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# Operational Due Diligence of OJSC Lakokraska

**17 August 2018**

**REPORT**

**KPMG LLC**
**57 Dzerzhinsky Avenue, office 53-2**
**220089 Minsk, Republic of Belarus**

**Telephone** **+ 375 17 372 72 57**
**Fax** **+ 375 17 372 72 58**
**Internet** **www.kpmg.by**

**Private & Confidential** **17 August 2018**

Mr. Denis Vladimirovich Meleshkin, Director
National Agency of Investment and Privatization of the Republic of Belarus

14 Bersona str.
220030, Minsk,
Republic of Belarus

Dear Denis Vladimirovich,

In accordance with the terms of reference set out in Contract №QCBS/05/18 dated 18 May 2018 (the “Contract”), concluded with the National Agency of Investment and Privatization of the Republic of Belarus (the "Client"), we attach a report on operational due diligence of OJSC Lakokraska (the "Company"). The report contain amendments based on Client’s comments on the report on operational due diligence of the Company of 10 August 2018.

This is a translation from the Russian version of the report. In case of any discrepancies between the two languages, Russian version should prevail.

The scope of work set out in p. 3 A c of the Appendix A to the Contract. This Appendix comprise the agreed scope of our enquiries, directed at those issues which you determined to be critical to your investment. You should note that our findings do not constitute recommendations to you as to whether or not you should proceed with the proposed transaction.

Our report is for the benefit and information of the addressees only. Our report should not be quoted or referred to, in whole or in part, without our prior written consent, except as specifically provided in the Contract.

The terms of reference for this report set out in the Contract have been agreed by the addressees and we will not accept responsibility or liability to any other party to whom the report may be shown or who may acquire a copy of the report.

We shall be pleased to receive your observations on our report.

We thank the management and employees of the National Agency of Investment and Privatization for cooperation on this part of the work under the Contract.

*Yours faithfully*

*Edgars Volskis*
*Partner*

**Important notice**

Our work commenced on 1 June 2018 and our fieldwork was completed on 27 July 2018. We have not undertaken to update our report for events or circumstances arising after that date.

In preparing our report, our primary source has been the Company's internal management information and representations made to us by management of the Company (The full list of used information sources is provided in the Appendix 1). We do not accept responsibility for such information which remains the responsibility of management. We have indicated within our report the sources of the information presented and have satisfied ourselves, so far as possible, that the information presented is consistent with other information which was made available to us in the course of our work in accordance with the terms of the Contract. We have not, however, sought to establish the reliability of the sources by reference to other evidence.

In performing our work, we have assumed the genuineness of all signatures and the authenticity of all documents submitted to us, whether original or copies. Further, we have assumed that all explanations provided to us by management are reflective of the factual position.

The prospective information set out within our report has been prepared by the Company; we do not accept responsibility for such information. We must emphasize that the realization of the forecasts is dependent on the continuing validity of the assumptions on which it is based. The assumptions will need to be reviewed and revised to reflect such changes in trading patterns, cost structures or the direction of the business as emerge. We accept no responsibility for the realization of the prospective financial information. Actual results are likely to be different from those shown in the prospective financial information because events and circumstances frequently do not occur as expected, and the differences may be material.

Our report makes reference to ‘KPMG Analysis’; this indicates only that we have (where specified) undertaken certain analytical activities on the underlying data to arrive at the information presented; we do not accept responsibility for the underlying data.

We would like to emphasize that we do not express an opinion on the information provided in this report and do not confirm its reliability and that our work was not an audit conducted in accordance with Belarusian or International Standards on Auditing. In addition, we do not express an opinion on the sufficiency for the purposes of the Client or the planned transaction for attracting investors procedures carried out by us in accordance with the agreed scope of work.

Not all the requested information was provided to us in full and in the required form and detail (see Appendix 1 for the list of information which was not provided). We did not conduct an audit and did not analyze all the primary accounting data and all Company operations.

# Glossary

| | |
|---|---|
| **APR** | Asia-Pacific region |
| **ASU** | Air separation unit |
| **Belstat** | National Statistical Committee of the Republic of Belarus |
| **bln** | billion |
| **BP** | Business plan |
| **BYN** | Belarusian Ruble |
| **CAGR** | Compound annual growth rate |
| **CD** | Civil defense |
| **CIS** | Commonwealth of Independent States |
| **CJSC** | Closed joint stock company |
| **EMS** | Environment management system |
| **EU** | European Union |
| **FCL** | Foreign credit lines |
| **GC** | Group of companies |
| **GRU** | Gas regulating unit |
| **ha** | Hectare |
| **incl.** | Including |
| **JSC** | Joint-stock company |
| **JV** | Joint venture |
| **kg** | Kilogram |
| **km** | Kilometer |
| **l** | Liter |
| **LLC** | Limited liability company |
| **m², m³** | Square meter, cubic meter |
| **MA** | Maleic anhydride |
| **mln** | Million |
| **MW** | Megawatt |
| **OJSC** | Open joint-stock company |
| **p.** | Page |
| **pp** | Percentage points |
| **PA** | Phthalic anhydride |
| **pers.** | Persons |
| **PJSC** | Public joint-stock company |
| **PP** | Production plant |
| **PUE** | Private unitary enterprise |
| **PVAD** | Polyvinylacetate dispersions |
| **PVC** | Polyvinyl chloride |
| **PWM** | Paintwork materials |
| **Q** | Quarter |
| **QCD** | Quality control department |
| **QMS** | Quality management system |
| **R&D** | Research and Development |
| **r/w** | Railway transportation |
| **RF** | Russian Federation |
| **RUB** | Russian ruble |
| **SB** | Supervisory Board |
| **State Committee on Property** | The State Committee on Property of the Republic of Belarus |
| **t** | Ton |
| **thd** | Thousand |
| **TUE** | Transport unitary enterprise |
| **USD** | US Dollar |

# Content

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# Key findings and recommendations

# Key findings and recommendations (1/7)

| Factor | Description | Recommendations |
|---|---|---|
| **Market position** | The Company is the only PA producer on the Belarusian market. Around 80% of PA produced is shipped for export, the remainder is used in semi-finished varnish production<br><br>In mid-2017 the investment project to carry out a technical upgrade of phthalic anhydride production was completed, which resulted in 20% growth of PA production in 2017 | ↑ *Phthalic anhydride production*<br>– Inform any potential investor about the Company's opportunities on the international PA market; this could bolster the Company's negotiating position in the transaction process<br>– Take into account the availability of own PA as a raw material for semi-finished coatings production, which ensures the required quality of own products, an absence of transport costs, and independence from suppliers |
| | Around 100 enterprises are present on the Belarusian paintings and coatings market, with more than half of coating materials being produced by seven-to-eight leading companies. OJSC Lakokraska has the largest market share, with 27%. This is due to the Company's prices for most coating products being lower than those of competitors (for more details, see pages 24-25) | ↑ *High internal market share*<br>Inform any potential investor about the strong position of the Company on the Belarusian market |
| | On foreign markets, particularly Russia and Ukraine, the Company's PWM prices equal or exceed competitors' prices, which is mainly due to the high cost of transporting coatings for delivery to external markets (for more details see page 25). The delivery of products is solely performed by the subsidiary Transport Unitary Enterprise LakokrasServis. According to management, the Company's logistics are inflexible (in comparison to competitors) and deliveries are time-consuming<br>Due to the Company's low level of competitiveness on foreign markets, the Company's exports of PWM in 2017 made up only 15% of the annual sales volume | ↓ *Low price competitiveness on foreign markets*<br>Analyse transport costs and carry out a benchmarking assessment of the conditions of third-party logistics companies in order to check the efficiency of working with TUE LakokrasServis. Based on the results of the analysis, consider reducing PWM delivery costs by outsourcing transport logistics or making it a part of any potential investor's logistics chain |

● Issues for discussion with the investor that do not potentially make an impact on investment attractiveness of the Company

↑ Issues for discussion with the investor that can potentially improve investment attractiveness of the Company

↓ Issues for discussion with the investor that can potentially reduce investment attractiveness of the Company

# Key findings and recommendations (2/7)

| Factor | Description | Recommendations |
|---|---|---|
| **Market position (continued)** | The Company focuses mainly on large industrial customers and has almost no work with individuals. According to management, the potential for growth in the industry is limited and the Company is missing opportunities to sell small retail consignments | *Growth opportunities in retail sales*<br>– Consider reviewing the sales structure in order to increase the volume of retail sales<br>– Inform any potential investor about the sales growth outlook in the retail sector |
| **Production capacity** | According to technical experts, all equipment corresponds to the production needs of the current range of paint materials for various profiles for all industries<br>Please be aware that a significant amount of equipment was installed in the 1970s, hence it will need to be upgraded in the near future (for details see pp. 29-30) | *Condition of production equipment*<br>– Analyse the technical condition of the equipment and, if necessary, establish the economic justification and need for any upgrades<br>– Take into account that replacing obsolete equipment may require additional investment and reduce the transaction price offer |
| **Production infrastructure** | Most engineering constructions and infrastructure were built during the commissioning of the plant in the 1960s. According to management, existing engineering networks of water, heat, and power supply have already passed their standard service life and require capital replacement (for details see p. 31) | *Condition of production infrastructure*<br>Take into account that the need to update the infrastructure and bring it to the standards of any potential investor will require additional investments and may reduce the transaction price offer |
| | Since 2017, after PA production modernization the need in thermal energy has been fully covered by the heat removed from the process.<br>In 3q 2018, the Company plans to commission its own electricity generating unit of a 2MW capacity on secondary resources from PA production, which will lead to decrease in the amount of energy supplied from Belenergo | *Energy supply*<br>Inform any potential investor that the Company is fully supplied by its own heat energy and plans to reduce the amount of energy supplied from the grid |

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# Key findings and recommendations (3/7)

| Factor | Description | Recommendations |
|---|---|---|
| **Company products** | The Company produces a large range of paint materials, however, a substantial share is taken up by traditional varnishes and paints for the industrial sector of Belarus. There is currently a trend in the global paints and coatings market to switch from traditional alkyd PWM to more environmentally friendly water-dispersion materials, to boost economic efficiency and the service life of coatings by increasing the proportion of materials with a high dry residue amount<br><br>Over the next few years the Company is planning to develop new types of paintwork materials, such as anticorrosive paint, high-viscosity materials with a high level of dry residue, and materials that have a lower level of energy consumption during application. The Company has available manufacturing capacities for water-dispersion materials' production (in 2017 the utilisation rate was 27.5%), and these materials, in turn, occupy a significant share of paint material imports into Belarus<br><br>In 2016-2017 the Company fulfilled the plan for the production of innovative products: these make up around 10% of total products sold per year (for details see pp. 35-36) | ↑ *Production of new materials*<br>— Assess the technical capacities and analyse the profitability of water-dispersion materials production, which is in demand, as well as new PWM production<br>— Inform any potential investor about the initiative to develop promising new and innovative products that have no equivalents in Belarus<br>— Inform any potential investor that the Company's plans are in line with global market trends |
| **Investment programme** | Under the investment programme up to 2030, planned investment costs for 2018-2030 are USD22.1 million. The main source of financing (85%) is foreign credit lines<br><br>Due to the high level of indebtedness and the lack of own working capital in 2018, the Company does not plan to implement any large investment projects (for details see p. 34) | ↓ *Investment programme assurance*<br>— Consider the volume of foreign credit lines secured, which may require additional funding that a potential investor may need to secure<br>— Conduct an analysis of the technical and economic feasibility of the investment programme<br>— Take into account that the high level of indebtedness may reduce the transaction price offer |

