile.	

SECTION 1		Title of Exposure Scenario
Title	Use in Consumer products	
Use Descriptor	Sectors of use [SU]: 21	
	Chemical product category [PC]: 1, 9a, 9b, 14, 15, 17, 23, 24, 26, 30, 33, 34, 35, 39	
	Environmental release categories [ERC]: not required	
Processes and activities covered by the exposure scenario	General exposures to consumers arising from the use of household products sold.	
SECTION 2		Operational conditions and risk management measures
SECTION 2.1		Control of consumer exposure
Characteristics of chemical products		
Physical form of the product	Powder/Granules or Liquid	
Vapour pressure (kPa)	< 0.5 kPa	
Concentration of substance in preparation / mixture or article	Covers percentage substance in the product up to 100 %, unless otherwise stated.	
Amount used per time or activity	Unless otherwise stated, covers use amounts up to 37500g; covers skin contact area up to 6660cm ² .	
Duration and frequency of use	Unless otherwise stated, covers use frequency up to 4 times per day; covers exposure up to 8 hours per event.	
Other Operational Conditions affecting exposure	Unless otherwise stated assumes use at ambient temperatures; assumes use in a 20m ³ room; assumes use with typical ventilation.	
Chemical product category [PC]	Specific Risk Management Measures and Operating Conditions (only required controls to demonstrate safe use listed)	
PCs - general case	OC	In consumer products the irritation hazard of soluble silicates is addressed, if necessary, by appropriate labelling and the advice to use (household) gloves on the consumer product. In general, dermal, inhalation and oral consumer exposure are minimised due to formulation (limited concentration of soluble silicates, particle size distribution, agglomeration and dust potential, tablets and gels), packaging and bad taste of commercially available products.
	RMM	No specific RMMs identified beyond those OCs stated.
PC 1, 9a, 9b, 14, 15, 17, 23, 24, 26, 30, 33, 34, 39	OC	Covers use up to 365 days/year; covers use under typical household ventilation; covers default OCs of ECETOC TRA tool.
	RMM	No specific RMMs identified beyond those OCs stated.
PC 35 – laundry handwashing (example)	OC	Unless otherwise stated, covers concentrations up to 25%; covers use up to 4 days/week; covers use up to 1 time/day of use; covers skin contact area up to 1980 cm ² ; covers use under typical household ventilation; covers use in room size of 20m ³ ; for each use event, covers exposure up to 0.17 hr/event.
	RMM	No specific RMMs identified beyond those OCs stated.
PC 35 – pre-treatment of clothes (example)	OC	Unless otherwise stated, covers concentrations up to 60%; covers use up to 21 tasks/week; covers skin contact area up to 840cm ² ; covers use under typical household ventilation; covers use in room size of 20m ³ ; for each use event, covers exposure up to 0.17 hr/event.
	RMM	No specific RMMs identified beyond those OCs stated.
SECTION 3: Exposure estimation		
3.1. Health		
The ECETOC TRA tool has been used to estimate consumer exposures, consistent with the content of ECETOC Report no. 107 and the Chapter R15 of the IR&CSA TGD. Where exposure determinants differ to these sources, then they are indicated.		
SECTION 4: Guidance to check compliance with the Exposure Scenario		
4.1. Health		
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.		
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.		

Identified Uses for SILICIC ACID, SODIUM SALT (sodium silicate)

