

Environmental Product Declaration



In accordance with ISO 14025:

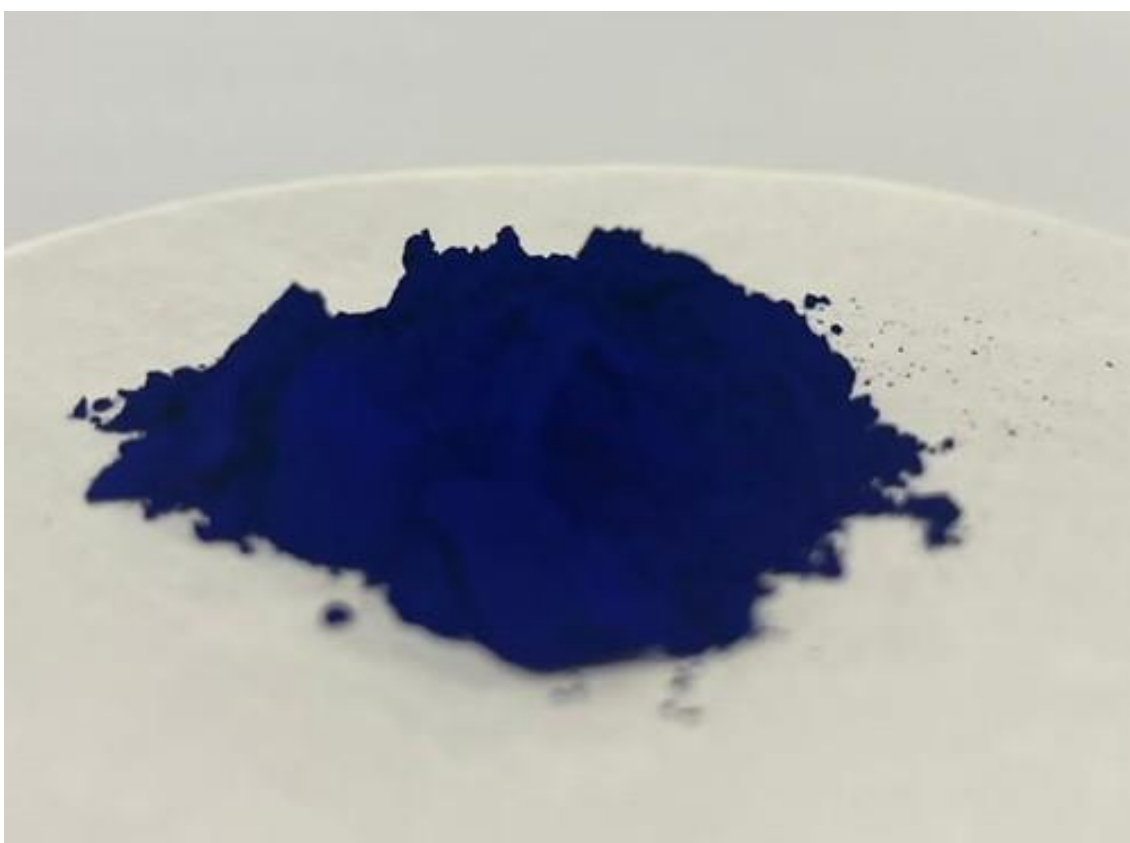
**For the Phthalocyanine blue pigment
(β -modification) 15:3, brand AT**

from

JSC Pigment



Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
Regional hub:	EPD Russia
EPD registration number:	S-P-02301
Publication date:	2023-04-14
Valid until:	2028-04-13



Programme information

Programme:	<p>The International EPD® System</p> <p>EPD International AB Box 210 60 SE-100 31 Stockholm Sweden</p> <p>www.environdec.com info@environdec.com</p>
-------------------	---

Product category rules (PCR): PCR 2021:03 Basic Chemicals (1.1.1).
<p>PCR review was conducted by:</p> <p>The Technical Committee of the International EPD® System. See www.environdec.com for a list of members. Review chair: Massimo Marino. Contact via info@environdec.com</p>
<p>Independent third-party verification of the declaration and data, according to ISO 14025:2006:</p> <p><input type="checkbox"/> EPD process certification <input checked="" type="checkbox"/> EPD verification</p>
<p>Third party verifier: Dr Hüdai Kara, Metsims Sustainability Consulting (www.metsims.com)</p> <p>Approved by: The International EPD® System</p>
<p>Procedure for follow-up of data during EPD validity involves third party verifier:</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programmes may not be comparable.
EPDs of construction products may not be comparable if they do not comply with EN 15804.