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# Key findings and recommendations (4/7)

| Factor | Description | Recommendations |
|---|---|---|
| **Investment programme (continued)** | Currently, maleic anhydride is not produced in CIS countries. The Company is considering implementing a project for the own production of this product. The project is planned for 2021-2025<br><br>According to comments from engineering experts, PA production technology is enhanced every four-to-five years, resulting in a reduction in the volume of waste gases that form the raw material for MA production. This raises questions about the economic feasibility of the project. In addition, the company SIBUR Tobolsk (Russia) is currently planning to build an MA production site with an annual capacity of 40 thousand tonnes per year (commissioning set for 2021) | *Maleic anhydride production*<br><br>— Analyse the economic and commercial feasibility of MA production<br>— Factor in the significant likelihood that the potential market will be occupied by the time the project is implemented |
| **Labour remuneration** | The Company has regulations on bonuses for each category of employees, which directly link bonuses with the results of each employee's work. The remuneration of the director and deputy directors depends on the results of the financial and economic activities of the enterprise<br><br>At the same time, the remuneration system entails a complex payment structure. Staff salaries are made up of 1) a tariff rate that depends on the qualification of the employee, the complexity of the work, and the number of hours worked, and 2) a non-tariff part, or remuneration in the form of additional payments and allowances (for details see p. 18). In 2017 additional payments amounted to 52% of the payroll budget | *Payroll system*<br><br>— Inform any potential investor about the correlation between the remuneration amount and the specific performance indicators of each category of workers<br>— Consider optimising (simplifying) the payroll system by increasing the tariff rate share of additional payments in the salary structure |

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# Key findings and recommendations (5/7)

| Factor | Description | Recommendations |
|---|---|---|
| **Labour remuneration (continued)** | Under the collective agreement the Company is obliged to ensure an annual growth in real salary of above 8%, and to also ensure that the level of the average monthly salary is at least 300% of the minimum consumer budget, which in 2017 was around 397 BYN (for details see page 19)<br><br>In 2017 the Company dismissed 59 employees (5% of the total) in order to reduce production costs and to streamline the work of personnel. As a result, while the nominal average monthly salary rose in 2017 by 7% (to 750 BYN), the payroll budget grew by 1.5%. In 2018 the Company plans to dismiss more than 30 employees (for details see pp. 17-19)<br><br>The average salary at the enterprise in 2017 was 6% lower than the average level in the industry in the Grodno Region | ↓ *Salary obligation*<br>– Inform any potential investor about the obligations to ensure the remuneration level specified in the collective agreement and the salary growth requirement – these may limit opportunities to optimise the Company's activities<br>– One of the main conditions for concluding a transaction with any potential investor is the preservation of jobs, as well as providing social guarantees to employees; hence an optimisation of headcount would be desirable before the completion of a potential transaction |
| **Personnel** | The Company has a primary trade union organisation that represents employee interests. The collective labour agreement for 2016-2019 has been signed between the union and the director of the Company (for details see p. 19). This agreement imposes certain obligations on the Company, as it includes significant incentives and preferences for employees (material bonuses or holidays, bonuses for social activities, etc.) | ● *Collective agreement*<br>– Inform any potential investor about the obligations to ensure the remuneration level specified in the collective agreement<br>– Consider changing the specific condition preferences for employees of certain categories |
| | In 2018 the Company introduced a professional training system for all employee categories. Trainings include internship opportunities, professional trainings, retraining, and advanced trainings. In 2018, BYN47 thousand will be allocated to train 401 employees | ↑ *Staff training*<br>Inform any potential investor about the implementation of the staff training programme |

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# Key findings and recommendations (6/7)

| Factor | Description | Recommendations |
|---|---|---|
| **Corporate governance** | One of the corporate governance bodies of the Company is the Supervisory Board, which exercises strategic management over the enterprise. The Supervisory Board consists of seven individuals, including four representatives from Belneftekhim | *Supervisory Board structure*<br>In the event of acquiring a minority stake in the Company, bring to the attention of any potential investor the structure of the Supervisory Board, which includes representatives from Belneftekhim<br>Review the structure of the Supervisory Board by considering including independent directors that possess management experience in chemical or related industries as well as a strategic view on business development. An investor should secure membership in the Supervisory Board, with the right to vote in strategic decisions |
| **Social assets** | 95 Company's employees are engaged in the work of social facilities, and account for 6% of the payroll fund. 52 people are employed at the health resort Rainbow, which necessitates taking financial and administrative resources from core activity<br>The Company's social assistance also includes a canteen, buffets, a medical centre located at the enterprise, and four dormitories. The services of these facilities form part of the non-material motivation and proper working conditions of employees (for details see p. 19)<br>In contrast to other social assistance facilities, the health resort is unprofitable (the respective loss for 2017 was BYN169 thousand) | *Diversion of resources to the social sphere*<br>– Inform the investor about the non-core social assets of the Company<br>– Consider a spin-off of the Rainbow health resort, for example, create a separate legal entity and sell it to a specialised investor |

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# Key findings and recommendations (7/7)

| Factor | Description | Recommendations |
|---|---|---|
| **QMS** | OJSC Lakokraska has an integrated quality management system (QMS), certified under STB ISO 9001-2009 (for details see page 38). According to management, the effectiveness and performance of the QMS is constantly being scrutinised. Reports on the results of how the QMS functions at the enterprise were not provided, as they are the intellectual property of the Company<br>The Belneftekhim concern developed a Plan of activities for 2016-2020 to stimulate the introduction of advanced technologies in the country's economy and a modern, international-standard QMS. According to management, OJSC Lakokraska is fulfilling the prescribed measures. The Company has provided an action plan for 2018 for the consideration of any potential investor<br>A specialised testing laboratory checks that the quality of products conforms with respective necessary standards and technical conditions. According to comparative test results of product samples from similar manufacturers, the quality of the Company's products is not inferior to the quality of competitors' products (for details see pp. 40-41) | ↑ *QMS*<br>— Inform any potential investor about the current QMS<br>— Consider the need to fulfil all requirements related to licensing and certification and maintaining the appropriate level of product quality |
| **Environmental policy** | The environmental management system of the Company is certified for compliance with the national standard STB ISO 14001: 2005 as well as the international standard ISO 14001: 2004. The Department of Labour Protection and the Environment regularly updates the licenses and certificates required for the implementation of activities<br>By 14 September 2018 the Company must pass STB ISO 14001-2017, since the old version of the standard will be invalid. In May 2018 the Department of Labour Protection and the Environment passed the first stage of certification for compliance with the new standard. Management assured us that the likelihood of the non-confirmation of compliance is minimal (for details see p. 42) | ↑ *Environmental management system*<br>Inform any potential investor about the compliance of the Company's environmental management system with current environmental standards |

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# Company overview

# General info (1/2)

The Lakokraska enterprise began its work in 1956 as a Lida production association, and after the privatization it was transformed into an open joint-stock Company by the State Committee on Property decision dd 30.12.1993

Production area is located in Lida, 71 Ignatova street, it is 120 km away from the regional center – Grodno (refer to the map on the right side)

The distance from Lida to the borders of neighboring countries is as follows: Russia - 450 km, Ukraine - 300 km, Poland - 140 km, Lithuania - 50 km and Latvia - 300 km

The main shareholders are: the State Committee on Property - 99.9%, individuals - 0.09%, legal entities - less than 0.01%, among them:

- CJSC Gomel Regional Depository Center, Gomel - 0.0014%
- CJSC Liderinvest, Minsk - 0.0001%
- CJSC Stock and Trust Minsk - 0.0001%
- LLC EgalinInvest, Gomel – 0.0039%

The Company owns 100% shares in the unitary enterprise LakokrasServis engaged in transport services; 14% in the Company BNH-Oil Polska Sp.z.o.o, distributor of the Company's products in Poland, as well as other EU countries. The Company is also the sharepholder of BPS-Sberbank and BelVEB banks (less than 0.01%). The subsidiary company of the trading house Lida (Russia) was liquidated in 2017 due to low competitiveness in the Russian market

Designed initially as a plant of national importance, it has become one of the largest paint and varnish enterprises in the USSR chemical industry. Originally, the plant was specialized only in large-capacity production. Therefore, in order to saturate the market with consumer goods, since 1994 the enterprise has organized small packing of paint and varnish materials

# General info (2/2)

Currently, the average annual capacity for the coatings production is about 65 thousand tons. The main activity of the Company includes the production of paints, phthalic anhydride, synthetic resins and packaging for their own needs. For more details see p. 26