Version 2 - 09/2012

Identified uses by workers in an industrial setting

IU No.	Identified use name	Process category [PROC] Market sector [PC] Sectors of use [SU] Environmental release categories [ERC]
IW-1	Production uses. Production of soluble silicates: lumps, dried powder & granules, solutions.	PROC 2, 3, 4, 5, 7, 8a, 9, 22, 23, 24 PC 0: bulk chemical SU 3 ERC 1, 2
IW-2	Industrial uses. Raw materials for manufacture of silica, silica gel, zeolites, silicates, clays, ceramics, glass, catalysts.	PROC 1, 2, 3, 4, 5, 6, 7, 8b, 9 PC 19 SU 8 ERC 1, 2, 6a
IW-3	Manufacture and use of Detergents: Fabric washing detergents, dishwasher detergents, industrial cleansing agents, hard surface cleaning and disinfecting agents	PROC 1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 14 PC 8, 14, 15, 35 SU 4, 10, 14, 20, 0: NACE code 2041 ERC 2, 4, 6b, 8a, 8d
IW-4	Adhesives and binders in manufacture of <ul style="list-style-type: none"> • paperboard and cardboard • mineral dust/particles briquetting & agglomeration • roofing tiles • bricks, ceramics and other construction materials • refractory cements and other refractory masses/mixes • foundry moulds and cores • wood construction materials • fibreboard • fibreglass and rockwool/mineral wool insulation materials • building boards and prefabricated parts based on inorganic/organic materials • plastic insulation materials 	PROC 1, 2, 3, 4, 5, 7, 8a, 8b, 10, 14, 16, 23 PC 1, 0: Binding agent SU 6b, 13, 15, 18, 19 ERC 3, 5, 8c
IW-5	Adhesives and binders in manufacture and use of <ul style="list-style-type: none"> • plasters and mortars • welding rods 	PROC 1, 2, 3, 4, 5, 8a, 13, 25 PC 38 SU 13, 15, 17, 19 ERC 3, 5, 10b, 11b
IW-6	Surface Coatings: <ul style="list-style-type: none"> • TiO₂ production • Concrete • Paints for masonry and glass surfaces, architectural coatings • Fire-proof glass and surface coatings • Coatings for fire-proof construction materials • Spray-coating in tunnel construction and mining 	PROC 2, 4, 5, 7, 8a, 8b, 9, 10, 13 PC 1, 9a, 0: Construction materials SU 2a, 8, 10, 13, 19 ERC 2, 3, 5, 6b, 8c, 8f, 10a, 11a
IW-7	Pulp and paper manufacture: <ul style="list-style-type: none"> • Coating • Deinking and bleaching (recycled wastepaper) 	PROC 2, 5, 7, 8b, 9, 10 PC 20, 26 SU 6b ERC 5, 6b, 8c

IW-8	Water treatment: Corrosion protection (Sewer pipes, water cooling systems, drinking water)	PROC 2, 8a, 8b, 9 PC 37 SU 19 ERC 5, 7
IW-9	Enhanced Oil Recovery: <ul style="list-style-type: none"> Oil flow improvers Anti-scaling agent 	PROC 3, 8a PC 0 SU 2a, 2b ERC 4
IW-10	Textile and textile fibre processing: <ul style="list-style-type: none"> Bleach and dye stabiliser Fire retardant 	PROC 2, 8a, 9, 13 PC 34 SU 5 ERC 3, 4, 5, 6b
IW-11	Ceramics & minerals: <ul style="list-style-type: none"> Component of porcelain slips and ceramic masses Flotation agent in mineral processing Deflocculant in cement & clay suspensions 	PROC 4, 5, 7, 8a, 8b, 9, 10, 13 PC 20, 0 SU 10, 13 ERC 2, 4, 5
IW-12	Semi-conductor Material: Planarization	PROC 8b, 9 PC 33 SU 16 ERC 4, 6b
IW-13	Lithographics: Processing of lithographic plates	PROC 5 PC 0 SU 7 ERC 6b
IW-14	Timber and Timber Products: Impregnation	PROC 8a, 9, 13 PC 0 SU 18, 19 ERC 5, 8c, 8f
IW-15	Manufacture of Cosmetics: Hair treatment (bleaching and dyeing formulations)	PROC 3, 5, 8a, 9 PC 39 SU 10, 0: NACE code 2041 ERC 2
IW-16	Civil Engineering: Soil sealing and stabilisation in drilling, tunnelling and mining, sealing of landfills, building pits, buildings, coastline stabilisation	PROC 4, 5, 8a, 9 PC 1, 0 SU 2a, 19 ERC 5, 8f
IW-17	Other applicable information: <ul style="list-style-type: none"> Leather tanning Constituent of joint-filling sand preventing growth of weeds between paving 	PROC 5, 13, 21 PC 23 SU 5, 19 ERC 3, 4, 5, 6b