Company information

Owner of the EPD:

JSC Pigment,

Address: 392000, RUSSIA, TAMBOV, MONTAZHNIKOV STREET, BUILDING 1

E-mail: INFO@KRATA.RU, SALES@KRATA.RU

Phone: + 7 4752 79-50-02

Description of the organisation:

JSC Pigment is a Russian manufacturer of chemical products known on the market under the KRATA ® trademark. Current product range combined with an individual approach to each consumer make Tambov enterprise one of the key players in the domestic chemical industry.

Pigment is the owner of a unique product portfolio. The company is the only one in Russia and the CIS that produces organic pigments, optical brighteners, and sulfamic acid. The company's product range includes acrylic dispersions and PVA, additives in concrete, formaldehyde resins and formalin, semi-finished lacquers and finished paint materials, dyes and textile auxiliaries, additives in gasoline - more than 350 items of high-quality products.

The ISO 9001:2015 certificate confirms the quality of products produced by JSC "Pigment".

Name and location of production site:

JSC Pigment, 392000, RUSSIA, TAMBOV, MONTAZHNIKOV STREET, BUILDING 1

Product information

Product name:

**Phthalocyanine blue pigment
(β-modification) 15:3, brand AT**

Product description:

Pigment blue is a dry blue powder that is insoluble in water, oil, and other solvents. Produced by Technical specification 2463-402-05800142-2014 with alteration №1 and №2.

Pigment blue complies with standards:

- International directive AP89/1 (in terms of heavy metal content)
- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18.12.2006
- TR TS 008/2011 "On the safety of toys" (in terms of Formaldehyde content).

Table 1 Specifications of Phthalocyanine blue pigment (β-modification) 15:3, brand A*

Bulking volume		3.1	dm ³ /kg
Hiding power		7	g/m ³
Heat stability		180	°C
Fastness to migration		5	Score
Oil-absorption		42	g/100g of pigment blue
Light fastness	Full shade	7-8	Score
	1:10TiO ₂	7	
Fastness to:	distilled water	5	
	5% solution NaOH	5	
	5% solution HCl	5	
	acetone	5	
	methyl ethyl ketone	5	
	benzene	5	
	xylene	4-5	
	ethyl acetate	5	
	butyl acetate	5	

	white-spirit	5	
	butanol	5	
	drying oil	5	

*The specifications could be extrapolated at Phthalocyanine blue pigment (β -modification) 15:3, brand AT

Further information is available on <https://krata.ru/en/catalog/pigmenty-dlya-lkm/>.

Application:

Pigment blue used in the printing industry and dyeing of polymer masses and rubber. By agreement with the consumer, it can be used in the production of paints and varnishes. Further information on the products can be found on the manufacturer's website.

Geographical scope:

Russia

LCA information

Functional unit:

The functional unit is one tonne (1 t) of Phthalocyanine blue pigment (β -modification) 15:3 brand AT.