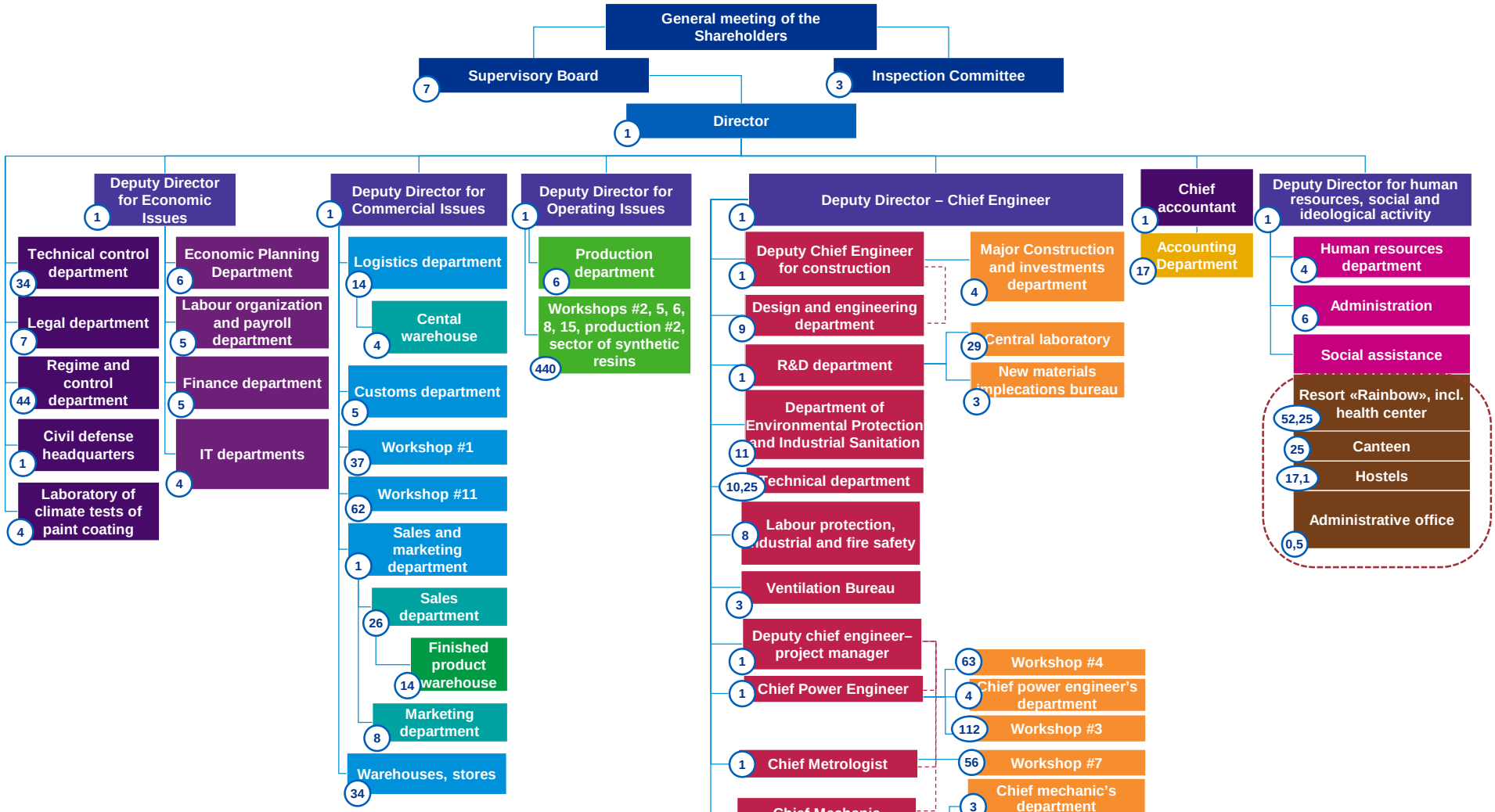
The coatings materials are produced under the registered trademarks "Fresco" (environmentally friendly paint), "Lida", "Massive" (for wood coating); semi-finished products - "Lida"; cooling technical fluids - "Garage". There is also organized contract manufacture of anticorrosive materials in the field of metal protection on the industrial objects with the Dutch Company Baril, and also with the Company Magyar Lakk, Hungary. Products of OJSC Lakokraska is marketed as a stable quality materials at a reasonable price

More than 70% of the total output is exported to different countries: Russia, Ukraine, Uzbekistan, Kazakhstan, countries of Europe and Asia

The Company has representative offices in Russia - LLC Belneftekhim-ROS (Moscow) and LLC LAKEM (Rostov-on-Don), Ukraine - LLC LK-Ukraine (Chernigov), Poland – BNH - Oil Polska (Warsaw), Lithuania - UAB Likon (city of Olita) and Georgia - BNH Tbilisi (Tbilisi)

The schematic map is on the right. On the territory of the Republic of Belarus, sales are carried out through the regional Company's warehouses, indicated on the map by red points

# The organizational structure and personnel (1/2)




Legend: - The total headcount in a structure unit as of 1 January 2018
- functional subordination

Source: The organizational structure provided by the Company

# The organizational structure and personnel (2/2)

## The organizational structure

The organizational structure of OJSC Lakokraska has a linear control with functional services that influence the production units operations. There are 11 people in direct subordination to the Director of the Company - deputy directors, department heads and some other specialists

The table on the right shows the number of employees in the Company, as well as changes in the staff structure by years

During 2016-2017 the Company has dismissed 112 employees, predominantly blue-collar workers. Per management, this redundancy was carried out to optimize the operating costs. There is no labor shortage at the enterprise. Employee turnover rate was 1.23% and 0.7% in 2017 and 2016 respectively

According to the order on headcount optimization for 2018, the Company plans to dismiss more than 30 people until 1 November 2018. Some increase in the headcount in the 1q 2018 was due to workers and technologists involvement in the production of PWM, which has an apparent seasonality (finishing works in construction are carried out predominantly in summer)

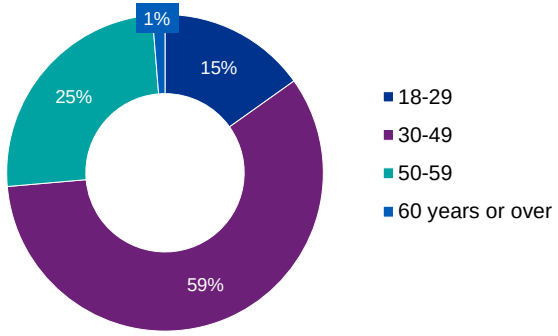
**Personnel structure, pers.**

| Headcount as at the and of the reporting period | 2015 | 2016 | 2017 | 1q 2018 |
|---|---|---|---|---|
| Core activities | 1,182 | 1,138 | 1,077 | 1,093 |
| workers | 832 | 798 | 747 | 761 |
| management | 145 | 145 | 142 | 143 |
| specialists | 202 | 192 | 185 | 186 |
| other staff | 3 | 3 | 3 | 3 |
| Secondary activities* | 105 | 96 | 98 | 95 |
| **Total** | **1,287** | **1,234** | **1,175** | **1,188** |
| **Average staff number for the period** | **1,316** | **1,221** | **1,160** | **1,113** |

Source: Accounting records
Note: *Workers in social assistance

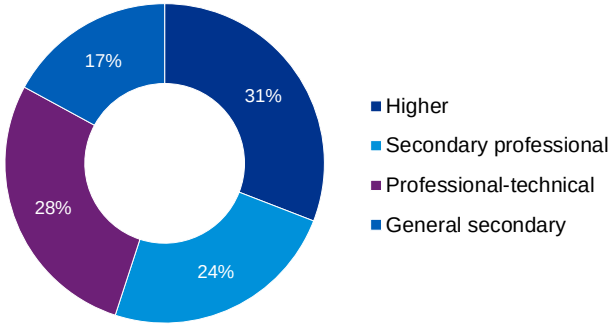
Educational background of the employees and age structure are presented on the diagrams

**Age structure, 2017**




Source: Accounting records

**Educational background of the employees, 2017**




Source: Accounting records

# The personnel policy and labor remuneration (1/2)

**Salary level**

The dynamics of the average monthly salary of employees of OJSC Lakokraska is shown on the graph on the right. The level of average monthly salary in 2017 in relation to 2016 increased by 7%, which was due to the following reasons:

- an increase in the first class labor rate by 10% since 1 August 2016
- an increase in the labor rate for the extension in the volume of work performed as a result of a reduction in the staff number

The average salary level in the industry sector in the Grodno region in 2017 was 801 BYN

The payroll budget by employee category in 2017 is presented on the diagram on the bottom of the page. Compared to 2016, the payroll budget in 2017 increased by 1.5%, which is explained by an increase in the average monthly salary by 7% and a simultaneous decrease in the staff number by 5% (see the previous page)

**Remuneration system**

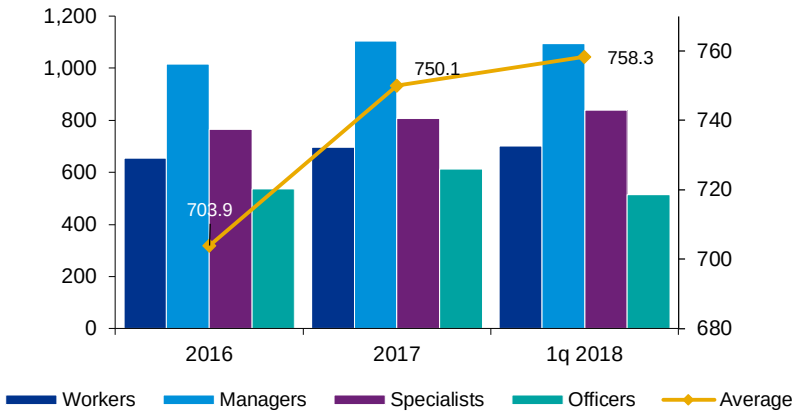
Depending on the subdivision the procedure for the salaries formation is carried out according to one of the three remuneration systems: time-premium; piece-bonus; collective (the salary of an employee is directly dependent on the quantity and quality of the products produced by the whole team)

**Employee salary** consist of a *conditionally-constant (tariff)* part depending on the qualification of an employee, the complexity of the work performed and actual working hours, and *the variable part* - individual incentive and compensatory payments or payments that depend on the final result of the Company's work and an employee's personal contribution to general labor results

**The Director's remuneration** is determined in accordance with the Regulation on the terms of the heads remuneration of the organizations belonging to the Belneftekhim concern and depends on the performance of the enterprise. This Regulation was not provided for the analysis

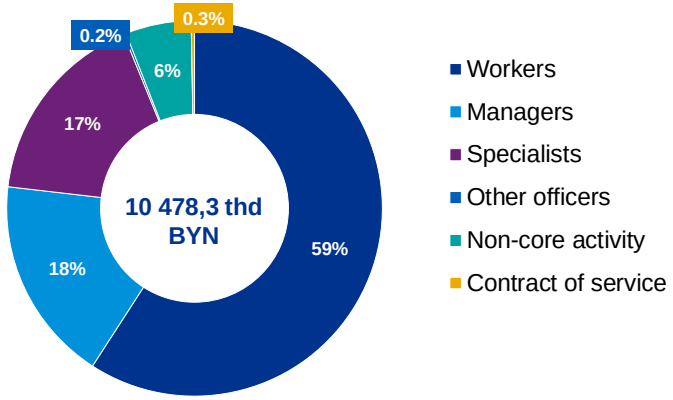
For the employees of each subdivision there are Regulations on bonuses that ensure a direct link between bonuses and the results of each employee's work. The remuneration of *Deputy Directors* depends on the results of the financial and economic Company's performance

**Average monthly salary, BYN**




Source: KPMG analysis based on financial accounting data

**The payroll budget by employee category, 2017**




Source: KPMG analysis based on financial accounting data

# The personnel policy and labor remuneration (2/2)

**Trade union committee and collective labor contract**

The Company has a primary trade union organization, which includes 99.9% of employees; joining the organization is voluntary. A collective labor contract for 2016-2019 was signed between the trade union committee of OJSC Lakokraska and the Director of the Company. This agreement is the main legal document regulating labor and socio-economic relations between employer and employees of the Company. Compliance with the terms of the contract is checked every six months

According to the contract, the Company defines the conditions necessary to increase the first class labour rate:

- growth in output
- quick labor productivity growth in comparison with salary growth
- absence of arrears in salary payments
- fulfillment of the terms of state support and other preferences

The Company is obliged to ensure the average monthly salary on the level of at least 300% of the minimum consumer budget and the first class labour rate on the level of at least 60% of the minimum consumer budget, as well as indexing the salaries taking into account inflation, ensuring real salary growth of not less than 8% per year. In 2016 – 1q 2018 these clauses of the agreement were fulfilled by 60-70%

In addition, the Company pays employees material assistance and bonuses timed to professional holidays, employee-relevant events, for participation in cultural events, membership in volunteer organizations, etc. Each year these payments amount up to 7-10% of the payroll budget

