



**Product Environmental  
Data Sheet**  
for  
**Sikkens Opaque Water-Borne  
Factory Applied Coating System**

## Rubbol WF 380 'Cradle to Gate' Data

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Akzo Nobel Specialist Coatings is a trading division of Akzo Nobel Decorative Coatings Limited.

Akzo Nobel Specialist Coatings has embarked on a process of assessing the environmental performance of several of its water-borne coating systems, using Life Cycle Assessments. This 'cradle to grave' assessment method is recognised to be the best tool available for assessing environmental performance, and our studies have been conducted according to the standards specified in the ISO 14000 series.

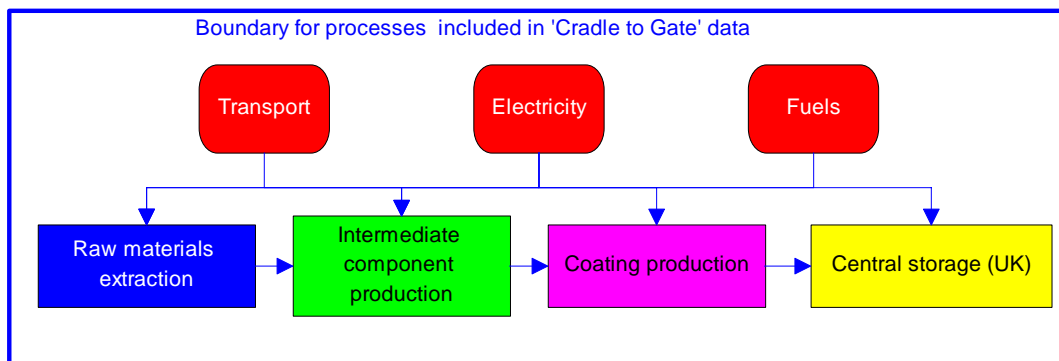
In order to make this information available to our customers in as useable a form as possible, we have developed these environmental product data sheets, which summarise the data generated by our LCA studies.

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**Rubbol WF 380** is a high performance opaque water-borne, satin finish, supplied mainly in 20 or 1000 litre containers, for factory application by spray. It is a pure acrylic resin formulation dispersed in water, with a volume solids concentration of approximately 37% (depending upon colour).

***The Functional unit***

The data provided below are cradle to storage depot data (as illustrated in the figure below) for the production of **1000 kg of Rubbol WF 380**



*Labelling and declaration of contents*

Content	Symbol letters	Risk phrases
This product is not classified as dangerous for supply according to the CHIP Regulations.		

*Environmental data*

The data presented here relate to current production, and were gathered during 2003/2004. Contact Akzo Nobel Specialist Coatings for further details of the LCA studies upon which they are based, and for full technical and safety data for these products. These data include the effects of all transport processes from the extraction of raw materials from the Earth, until the packaged product arrives at the storage depot in the UK.

For customers intending to make the Sikkens Opaque Coating System a part of their project, they are able to use these product-specific data as a direct addition to whole-project environmental assessments. By simply estimating the quantities of each coating required to produce and maintain the timber components within a project, the appropriate multiples of either the raw data or the impact data can be added to their whole-project data. Akzo Nobel Specialist Coatings technical support staff can assist with this.

## Consumption and emissions data per 1000 kg of Rubbol WF 380.

### Non Renewable Resources

Without energy content	kg	With energy content	MJ
Bauxite	0.17	Coal	9,171
Calcium (Ca)	0.00404	Gas	22,428
Phosphorus (P)	0.127	Oil	22,047
Sand	6.230		
Sulphur (S)	0.0179		
Titanium (Ti)	57.06		

Renewable Resources:- None listed

### Electricity Consumption

Electricity production source	kWh
Gas fired	33
Oil fired	26
Coal fired	89
Nuclear	98
Hydro	41

### Waste Generated

Material	kg
Special waste	60
Bulk waste	313

### Emissions to Air

Material	g
Ammonia	2.280
Aromatics (unspecified)	8.246
Arsenic	0.004
Benzene	0.339
Butanoic acid	2.088
Cadmium (II) ion	0.006
Carbon dioxide	2,347,183
Carbon Monoxide	2,200
Chromium (III) ion	0.158
Cyclohexane	0.339
Dinitrogen oxide	0.006
Dust (PM10)	1,557
Ethylene	0.602
Ethylene Glycol	0.006
Ethylene Oxide	0.565
Hexane	11.50
Hydrogen chloride	48.63
Hydrogen fluoride	0.834
Hydrogen sulfide	0.002
Lead (II) ion	0.194
Methane	28,462
Methyl Chloride	0.122
Nickel	0.001
Nitrogen dioxide	0.009
Nitrogen oxides (as NO2)	11,264
ortho-Xylene	0.677
PAH (unspecified)	0.272
Propylene	0.006
Propylene Glycol	0.026
Propylene Oxide	0.025
Soot	1,628
Sulphur dioxide	14,509
Sulphur hexafluoride	0.005
Sulphur trioxide	0.027
Toluene	1.725
NMVOOC	9,689
zinc (II) ion	0.278

\* Polycyclic Aromatic Hydrocarbons

### Emissions to Water

Material to fresh water	g
Ammonia	1,930
Ammonium	17.420
Arsenic	0.001
Benzene	0.001
Biological Oxygen Demand (BOD)	368
Cadmium (II) ion	0.004
Chemical Oxygen demand (COD)	4,066
Chlorine	7.387
Chromium III	0.351
Dust (PM10)	1,505
Hydrogen chloride	8,111
Hydrogen fluoride	0.002
Hydrogen sulfide	0.001
Lead (II) ion	0.176
Mercury (II) ion	0.002
Nickel	0.001
Nitrate	0.335
Nitrogenous compounds	0.476
Phenol	4.303
Phosphate	33.751
Sulphates	54,684
Sulphur dioxide	219
Toluene	0.260
Material to marine water	g
Dust (PM10)	74.342
Hydrogen chloride	31.007
Phenol	0.579

### Life Cycle Impact Assessment Scores

Category	Units	Score
Global warming	kg CO2 eq.	3,001
Ozone layer depletion	kg CFC-11 eq.	2.45E-06
Photochemical oxidation	kg ethylene eq.	4.973
Acidification	kg SO2 eq.	23.048
Eutrophication	kg PO4--- eq.	1.650

\*The impact categories used, are explained in Datasheet 1 of this series