Time representativeness:

The primary data cover the period January 2021 - December 2021

Database(s) and LCA software used:

GaBi databases content version 2021.1; GaBi software version 10.0.1.92

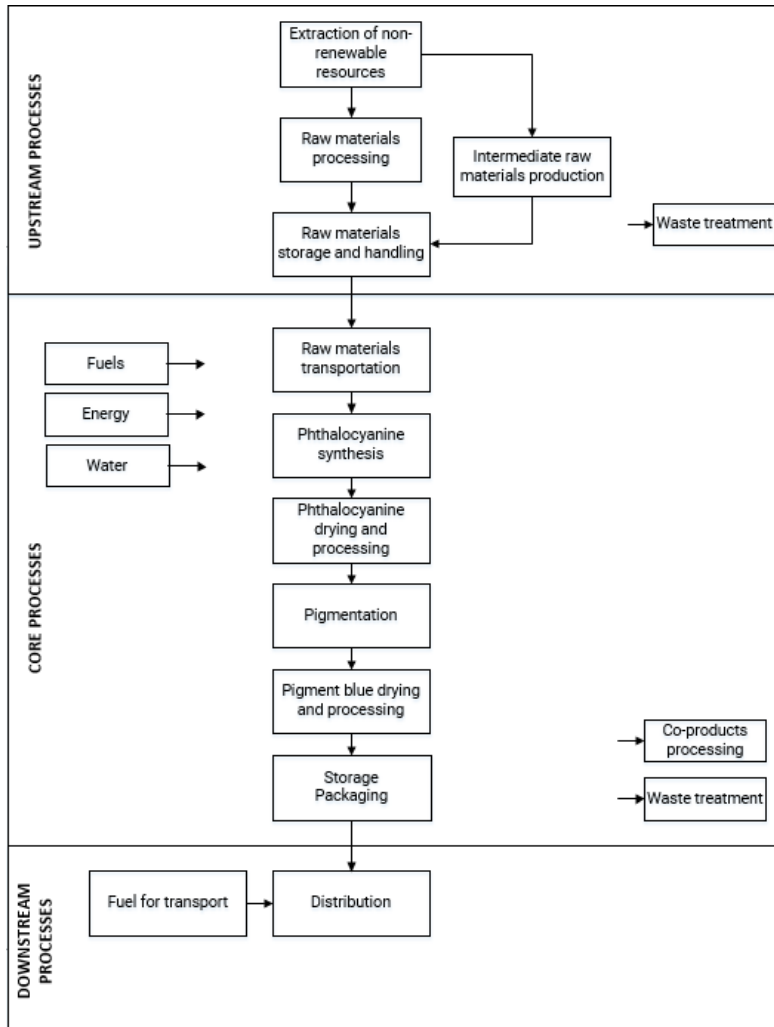
Description of system boundaries

According to "PCR 2021:03 Basic Chemicals (1.1.1)" by The International EPD® System.

Pigment blue life cycle can be divided into three different life cycle stages:

- Upstream processes (from "Cradle-to-gate")
- Core processes (from "Gate-to-gate")
- Downstream processes (from "Gate-to-grave").

The following processes are included in the pigment blue life cycle boundaries, as shown in a diagram below.



Estimates and Assumptions:

In a product system within the system boundaries modelling some uncertainties are occurring and in particular the following:

- The main incoming material flows were taken for modelling the life cycle of pigment blue. The mass of the flows excluded from the modelling does not exceed 1% of the total mass of the corresponding production system and 5% of the mass of the flows of the main production process. The contribution to the environmental impact of the excluded flows does not exceed 1% of the total impact of the pigment blue life cycle.
- It was assumed that datasets with a representative year different from the representative year for the primary data would be appropriate for modelling the pigment blue life cycle and would not significantly affect the final results of the study.
- In the absence of datasets for a particular additive or mixture of substances,

datasets for the major active substances in the corresponding additives/mixtures were taken and modelled based on the content of the corresponding substances in the additives.

- The results obtained are relevant for Phthalocyanine blue pigment (β -modification) 15:3 brand AT, which also could be extrapolated to Phthalocyanine blue pigment (β -modification) 15:3 brand A (the rationale is given in clause 2.).

More information:

All the relevant information regarding the product technical characteristics and other information you could find on the manufacturer official website – <https://krata.ru/en/> .

The underlying LCA report was prepared by: Coordinating Informational Center of CIS Member States on approximation of regulatory practices (CIS Center) - <https://ciscenter.org/en/>.