**Intangible motivation**

On the territory of the Company there are a canteen for 132 people (meals are free of charge for workers of the PA workshop), 3 buffets for 40 people and a medical center with 9 employees providing primary care, certification for admission to work, therapeutic services and other

Also, if necessary, employees are provided with places in one of the four dormitories of the Company in Lida (780 beds in total). There are about 260 employees and their families living in the dormitories. Third parties occupy about 10% of the beds. All utility and maintenance costs are paid off by residents in full; for employees there are no other surcharges for the accommodation

The Company owns a health resort "Rainbow" intended for recreation of the personnel. The health resort has 80 beds and provides medical services. The cost of services for employees is much lower than for third parties

Besides, another intangible incentive is the sale of paintwork materials to employees at cost price in the specialized store

**Staff training**

As per human resource department, only in 2018 the Company formalized a plan for staff training, previously it was considered on an individual basis as requested by employees. According to the plan, upgrading and training for 401 employees are planned for 2018. The total cost is planned at the level of 47 thousand BYN

**Ideological work**

Informational work at the enterprise is planned on an annual basis. Plans for ideological work in the Company are developed and approved by the Director, the implementation is supervised by deputy director for human resources, social and ideological activity

# Management jurisdictions

## The Supervisory Board (7 persons)*

- *Determining the quantitative representation of the board of administration, signing a labor contract with the Director*
- *Decision-making on appointment of deputy directors upon presentation of the Director*
- Calling a shareholders meeting
- Approving significant transactions related to property valued at 20-50% of the Company's assets book value
- Decision-making on acquisition of securities (excluding shares)
- Coordinating decisions regarding ownership structure
- Determining the main activities and development of the Company's strategy
- Approving the annual financial and economic plan of the Company and control over its implementation
- Determining payment terms for members of the executive bodies (the Director and members of the Board of Administration)

*Including 4 employees of Belneftekhim concern

## The Director

- *Appointment of the employees (members of the Board of Administration, Deputy Directors - as decided by the Supervisory Board)*
- Operational managing of the Company's activities, implementation of the General Shareholders Meeting's and the Supervisory Board's decisions
- Representing the interests of the enterprise and making transactions on its behalf in accordance with the Charter
- Disposal of the Company's property
- Approving the Company's unitary enterprises' charters
- Approving the organizational structure and staffing level
- Ensuring safety and the possibility of using the Company's documents

## The Board of Administration (6 persons)*

- Ensuring preparation of the Company's and its unitary enterprises' development programs
- Decision-making on the products delivery outside the Republic of Belarus without prepayment and price negotiation
- Decision-making on the transactions on alienation and pledge of property
- Approving regulations on the Company's branches and representative offices
- Increasing the first-class salary labor rate
- Approving transactions related to property valued at less then 20% of the Company's assets book value

*According to the Company's Charter, The Board of Administration consists of:

- First Deputy Director - Chief Engineer
- Deputy Director for Economics
- Deputy Director for Commercial Affairs
- Deputy Director for Human Resources, Social and Ideological Activity;
- Deputy Production Director - Head of Software
- Chief Accountant

## The Auditing Committee (3 persons)

- *Annually elected by the General Shareholders Meeting*
- Annual audit on the financial and economic performance of the enterprise for the reporting year
- Audit or verification - by decision of management bodies in terms established by them
- Audit or verification - on written request of shareholders
- The Director, a member of the Supervisory Board or the Board of Administration can not be elected as a member of the Auditing Committee

*Legend:* → *- Appointment by the Supervisory Board*

*Source: Company Charter*

KPMG

# Competitive analysis

# The paints and coatings world market review

## General information, trends

According to the forecast of the analytical agency Markets&Markets, the volume of the world market of paintwork materials in 2017 has amounted to USD160.5 billion and will grow with the CAGR 5.45% annually and by 2022 will amount to USD209.4 billion

Thousands of local companies and multinational corporations are involved in the segment of paints and coatings, sales of the largest ones are shown on the slide on the right. In 2017 the highest market share growth was shown by Sherwin-Williams (+2 pp), BASF (+0.8 pp), Nippon Paint (+0.7 pp), AkzoNobel (+0.6 pp)

**Paints and coatings market** can be described as follows:

— A growth in the developing countries' market share, mainly in the Asia-Pacific region as the largest consumers of industrial PWM – such as automakers, furniture and woodworking companies – are gradually shifting their demand from Europe and America to cheaper markets in Asia

— Traditional varnishes and enamels with a high content of volatile organic compounds have been replaced by environmentally friendly PWM and their market share will continue to grow

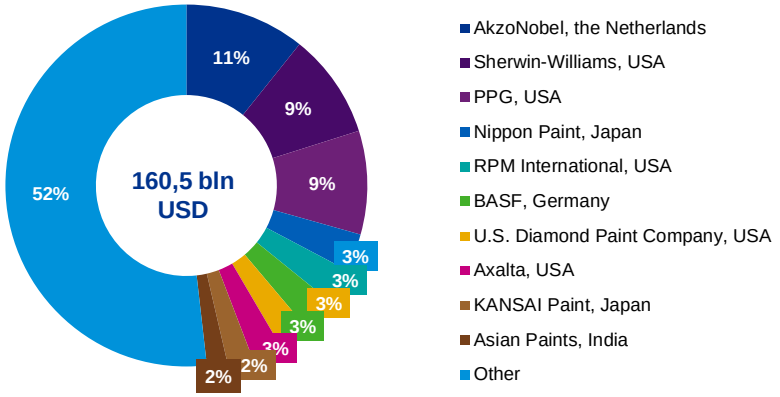
— A growth of cost effectiveness and service life – market share growth of materials with a high dry residue

— An expansion of a corrosion-resistant coating market due to the increase in demand for commercial and naval vessels in developing countries, as well as the growth of the motor industry in the APR and Latin America countries

— In Europe – development of industrial coatings for wood painting due to the evolvement of the furniture sector and plastics – through investments in the electronic and motor industry

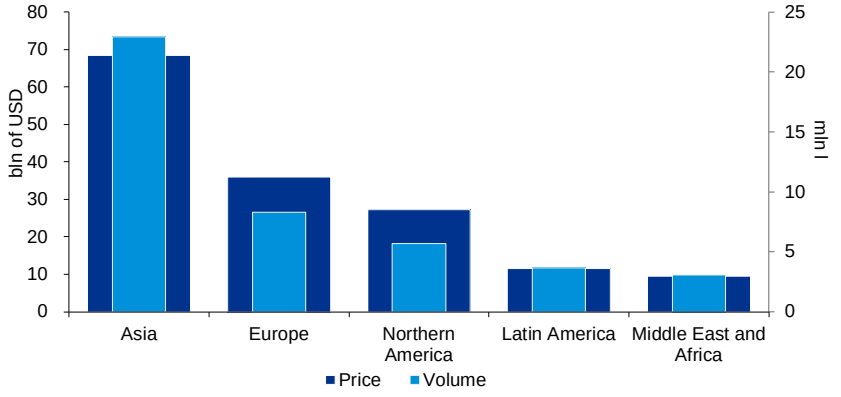
According to the Company's market research, the annual potential of **the Russian paints and coatings market** is in the range of 1.0 - 1.2 million tons. The main producers are CJSC Empils, JSC Russian Paints, Yaroslavl Paint holding company, Tikkurila LLC, PJSC Pigment Holding Company, CJSC ABC Farben, etc. The share of industrial enterprises in PWM consumption in Russia accounts for 30%, the share of consumer market and construction - 70%

## Sales of world's top ten paints companies, USD billion




Source: World's Top ten Paints Companies 2017 Annual Report

## Paints and coatings world market, 2017




Source: Review of the paint materials world market, Russian coatings journal "Paintwork materials and their use"

# The phthalic anhydride world market review

### PA world market

In 2016 the world consumption of PA was about 4 million tons. According to the research of the analytical agency Research & Markets, the expected PA world market will be growing with 5.5% CAGR in 2017-2021

The PA world market is characterized by an apparent seasonality due to the fact that the main PA consumers are enterprises producing plasticizers and PWM products

### Main consumers and demand dynamics

Asia and Europe are the main regions of PA consumption (39% of world consumption). The largest demanders in the world are Italy, Germany, Turkey and Canada

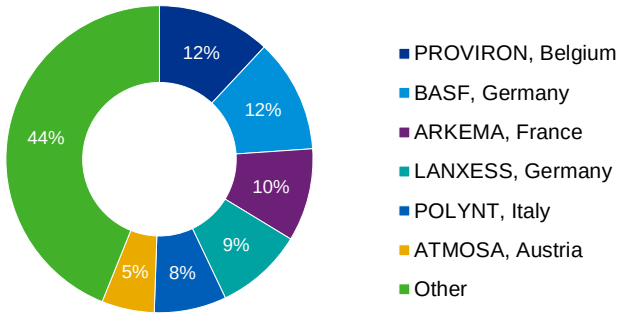
Considering the PA demand seasonality, the prices rise in March and fall down in August. It can also be explained by the excess of PA demand over its supply in a peak season

### Key producers

The USA is the main PA producer with the production output of more than 500 thousand tons per year. The main US producers are Exxon, Sunaco, Stepan and Sterling. The APR has the largest capacity for PA production: China, Japan, South Korea, India, Taiwan and Thailand

Europe (excluding CIS countries) accounts for 23% of the world's production capacity (more than 900 thousand tons). Main producers of PA in Europe are represented on the diagram on the right

### PA producers in Europe, thd tons




Source: The Company's market research, 2016

**Russian PA market** has the potential of more than 45 thousand tons per year. According to the Company's market research, the share of OJSC Lakokraska on the Russian market is 16%. The largest producers are JSC Kamteks-Khimprom with the market share of 70%, Gazpromneftehim Salavat LLC with the market share of 17% (produces PA only for own use)

OJSC Lakokraska is the only PA manufacture on **the Belarusian market**. In 2017 the company sold 25 thousand tons of PA (another 6 thd tons were used for own production), 99.8% of which were shipped for export. PA import in Belarus is insignificant: in 2017 it amounted to 24 tons

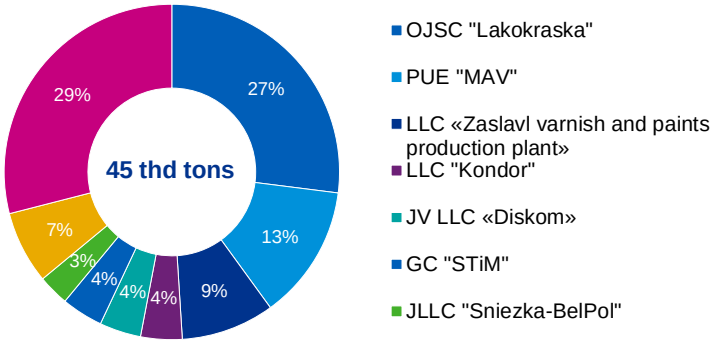
The main sales channels are representative offices of the Company in neighboring countries, in other cases - wholesale trade, B2B