Identified uses by professional workers

IU No.	Identified use name	Process category [PROC] Market sector [PC] Sectors of use [SU] Environmental release categories [ERC]
PW-1	Use of Detergents: Fabric washing detergents, dishwasher detergents, industrial cleansing agents, hard surface cleaning and disinfecting agents	PROC 10, 11, 13 PC 35 ERC 4, 8a, 8d
PW-2	Water treatment: Corrosion protection (Sewer pipes, water cooling systems, drinking water)	PROC 2, 8b, 9 PC 37 ERC 4, 5, 8c, 9a, 9b, 10a, 11a
PW-3	Cosmetics: Manufacture of Cosmetics: Hair treatment (bleaching and dyeing formulations)	PROC 19 PC 39 ERC 8b, 8c
PW-4	Other applicable information: Constituent in pickling agents to remove paints	PROC 10, 19 PC 9a ERC 8b, 8e

Identified uses by consumers

IU No.	Identified use name	Process category [PROC] Market sector [PC] Sectors of use [SU] Environmental release categories [ERC]
C-1	Consumer use of detergents: Fabric washing detergents, dishwasher detergents, industrial cleansing agents, hard surface cleaning and disinfecting agents	PC 35 ERC 8a, 8b, 8d, 8e
C-2	Adhesives and binders in plasters and mortars.	PC 9b ERC 8c, 8f, 10a, 11a
C-3	Surface Coatings: Paints for masonry and glass surfaces, architectural coatings	PC 9a ERC 8a, 8c, 8d, 8f
C-4	Cosmetics: Manufacture of Cosmetics: Hair treatment (bleaching and dyeing formulations)	PC 39 ERC 8b, 8c
C-5	Other applicable information: <ul style="list-style-type: none"> • Constituent of joint-filling sand preventing growth of weeds between paving • Constituent in pickling agents to remove paints 	PC 9a, 9b ERC 8b, 8e, 10b

GLOSSARY – Based on ECHA Guidance on information requirements and chemical assessment Chapter R.12: Use descriptor system Version 2 March 2010

Sectors of use [SU]
Key descriptor: Main user groups
SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
SU21 Consumer uses: Private households (= general public = consumers)
SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Supplementary descriptor: Sectors of end-use
SU1 Agriculture, forestry, fishery
SU2a Mining, (without offshore industries)
SU2b Offshore industries
SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
SU4 Manufacture of food products
SU5 Manufacture of textiles, leather, fur
SU6a Manufacture of wood and wood products
SU6b Manufacture of pulp, paper and paper products
SU7 Printing and reproduction of recorded media
SU8 Manufacture of bulk, large scale chemicals (including petroleum products)
SU9 Manufacture of fine chemicals
SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
SU11 Manufacture of rubber products
SU12 Manufacture of plastics products, including compounding and conversion
SU13 Manufacture of other non-metallic mineral products, e.g. plasters, cement
SU14 Manufacture of basic metals, including alloys
SU15 Manufacture of fabricated metal products, except machinery and equipment
SU16 Manufacture of computer, electronic and optical products, electrical equipment
SU17 General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment
SU18 Manufacture of furniture
SU19 Building and construction work
SU20 Health services
SU23 Electricity, steam, gas, water supply and sewage treatment
SU24 Scientific research and development
SU0 Other

Chemical product category [PC]/Market sector [PC]
PC1 Adhesives, sealants
PC2 Adsorbents
PC3 Air care products
PC4 Anti-Freeze and de-icing products
PC7 Base metals and alloys
PC8 Biocidal products (e.g. Disinfectants, pest control)
PC9a Coatings and paints, thinners, paint removers
PC9b Fillers, putties, plasters, modelling clay
PC9c Finger paints
PC11 Explosives
PC12 Fertilizers
PC13 Fuels
PC14 Metal surface treatment products, including galvanic and electroplating products
PC15 Non-metal-surface treatment products
PC16 Heat transfer fluids
PC17 Hydraulic fluids
PC18 Ink and toners
PC19 Intermediate
PC20 Products such as ph-regulators, flocculants, precipitants, neutralization agents
PC21 Laboratory chemicals