Environmental performance

Potential environmental impact for 1 tonne of Phthalocyanine blue pigment (β -modification)
15:3 brand AT

PARAMETER		UNIT	Upstream processes	Core processes	Downstream processes	Total
Global warming potential (GWP)	Fossil	kg CO ₂ eq.	4.49E+03	4.87E+03	2.18E+02	9.58E+03
	Biogenic	kg CO ₂ eq.	1.15E+02	5.51E+01	1.03E+01	1.81E+02
	Land use and land use change	kg CO ₂ eq.	3.54E-01	1.77E-01	3.40E-03	5.35E-01
	TOTAL	kg CO ₂ eq.	4.61E+03	4.91E+03	2.29E+02	9.74E+03
Depletion potential of the stratospheric ozone layer (ODP)		kg CFC 11 eq.	1.71E-08	3.57E-09	2.35E-11	2.07E-08
Acidification potential (AP)		kg SO ₂ eq.	1.41E+01	4.68E+00	6.85E-01	1.95E+01
Eutrophication potential (EP)		kg PO ₄ ³⁻ eq.	1.32E+00	7.25E-01	1.10E-01	2.16E+00
Formation potential of tropospheric ozone (POCP)		kg C ₂ H ₄ eq.	7.58E+00	5.17E+00	6.44E-01	1.34E+01
Abiotic depletion potential – Elements		kg Sb eq.	4.42E-02	3.29E-04	1.06E-05	4.45E-02
Abiotic depletion potential – Fossil resources		MJ, net calorific value	1.57E+05	7.87E+04	2.83E+03	2.38E+05
Water deprivation potential (WDP)		m ³ world eq.	8.36E+03	2.34E+03	6.46E+01	1.08E+04

Use of resources for 1 tonne of Phthalocyanine blue pigment (β -modification) 15:3 brand AT

PARAMETER		UNIT	Upstream processes	Core processes	Downstream processes	Total
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	3.74E+03	1.87E+03	1.70E+02	5.79E+03
	Used as raw materials	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TOTAL	MJ, net calorific value	3.74E+03	1.87E+03	1.70E+02	5.79E+03
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	1.61E+05	7.93E+04	2.87E+03	2.43E+05
	Used as raw materials	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TOTAL	MJ, net calorific value	1.61E+05	7.93E+04	1.67E+04	2.43E+05
Secondary material		kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable secondary fuels		MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable secondary fuels		MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water		m ³	1.54E+03	8.34E+02	5.75E+00	2.38E+03

Waste production and output flows

Waste production for 1 tonne of Phthalocyanine blue pigment (β -modification) 15:3 brand AT

PARAMETER	UNIT	Upstream processes	Core processes	Downstream processes	Total
Hazardous waste disposed	kg	2.28E-05	1.72E-05	1.81E-06	4.18E-05
Non-hazardous waste disposed	kg	3.66E+01	2.01E+02	4.34E+00	2.42E+02
Radioactive waste disposed	kg	5.98E-01	2.00E-01	1.27E-01	9.25E-01

Output flows for 1 tonne of Phthalocyanine blue pigment (β -modification) 15:3 brand AT

PARAMETER	UNIT	Upstream processes	Core processes	Downstream processes	Total
Components for reuse	kg	0.00E+00	0.00E+00	0,00E+00	0.00E+00
Material for recycling	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00

References

EPD International (2021) General Programme Instructions for the International EPD® System. Version 4.0. www.environdec.com.

Official website of the JSC "Pigment" <https://krata.ru/>

Owner of the EPD



JSC Pigment

392000, RUSSIA, TAMBOV, MONTAZHNIKOV STREET, BUILDING 1

Creator of the EPD



Dmitrii Vadivasov

Alexander Derbenev

Olga Reshetar

CIS Center

Bld. 36/1, Lyusinovskaya Street

115093 Moscow, Russia

Phone: +7 (495) 128-95-45

E-mail: info@ciscenter.org



JSC Pigment

<https://krata.ru/en/>

+ 7 4752 79-50-02

INFO@KRATA.RU
SALES@KRATA.RU