# Review of the PWM market of the Republic if Belarus

According to the Marketing Department, the capacity of the paints and coatings market of the Republic of Belarus in 2016 was estimated at more than 45 thousand tons. About 100 enterprises are engaged in the production of paintwork materials in the Republic of Belarus, more than 50% of PWM are produced by 7-8 leading companies. The market shares of all paints and coatings market participants are presented on the diagram below

According to Belstat, in 2017 PWM export from the Republic of Belarus amounted to 30.3 thousand tons, including the export of Lakokraska - 2.1 thousand tons (15% of annual sales volume). The Company exports 35.8 thousand tons of semi-finished varnishes. The countries for export are Russia (51%), Ukraine (40%), other CIS countries (8%), foreign countries (0, 2%). PWM import in the Republic of Belarus is subject to customs duty equal to 5%

**Belarusian market participants, 2016**

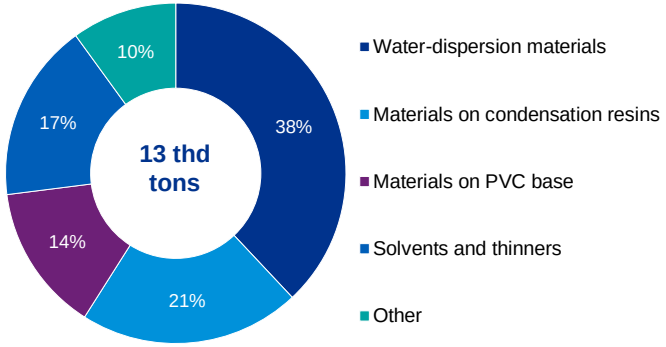



Source: The Company's market research

The following foreign companies are represented on the market of the Republic of Belarus: Sadolin (Latvia), Tikkurila (Finland), Caparol (Germany), Sniezka (Poland), Malfarb (Moldova), Vivacolor (Estonia)

In 2016 groups of water-based materials predominated in the commodity structure of import in the Republic of Belarus (see the diagram on the right). At the same time they are poorly presented in the product structure of OJSC Lakokraska

**Import structure, 2016**




Source: The Company's market research

According to the Marketing Department, in recent years the paints and coatings market is divided between decorative and industrial products in the ratio of 40-45% and 55-60% respectively. At the same time domestic supplies in the B2C segment are growing. More paintwork materials are being bought by private consumers through retail chains and large construction stores

The structure of PWM consumption in industry breakdown is presented by 4 main sectors: industry (29%), consumer market (14%), construction (9%), woodworking industry (2%)

# Comparative price analysis

| The Republic of Belarus (excluding VAT, including tare, FCA factory) | | | | |
|---|---|---|---|---|
| BYN/kg | OJSC Lakokraska | PUE MAV | OJSC Minsky LKZ | LLC Zaslavsky LKZ |
| Primers, alkyd | 2.3-3.6 | 3-4.3 | ↑ 3.6-4.2 | ↑ 2.4-2.9 |
| Enamel PF-115 | 2.6-4.5 | 4-7.8 | ↓ 4.1-6.2 | ↑ 2.6-3 |
| Enamel PF-266 | 2.6-3.9 | 3.9-4.7 | 3.8-4.8 | ↑ 2.7 |
| Primer-enamel on rust | 4.7-6.4 | 9.2-10.5 | 7.7-9.9 | - |
| Primer FASTPRIME | 4.5-5.7 | 8-8.4 | - | - |
| Enamel FASTCOAT | 6.7 | 9.7 | - | - |
| Chemical resistant materials | 2.8-5.4 | ↓ 8.4-14 | - | 3.6-4.5 |
| Epoxy materials | 4.9-6 | - | - | 5.6-6.5 |
| Varnishes, alkyd | 4-4.2 | 5.6 | 7.8-8.9 | - |
| Water-dispersible materials | 1.8-7 | 1.7-9.7 | ↑ 1.7-8.5 | - |
| Dispersion of polyvinyl acetate | 2.5-3.3 | 4-4.2 | - | - |

| RF (price quoted to the supply market, including VAT, tare) | | | | |
|---|---|---|---|---|
| RUB/ton | OJSC Lakokraska | Lakra Sintez LLC | CJSC Empils | PJSC Pigment |
| Enamel PF-115 (GOST) | 91-151 | - | 116-127 | 76-113 |
| Enamel PF-115 | 71-97 | 65-94 | 55-75 | 52-83 |
| Enamel PF-115 | 64-79 | - | 53-65 | - |
| Enamel PF-266 | 69-97 | 54-71 | 59-64 | 55-114 |
| Varnishes | 82-159 | - | - | 111-143 |

| Ukraine (price quoted to the supply market, including VAT, tare) | | | |
|---|---|---|---|
| UAH/kg | OJSC Lakokraska | PP Polisan LLC | Lakokrasochniy centr GROS LLC |
| Enamel PF-115 | 28.5-45.8 | 24.5-37.4 | ↓ 29-35 |

Source: The Company's market research

Note: ↑ Production of this manufacturer have a volume larger than the volume of the analogue of OAO Lakokraska

↓ Production of this manufacturer have a volume smaller than the volume of the analogue of OAO Lakokraska

According to the data provided be the Company, comparative price analysis was prepared in product types and sales markets breakdown. On the tables on the left there are prices for the products of OJSC Lakokraska in comparison with the prices for products-analogues of competitors

For most of the PWM products on the Belarusian market the Company's prices are lower than those of its competitors. At the same time on the markets of Russia and Ukraine the Company's prices are comparable or even higher than those of the competitors. First of all, it is explained by high transportation costs for delivery to the markets

The PA price is determined primarily by quotations for main raw materials for PA production - ortoxylene. The prices for products (FCA factory) of the largest Russian company JSC Kamteks-Khimprom in 2017 were set at RUB78-80 thousand per ton, while the Company's price is RUB76-78 thousand per ton

In Russia and Ukraine the sales are organized not directly to consumers, but through trading houses: in Russia - LLC Belneftekhim-ROS (without distribution margin, special price), Ukraine - LLC LK-Ukraine (distribution margin – 12%)

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# Manufacturing process

## Manufacturing process

# Product lines

### Main types of the Company's products

**Phthalic anhydride**
- Solid
- Liquid

**Paintwork materials for construction and general industrial purposes**
- Pentaphthalic
- Glyphthalic
- Melamine-alkyd
- Alkyd-phenolic
- Polyurethane
- Uralkid
- Polyvinyl butyral
- Polyvinylbutyrol-phenolic
- Urea-formaldehyde
- Alkyd-urethane
- Alkyd
- Acrylic
- Nitrocellulose
- Epoxy
- Water-dispersive
- Polyurethane

**Facade paints**
- Perchlorovinyl
- Water-dispersive
- Acrylic silicone
- Acrylic

**Chemically resistant paintworks materials**
- Based on copolymers of vinyl chloride
- Enamels, varnishes based on perchlorovinyl resin

**Paintwork materials for special purposes**
- Melamine formaldehyde
- Acrylic
- Organic-silicone
- Fillers
- Others

The enterprise also produces semi-finished resins, semi-finished varnishes and metal containers (barrels) for its own needs

### Dynamics of production output and capacity utilization

**Production output and capacity utilization (2016 – 1q 2018)**

| | 2016 | | 2017 | | 1q 2018 | |
|---|---|---|---|---|---|---|
| ton | output | utilization | output | utilization | output | utilization |
| PA production | 25,755 | 97.2% | 30,967 | 96.1% | 13,699 | 96.1% |
| PWM production, incl. | 49,346 | 73.6% | 50,738 | 75.7% | 12,096 | 73.9% |
| Varnishes on condensation resins | 36,223 | 83.9% | 38,090 | 88.2% | 9,250 | 85.7% |
| Enamels on polymerization resins | 6,415 | 71.3% | 5,651 | 62.8% | 1,381 | 61.4% |
| Enamels on condensation resins | 4,836 | 53.7% | 4,577 | 50.9% | 864 | 38.4% |
| Production of solvents / curing agents | 1,310 | 48.0% | 1,576 | 57.7% | 460 | 67.4% |
| Water-dispersive materials | 562 | 18.3% | 844 | 27.5% | 140 | 37.3% |
| PVAD production | 391 | 9.8% | 396 | 9.9% | 175 | 73.6% |
| **Total** | **75,492** | **77.4%** | **82,100** | **79.5%** | **25,969** | **84.2%** |

Source: Data provided be the Company

A significant increase in the volume of produced PA (capacity of PA workshop) in 2017 and 1q 2018 is connected with termination of a large-scale investment project for the re-equipment of PA production in mid-2017 (for details see p. 32)

The decrease in the production of water-dispersion materials was caused by unfavorable weather conditions in March 2018, so that consumers of PWM postponed the terms of purchase for April 2018

A significant increase in utilization for the production of PVA dispersion and water-dispersion materials in 2018 was due to the revising the estimated production capacity of shop No. 6 at the end of 2017 (see page 33) because of interruptions in the workshop's operation set in the production program (before this the calculation was made based on the continuous work of the workshop). Reduction in the operation time of the PVAD production equipment was caused by a drop in demand explained by decrease in prices of competitors from RF

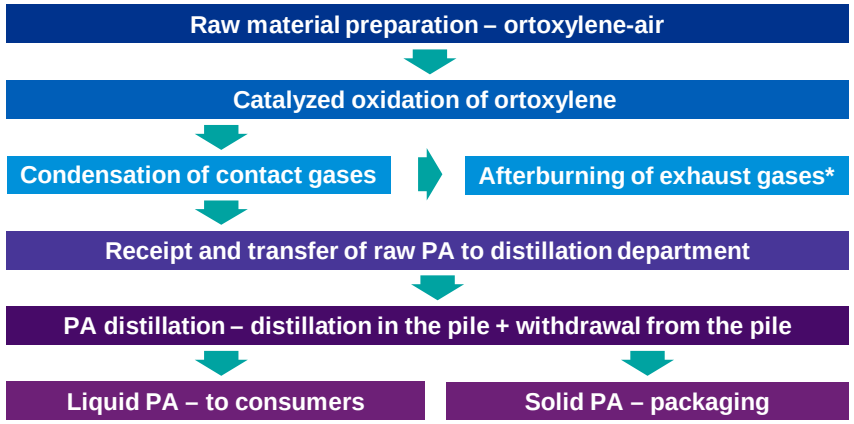
# Production process

## General information

Per management, the enterprise represents a set of technologies, basic and supplementary equipment and skilled personnel for the production of a wide range of modern paintwork materials of different purpose