PC23 Leather tanning, dye, finishing, impregnation and care products
PC24 Lubricants, greases, release products
PC25 Metal working fluids
PC26 Paper and board dye, finishing and impregnation products: including bleaches and other processing aids
PC27 Plant protection products
PC28 Perfumes, fragrances
PC29 Pharmaceuticals
PC30 Photo-chemicals
PC31 Polishes and wax blends
PC32 Polymer preparations and compounds
PC33 Semiconductors
PC34 Textile dyes, finishing and impregnating products; including bleaches and other processing aids
PC35 Washing and cleaning products (including solvent based products)
PC36 Water softeners
PC37 Water treatment chemicals
PC38 Welding and soldering products (with flux coatings or flux cores), flux products
PC39 Cosmetics, personal care products
PC40 Extraction agents
PC0 Other

Process category [PROC]
PROC1 Use in closed process, no likelihood of exposure
PROC2 Use in closed, continuous process with occasional controlled exposure
PROC3 Use in closed batch process (synthesis or formulation)
PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
PROC6 Calendering operations
PROC7 Industrial spraying
PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC10 Roller application or brushing
PROC11 Non industrial spraying
PROC12 Use of blowing agents in manufacture of foam
PROC13 Treatment of articles by dipping and pouring
PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation
PROC15 Use as laboratory reagent
PROC16 Using material as fuel sources, limited exposure to unburned product to be expected
PROC17 Lubrication at high energy conditions and in partly open process
PROC18 Greasing at high energy conditions
PROC19 Hand-mixing with intimate contact and only PPE available
PROC20 Heat and pressure transfer fluids in dispersive, professional use but closed systems
PROC21 Low energy manipulation of substances bound in materials and/or articles
PROC22 Potentially closed processing operations with minerals/metals at elevated temperature Industrial setting
PROC23 Open processing and transfer operations with minerals/metals at elevated temperature
PROC24 High (mechanical) energy work-up of substances bound in materials and/or articles
PROC25 Other hot work operations with metals
PROC26 Handling of solid inorganic substances at ambient temperature
PROC27a Production of metal powders (hot processes)
PROC27b Production of metal powders (wet processes)

Environmental release categories [ERC]
ERC1 Manufacture of substances
ERC2 Formulation of preparations
ERC3 Formulation in materials
ERC4 Industrial use of processing aids in processes and products, not becoming part of articles
ERC5 Industrial use resulting in inclusion into or onto a matrix
ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)
ERC6b Industrial use of reactive processing aids
ERC6c Industrial use of monomers for manufacture of thermo-plastics
ERC6d Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers
ERC7 Industrial use of substances in closed systems
ERC8a Wide dispersive indoor use of processing aids in open systems
ERC8b Wide dispersive indoor use of reactive substances in open systems
ERC8c Wide dispersive indoor use resulting in inclusion into or onto a matrix
ERC8d Wide dispersive outdoor use of processing aids in open systems
ERC8e Wide dispersive outdoor use of reactive substances in open systems
ERC8f Wide dispersive outdoor use resulting in inclusion into or onto a matrix
ERC9a Wide dispersive indoor use of substances in closed systems
ERC9b Wide dispersive outdoor use of substances in closed systems
ERC10a Wide dispersive outdoor use of long-life articles and materials with low release
ERC10b Wide dispersive outdoor use of long-life articles and materials with high or intended release (including abrasive processing)
ERC11a Wide dispersive indoor use of long-life articles and materials with low release
ERC11b Wide dispersive indoor use of long-life articles and materials with high or intended release (including abrasive processing)
ERC12a Industrial processing of articles with abrasive techniques (low release)
ERC12b Industrial processing of articles with abrasive techniques (high release)