



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

Cetol BL Opaque '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 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.

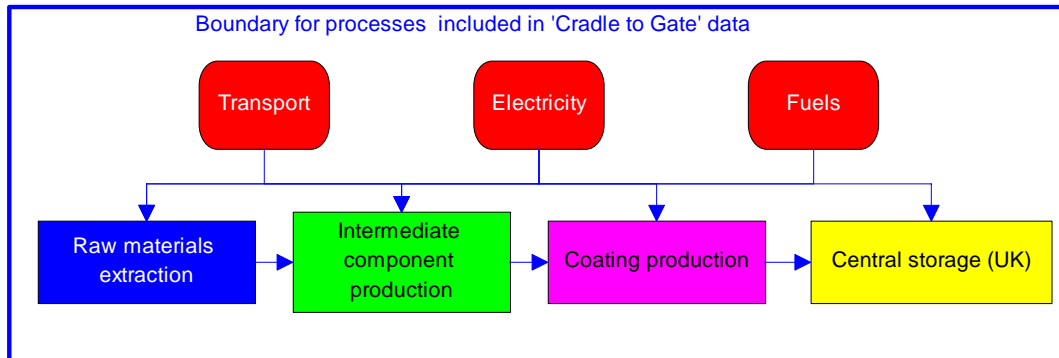
In order to make this information available to our customers in as useable a form as possible, we have developed these environmental product data sheets, which summarise the data generated by our LCA studies.

Cetol BL Opaque is a high performance opaque water-borne, satin finish, supplied for brush application, in 1, 2.5 and 5 litre containers.

It is alkyd/acrylic resin dispersed in water, with a volume solids concentration of approximately 51%, giving a one-coat maintenance system with excellent adhesion to bare wood and previously painted surfaces.

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 Cetol BL Opaque**



Labelling and declaration of contents

Content	Symbol letters	Risk phrases
Propylene glycol	N/A	N/A

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 Cetol BL Opaque.

Non Renewable Resources

Without energy content	kg	With energy content	MJ
Bauxite	0.179	Coal	10,561
Calcium (Ca)	0.0194	Gas	21,948
Sand	1.433	Oil	20,456
Sulphur (S)	0.0327		
Titanium (Ti)	71.877		

Renewable Resources:- None listed

Electricity Consumption

Electricity production source	kWh
Gas fired	41
Oil fired	32
Coal fired	109
Nuclear	119
Hydro	50

Waste Generated

Material	kg
Special waste	73
Bulk waste	381

Emissions to Air

Material	g
Ammonia	1.702
Aromatics (unspecified)	5.701
Arsenic	0.004
Benzene	0.364
Cadmium (II) ion	0.001
Carbon dioxide	2,373,407
Carbon Monoxide	1,905
Chromium (III) ion	0.199
Cyclohexane	0.354
Dinitrogen oxide	0.041
dust (PM10)	2,129
Ethylene	0.385
Ethylene Glycol	0.010
Ethylene Oxide	0.157
Hexane	12.007
Hydrogen chloride	39.780
Hydrogen fluoride	0.121
Lead (II) ion	0.151
Mercury (II) ion	0.001
Methane	30,802
Methyl Chloride	0.171
Nickel	0.007
nitrogen oxides (as NO2)	10,994
ortho-Xylene	0.707
PAH* (unspecified)	0.202
Propylene	0.056
Propylene Glycol	0.155
Propylene Oxide	1.232
Soot	1,915
Sulphur dioxide	15,576
Sulphur hexafluoride	0.007
Sulphur trioxide	0.016
Sulphuric acid	0.004
Toluene	1.778
Volatile Organic	11,959
Zinc (II) ion	0.042

* Polycyclic Aromatic Hydrocarbons

Emissions to Water

Material to fresh water	g
ammonia	130
ammonium	7.442
Biological Oxygen Demand (BOD)	436
cadmium (II) ion	0.004
Chemical Oxygen demand (COD)	4,096
Chlorine	453
chromium III	0.442
dust (PM10)	3,413
hydrogen sulfide	0.002
lead (II) ion	0.221
mercury (II) ion	0.003
nickel	0.021
Nitrate	0.769
Nitrite	0.010
Nitrogenous compounds	1.547
phenol	2.931
phosphate	13.972
sulphates	66,705
sulphur dioxide	284
Sulphuric acid	16.497
toluene	0.271
zinc (II) ion	0.141
Material to marine water	G
Dust (PM10)	79.423
Hydrogen chloride	34.550
Phenol	0.627

Life Cycle Impact Assessment Scores

Category	Units	Score
Global warming	kg CO2 eq.	3,082
Ozone layer depletion	kg CFC-11 eq.	3.43E-06
Photochemical oxidation	kg ethylene eq.	5.969
Acidification	kg SO2 eq.	24.192
Eutrophication	kg PO4--- eq.	1.582

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