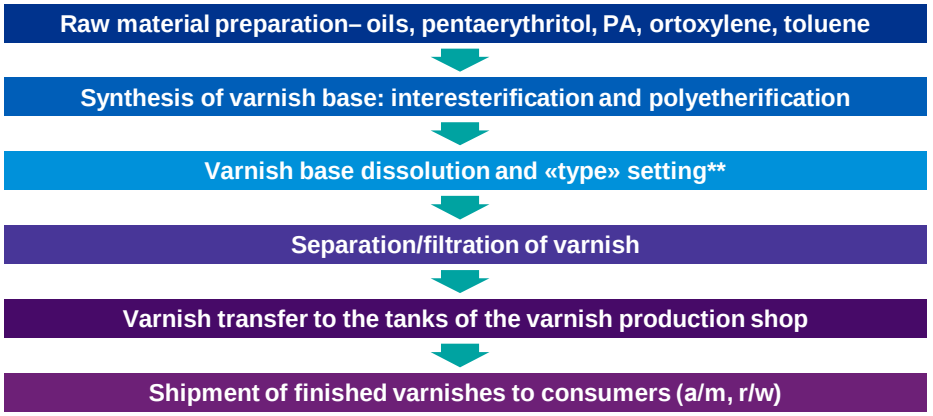
The main production includes 3 leading lines. Simplified process maps are presented on this page. More complete production schemes are presented in Appendix 2

### Phthalic anhydride production



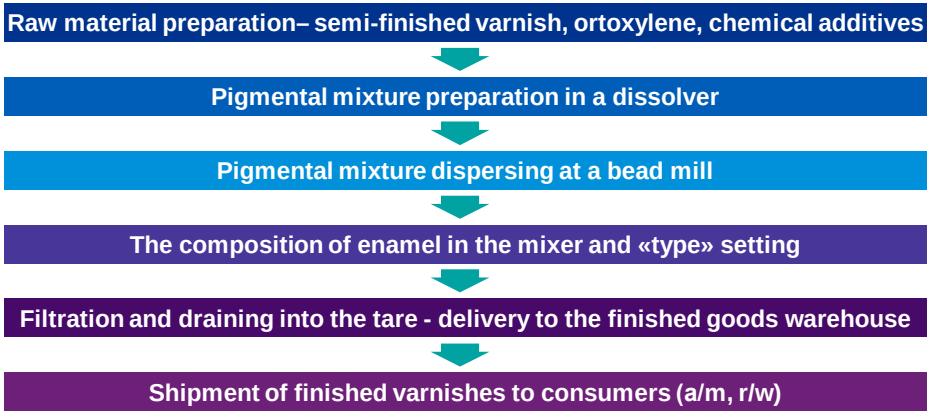

Note: * At the outlet of the catalytic afterburning of the exhaust gases carbon dioxide and water are obtained. In the process of the afterburning phthalic anhydride, maleic anhydride, citraconic anhydride, benzoic acid, phthalide, ortoxylene, etc. are liberated from the exhaust gases

### Production of varnishes (enamels) on condensation resins




Note: ** Varnish technical indicators adjustment in order to obtain a specific kind with certain characteristics

### Production of varnishes (enamels) on polymerization resins




Source: Data provided by the Company

# Production equipment (1/2)

### Phthalic anhydride production

PA is widely used in the manufacture of plasticizers, dyes, polyester and alkyd resins, in medicine and for the production of insecticides, as well as in other areas of the chemical industry. Company's PA production includes 2 lines:

**Line A –** a reactor, a condenser, distillation piles, a finished product collector - installed in 2017 (see p. 34)

**Line B** – equipment for the thread B was installed in **1976 г.**, technical modernization in 2009 resulted in replacement of a reactor, a condenser, a liquid raw PA collector, a finished product collector

Both lines use an accelerator produced by BASF company, Germany

### Production of enamels on polymerization resins

The production of enamels on polymerization resins is carried out on sealed bead mills and dissolvers, supplementary equipment is used as well:

- **Dissolvers:** volume of 0.4-3м³ – NETZSCH, Germany, NETZSCH Tula, Russia, chemical engineering plant, Hungary
- **Bead mills:** POLIMEX, Poland, engineering plant of Tisay chemical industrial complex, Hungary
- **Turbomill TM-50**: NETZSCH, Germany, 1998
- **Mixers:** volume of 5-8м³ **-** chemical engineering plant, Hungary
- **Multicolor machine:** DROMONT S.p.A., Italy
- **Industrial mixer:** Chameleon Colour Systems Limited
- **Weighting-and-packing machines:** IRCOM-EKT, Ukraine, 2017
- **Pumps:** Blagdon Pump, Great Britain, WILDEN Pump, Great Britain
- **Weight gauging-tanks:** volume of 1.25-2.25м³ – chemical engineering plant, Hungary
- **Storage tanks:** volume of 1-10м³ – chemical engineering plant, Hungary

Phthalic anhydride production

Production of enamels on polymerization resins

# Production equipment (2/2)

### Production of enamels on condensation resins

- **Dispersers PSI MIX**: NETZSCH, Germany, 2009
- **Dissolvers**: volume of 0.4-3м³ – NETZSCH, Germany
- **Bead mills**: NETZSCH, Germany, 1998
- **Turbomill TM-50**: NETZSCH, Germany, 1998
- **Intermediate mixers:** NETZSCH, Germany, 1996, OJSC «Grodno mechanical plant»
- **Mixers**: volume of 5-8м³ - chemical engineering plant, Hungary
- **Weighting-and-packing machines:** IRCOM-EKT, Ukraine, 2017 г.
- **Pumps**: Blagdon Pump, Great Britain, WILDEN Pump, Great Britain
- **Storage tanks**: volume of 1-10м³ – chemical engineering plant, Hungary
- **Weight gauging-tanks**: volume of 1.25-2.25м³ – chemical engineering plant, Hungary

### Production of varnishes on condensation resins

Synthesis of varnish base is carried out periodically by an azeotropic method. Key equipment:

- **Reactor:** volume of 6м³,13м³ – Heckmannverke, Germany, 1971
- **Mixers:** volume of 12м³, 25м³ – Heckmannverke, Germany, 1971
- **Separator:** GEA Westfalia, Germany, 2016
- **Sealed separators:** ОУВ-602-К-2 – Uralchimmash, Russia, 1971
- **Weight gauging-tanks:** Heckmannverke, Germany, 1971
- **Pumps:** Blagdon Pump, Great Britain, WILDEN Pump, Great Britain

### Production of water-dispersion materials

- **Dissolvers:** volume of 1.25-3м³ – NETZSCH, Germany, 2007
- **Bead mills:** POLIMEX, Poland, NETZSCH, Germany, 2007
- **Mixers** of different capacities and brands, **weight gauging-tanks**, 2003
- **Pumps**: Blagdon Pump, Great Britain, WILDEN Pump, Great Britain
- **Weighting-and-packing machines:** DEVREE Germany; Feige, Germany; Oliver y Batlle s.a., Spain

Production of enamels on condensation resins

Production of water-dispersion materials

Production of varnishes on condensation resins

# Condition of the production infrastructure

## Land plot

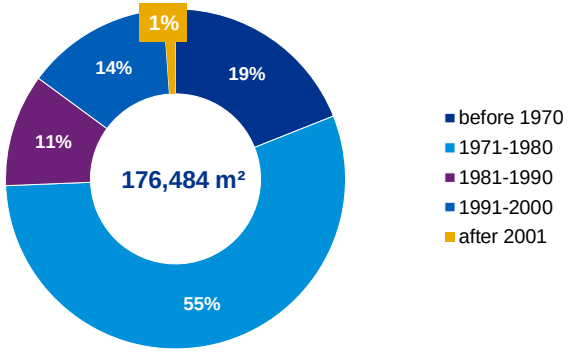
The Company's production area in Lida amounts to 51.3 hectares. In addition, the enterprise owns an administrative building, fire station and two parking lots, which occupy 1.4 hectares overall. The Company also leases another fire station (0.24 hectares) and a site on the Khimikhov str. (0.41 hectares) close to the production territory

## Buildings and construction

The real estate objects owned by the enterprise:
— Workshops – 10 objects with total area of 49,036 м²
— Auxiliary structures– 49 objects with total area of 41,672 м²
— Warehouses – 20 objects with total area of 30,757 м²
— Administrative buildings and structures – 7 objects with total area of 16,848 м²
— Specialized store – 192 м²
— Social facilities (health report, sport complex, dormitories) – 37,405 м²
— An apartment and a house (for the Company's management) – 574 м²
Information on the area of the other 64 supplementary objects was not provided

The breakdown of real estate objects by the year of construction is presented on the diagram below

**Aging structure of real estate**




Source: KPMG analysis based on the data provided by the Company

## Transport

The company has its own railways and about 40 r\w tanks commissioned in the 1990s (including 5 tanks-thermoses for liquid PA transportation). Leased locomotives are used for finished products delivery. In 2014 the Company's fleet was handed over to unitary enterprise "LakokrasServis"; 40 cars and forklifts for internal use were left in the ownership of OJSC Lakokraska

## Utilities

**Heat supply.** In 2016 the Company was connected to the city subdivision of state heating systems. However, in 2017 after the completion of the project for the modernization of FA production a significant amount of thermal energy started being generated at the plant. At present, the demand for thermal energy is completely covered by the heat from the production process

**Electricity.** Installed electrical capacity of the enterprise is about 6 MW. In 2016-1q 2018 all electrical energy was supplied by the "Belenergo" network. However, in the 3q 2018 the Company plans to commission its own power generating unit with a capacity of 2 MW on secondary energy resources from PA production, which will reduce the amount of energy purchased from "Belenergo"

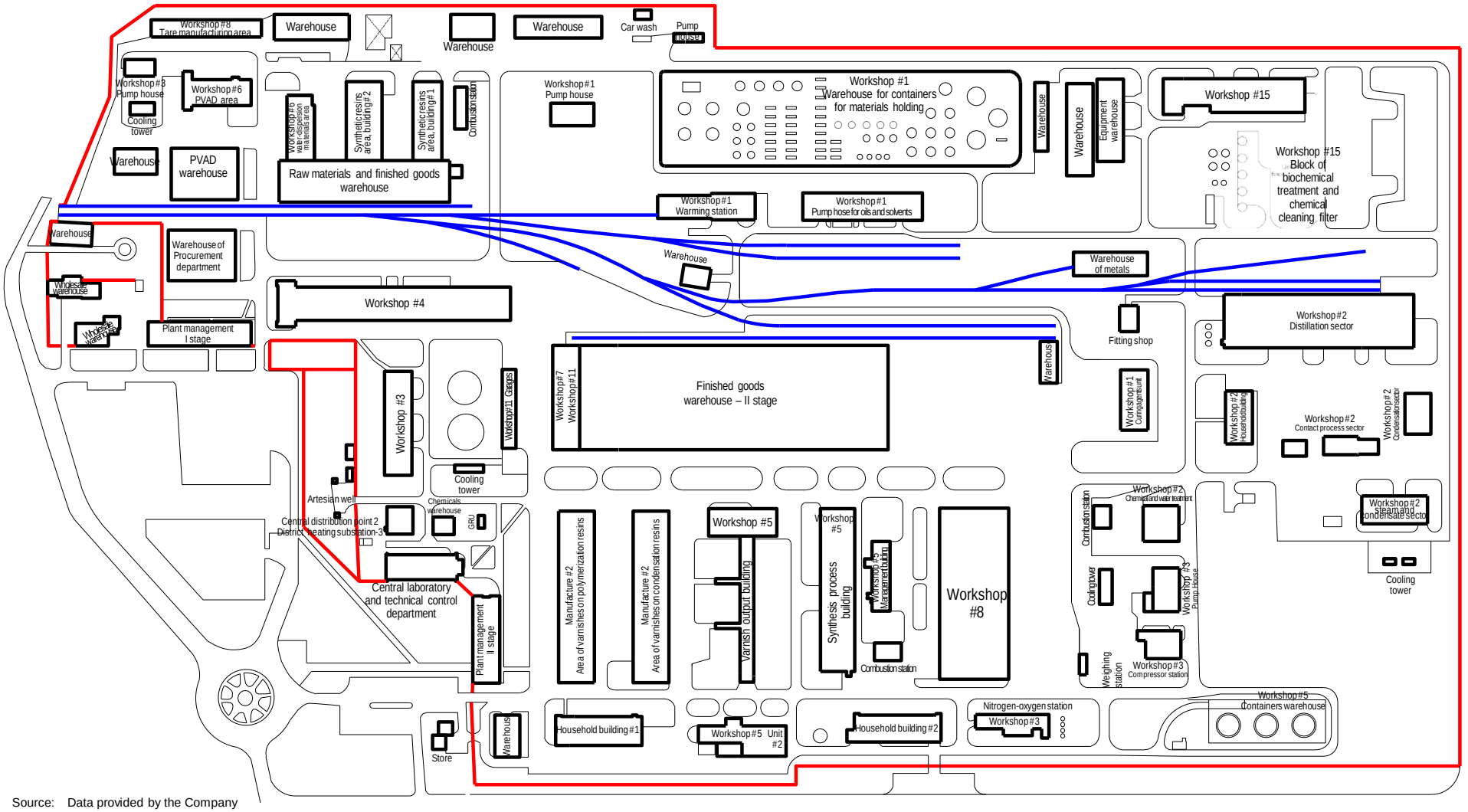
**Water supply.** The Company's need for drinking and technological water is covered partly by two artesian wells located on the territory of the enterprise, and partly by the city water supply network. The pumps of 75 m³/hour installed on the wells are used with a capacity of each

**Water discharge.** Discharge of normatively treated industrial and household wastewater is carried out through the urban sesalary system

**Gas supply.** The Company is supplied with the gas by the state gas network. Gas at the enterprise is used for afterburning of exhaust gases and waste disposal

Per management, at present the engineering networks of water, heat and power supply have fulfilled their normative service life and require replacement

# Company scheme (1/2)




Source: Data provided by the Company

# Company scheme (2/2)

| Buildings and constructions | |
|---|---|
| Workshop #1 | Materials handling, manufacturing of organic solvents and curing workshop |
| Workshop #2 | Phthalic anhydrid manufacturing workshop |
| Workshop #3 | Power workshop |
| Workshop #4 | Mechanical and repair workshop |
| Workshop #5 | condensing resin paint manufacturing workshop |
| Workshop #6 | PVA dispersions and water dispersions manufacturing workshop |
| Workshop #7 | Control and measuring instruments and automatic equipment workshop |
| Workshop #8 | Workshop of manufacturing, repair and treatment of containers |
| Workshop #11 | Transport department |
| Workshop #15 | Wastewater treatment workshop |

Source: Data provided by the Company

# Investment program

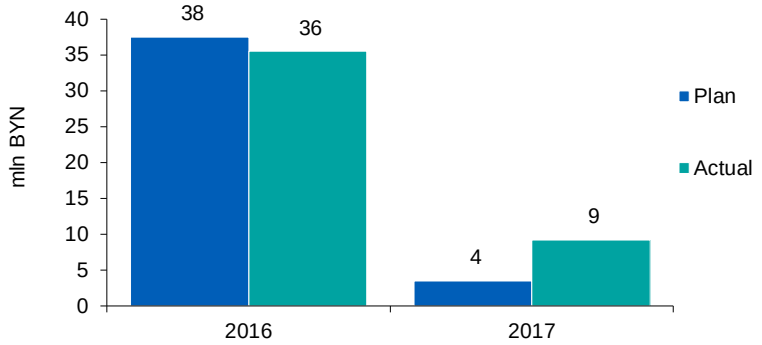
The Company's Investment Program is determined by the SB. Implementation of the Investment Program in 2016-2017 is presented in the diagram on the right

The financing structure of the investment activities in 2016 and 2017 comprised 5.7 mln BYN and 6 mln BYN respectively of funds of Belneftekhim organizations financial support special fund; 23.1 mln BYN and 2.2 mln BYN were loans under FCL

In 2016 a significant amount of funds was invested in the implementation of large-scale project "Technical re-equipment of phthalic anhydride production", which was completed in July 2017. The overfulfillment of the planned investments in 2017 was due to the rescheduling of the project for the later terms. The total cost of the project was 58.3 mln euro. It will allow the Company to increase PA production by 27 thousand tons per year

In 2018 due to the high indebtedness of the enterprise and the lack of own working capital for the implementation of large investment projects, the Company plans small projects that will be aimed at reducing of production costs (see the scale below)

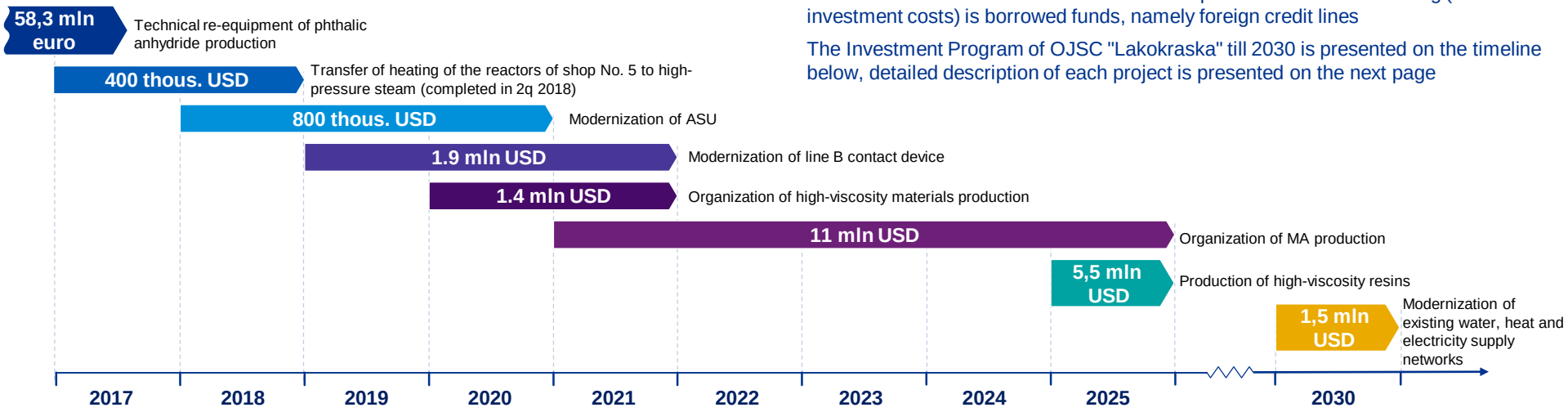
**Implementation of Investment Program**




Source: KPMG analysis based on data provided by the Company

According to the Investment Program up to 2030 the Company planned 22,1 mln USD of investment costs for 2018-2030. The main planned source of financing (85% of investment costs) is borrowed funds, namely foreign credit lines

The Investment Program of OJSC "Lakokraska" till 2030 is presented on the timeline below, detailed description of each project is presented on the next page




Source: Report «Investment activities of OJSC «Lakokraska» for 2018-2030»

# Investment program

### Modernization of air separation unit (nitrogen unit)

Within this project the Company plans to purchase an energy-efficient ASU with an increase in the capacity of nitrogen production from 605 to 800 m³/ h. The project will allow to reduce the operating costs and reduce the cost of nitrogen from 145 USD to 75 USD per 1000 m³

At the moment the design documentation has been prepared. Preparation of design and estimates documentation is scheduled for 2018. The planned investment costs at this stage are 200 thd BYN

### Modernization of line B contact device with installation of 0.8 MW turbine

The implementation of this project includes the replacement of he steam generator with a 2.4 MPa output pressure for a 5 MPa steam generator. For steam processing it is planned to install a steam turbine with a 2.4 MPa back-pressure of and a 0.8 MW capacity

The modernization of the device will provide an increase in reactor capacity up to 2%, that will allow to increase the production up to 600 tons of phthalic anhydride per year

### Organization of high-viscosity materials and resins production

The implementation of these projects includes purchase of laboratory equipment for the development of new types of high-viscosity paint and resins

### Organization of maleic anhydride production

The aim of the project is to organize the maleic anhydride production which is produced as a side-product in the PA production. Settlements for the project have already been made, but now are being reviewed due to the changing situation on the market

We draw your attention that according to the comments of the Company's technical specialists the technology of the PA production is being upgraded each 4-5 years, which results in the decrease exhaust gases used as a raw material for MA production. This fact makes the project feasibility questionable. In addition, Sibur Tobolsk company (Russia) plans to construct the MA production site of 40 thd ton/year capacity. In this regard the potential market may already be occupied by the time the project is implemented

### Modernization of existing water, heat and electricity supply networks

The project provides for a phased replacement of all engineering networks, that will allow to avoid emergencies and to use energy resources rationally, and to avoid losses on obsolete networks

# Innovation program

## R&D

Total R&D expenditures in 2017 amounted to 24.8 thd BYN

The Company's business plan for 2018 includes the following areas of research and development:

1. Development of formulation and technology of the solventborne film-formers production for pigmented PWM
2. Development of formulation and technology of the corrosion-resistant solventborne PWM with enhanced protection effect

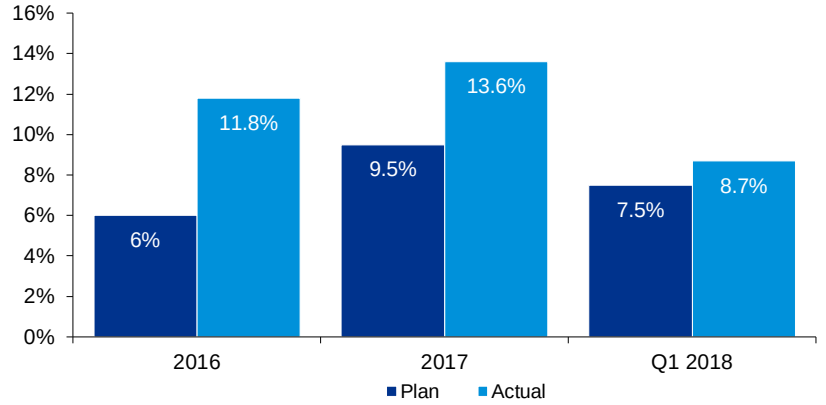
Works are to be financed partly at Company's own expense - 143.5 thd BYN, partly at the expense of republican centralized innovation fund - 150 thd BYN. Expected economic effect during 3 years after the R&D works completion – 453.5 thd BYN

## Innovative products

The list of innovative products includes new products not having analogues in the Republic of Belarus, produced by OJSC Lakokraska and supplied to the consumer within three years from the first party. The list was developed in accordance with industry-based recommendations of the Belneftekhim concern on the calculation of innovative products share

The share of innovative volume in the total amount is presented on the graph below. The planned share is dictated by the Belneftekhim concern on an annual basis as a measure of stimulation of the innovative products production

**Innovative products share**




Source: KPMG analysis based on the data provided by the Company

Share decrease of innovative products in the total volume in 1q 2018 is connected with the increase in PA production and sales in relation to the completion of the investment project "Technical re-equipment of phthalic anhydride production" (see p. 34)

In 2018 the Company plans to sell 9.8 thd tons of the innovative products for 16 mln BYN. The share of innovative products is planned at the level of 8.8%

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# Quality and environmental management systems

# Quality management (1/2)

## Quality management system

The Company's quality management system is certified under the STB ISO 9001-2009 (see the next page). The conformity certificate extends to the QMS for development, production and supply of:

— Paint materials
— PA
— PVAD
— Synthetic resigns etc.

Efficiency and effectiveness of quality management system are permanently being analyzed by the company management through internal audit

The main document regulating the QMS processes is the Quality Manual. The Manual is developed in accordance with the requirements of STB ISO 9001-2015

The concern Belneftekhim developed an action plan for 2016-2020 including a set of measures to promote the advanced techniques and modern international quality management systems in the country's economy. Detailed information on the planned activities of OJSC Lakokraska for 2018 is presented on the right

**The plan of activities to promote introduction of modern QMS for 2018**

| | Costs, BYN | |
|---|---|---|
| **Activity** | **Plan** | **6m Fact** |
| **Improvement of products' safety and quality through technical norms setting and standardization** | | |
| Participation in drafting and review of inter and state standards | 390 | - |
| Application of the requirements of interstate standards and testing methods in the product development and production | 4,450 | 5,420 |
| Expansion of the accreditation field for the determination of indicators for compliance with STB ISO / IEC 17025 | 7 200 | - |
| **Introduction of standardized quality techniques, effective management and best international practices** | | |
| Creation and certification of effective QMS and EMS | 7,900 | 3 510 |
| Conducting internal audits in accordance with the "Internal Audit Plan for 2018" and external audit to confirm QMS compliance with STB 18001-2009 requirements | 1,450 | 1,450 |
| Introduction of subsections "1C: Production enterprise management" on the basis of "1C: Enterprise 8.3" | 8,000 | - |
| **Competence in quality and effective management** | | |
| Employees' training on the QMS | 2,150 | 2,540 |
| Participation in conferences, symposia, round tables, exhibitions | - | - |
| **Total** | **31,540** | **12,920** |

Source: Data, provided by the Company

Legend:

Completed, costs are above or equal to the plan

Partially completed

# Quality management (2/2)

## Products quality

The following bodies of the Company are accredited for technical competence:

— Testing center (on the base of quality control department and the PA workshop laboratory); the certificate is valid from 27 August, 2015 to 27 August, 2020

— The environmental testing laboratory for paint materials; the certificate is valid from 20 April, 2017 to 20 February, 2022

The incoming raw materials are subject to input control in the QCD laboratory of raw materials for compliance with the requirements of the technological regulations and contracts

Quality control of the products is carried out by the workshop personnel and the QCD laboratories. Each consignment is checked for compliance with the requirements of technical regulatory legal acts and is confirmed by the results of products' tests. There are both interstate standards and technical regulations developed by the company's specialists

Each tested consignment gets the approval certificate from the finished product laboratory

Per management, the company did not receive any claims from consumers on the products quality in 2016-2017

The enterprise conducts tests of the quality of competitive products. Specialists of the Marketing Department transfer the samples of competitive products to QCD indicating the analogues produced by the company. The test results are recorded in the protocol

Comparing the products of the company and its competitors, you should take into account that each producer may have different requirements for the same product, as producers develop their own specifications in addition to generally established standards

НАЦИОНАЛЬНАЯ СИСТЕМА ПОДТВЕРЖДЕНИЯ СООТВЕТСТВИЯ РЕСПУБЛИКИ БЕЛАРУСЬ
Аккредитованный орган по сертификации систем менеджмента
Научно-производственное республиканское унитарное предприятие
«Белорусский государственный институт стандартизации и сертификации» (БелГИСС)
Республика Беларусь, 220113, г. Минск, ул. Мележа, 3, к. 406, т. 262-15-19
(аттестат аккредитации № BY/112 002.01, дата регистрации 12.10.1996 г.)

СЕРТИФИКАТ СООТВЕТСТВИЯ

ISO 9001

Зарегистрирован в Реестре № BY/112 05.01. 002 00066

| | |
|---|---|
| Дата регистрации | 24 января 2001 г. |
| Дата подтверждения | 14 декабря 2015 г. |
| Действителен до | 14 декабря 2018 г. |

Настоящий сертификат выдан

Открытому акционерному обществу
«Лакокраска» г. Лида
(УНП 500021625)

Республика Беларусь, 231300,
г. Лида, ул. Игнатова, 71

и удостоверяет, что система менеджмента качества применительно к

разработке и производству лакокрасочных материалов, синтетических смол, средств стеклоомывающих автомобильных и жидкостей охлаждающих низкозамерзающих; производству фталевого ангидрида, поливинилацетатной дисперсии

соответствует требованиям СТБ ISO 9001-2009

Руководитель аккредитованного органа по сертификации — И.И. Осмола

№ 0058549

# Product quality comparative analysis (1/2)

## Phthalic anhydride

The table below provides a comparative analysis of the company's PA quality, ACROS ORGANICS (Italy), the leading manufacturer of organic chemicals and BASF (Germany), one of the largest producers of PA in Europe

According to the comparative tests conducted in 2017, the analysis of BASF samples was carried out in the laboratory of BASF, samples of the products ACROS ORGANICS - in the workshop laboratory of the Company

According to the findings of the JSC Lakokraska QCD, the PA sample:

- of ACROS ORGANICS is inferior to the Company's sample in terms of the mass fraction of PA, content of phthalic acid, color of melted product, color of melted product after heating at 250℃, the crystallization temperature, however, it contains a lesser amount the mass fraction of maleic anhydride
- of BASF does not differ from the Company's PA. The deviations of the indicators are within margin of error in the components determining methodology

**Results of phthalic anhydride testing**

| Indicator | The norm for brand A, extra class TU BY 500021625.155-2009 | The PA sample of Lakokraska (workshop laboratory) | The PA sample of Lakokraska (BASF laboratory ) | The PA sample of BASF (BASF laboratory ) | The PA sample of ACROS ORGANICS (workshop laboratory) |
|---|---|---|---|---|---|
| Appearance | white flakes, powder or melt | Complies | - | - | Yellow Flakes |
| Mass fraction of phthalic anhydride,%, not less than | 99,90 | 99,90 | 99,99 | 99,99 | 99,34 |
| Crystallization temperature, ℃, not lower than | 130,90 | 130,90 | 130,90 | 131 | 130,30 |
| Phthalic acid content,% | none | none | 0,04 | 0,03-0,04 | 0,71 |
| Mass fraction of maleic anhydride,%, not more than | 0,05 | 0,05 | 0,00 | 0,00 | 0,02 |
| Color of melted product produced, Hazen units, not more than | 15 | 15 | 5-10 | 5 | 20-30 |
| Color of melted product after heating at 250℃ for 90 minutes, Hazen unit, not more than | 40 | 40 | 20 | 10 | 60 |

Source: Data provided be the Company

# Product quality comparative analysis (2/2)

## Enamel PF-115

The table below provides a quality comparative analysis of enamel PF-115 produced by the company and by several Russian producers. The analysis was conducted by the company in 2017

Taking into account the comparison of indicators it can be noticed that, the actual competitors' indices vary from 33 to 70 micrometers, while norm of a grinding degree is 25 micrometers. The following results can be noticed with grinding degree growth:

- the sedimentation resistance decreases (resistance against settling of particles under the action of gravity)
- the coating shine lowers
- covering ability increases, which leads to an increase in material consumption

Increased mass fractions of non-volatile substances with high covering ability indicate a low content of pigments and a large number of fillers in the enamels formulation

Painting the same surface area with the Company's enamel will require 3 times lower volume than KraskaVo LLC, and twice less than Colorika by Smolensk LKZ

The quality monitoring of enamels PF-115 showed the stability of Lakokraska enamels during the storage and allowed to increase the warranty period to 24 months (according to GOST 6465-76 it was 12 months)

**The results of enamel PF-115 testing**

| | Norm | Fact | | | |
|---|---|---|---|---|---|
| **The name of the indicator** | **GOST 6465-76 "Enamel PF-115"** | **Red LiDA, JSC Lakokraska GOST 6465** | **Red, KraskaVo LLC, GOST 6465-76** | **Red Colorika, Smolensky LKZ GOST 6465-76** | **Red Lakra, Lakra Sintez LLC, GOST 6465-76** |
| 1. Viscosity by B3-246 viscometer having 4 mm nozzle diameter at temperature (20,0 ± 0,5) ℃, s | 60-100 | 90 | 113 | 155 | 99 |
| 2. Mass fraction of nonvolatile substances,% | 52-58 | 55,6 | 81,81 | 67,6 | 67 |
| 3. Grinding degree, micrometer | Not above 25 | 25 | 70 | 35 | 33 |
| 4. Covering ability of the dried coating, g/m2 | Not above 120 | 102 | 290 | 220 | 119 |
| 5. Drying time to degree 3 at temperature (20 ± 2) ℃, h | Not above 48 | 18 | 24 | 26 | 20 |
| 6. Hardness of the coating on a TML pendulum instrument (pendulum A), rel. units | Not less than 0,10 | 0,26 | 0,08 | 0,28 | 0,16 |
| 7. Coating shine by FB-2 photoelectric glosu5smeter,% | Not less than 50 | 52 | 40 | 59 | 65 |

- Quality indicators by which the company is superior to its competitors

Source: Data provided be the Company

# Ecological policy

OJSC Lakokraska has a number of licenses and certificates:

— The license to carry out activities related to environmental impact (in terms of neutralizing production waste), - until 26 April 2020

— Integrated environmental permit - from 3 January 2017 to 2 January 2022

— National Certificate of the environmental management system compliance with the requirements of STB ISO 14001-2005 - until 2 June 2019

— International Certificate of compliance with ISO 14001: 2004 - until 14.09.2018 (shown on the right) and other

On 1 July 2017 the state standard STB ISO 14001:2017 "Environmental management systems. Requirements for guidance and application" was put into effect and replaced the 2005 version. Thus, until 14 September 2018 the Company must switch to STB ISO 14001-2017, since the old version of the standard will be invalid. The Company's Environmental Protection Department is currently working on the transition to a new standard. In May 2018 the first stage of certification was passed, the second stage will be carried out in August 2018

Annually the enterprise represents statistical reporting to the government bodies on:

— The waste products management

— Emissions of pollutants and carbon dioxide into the atmosphere

— Handling polychlorinated biphenyls

— Handling ozone-depleting substances

— The water use

The Company annually performs a number of environmental protection measures, which are included into the "Program for natural resources rational use and environmental protection in the organizations of the Belneftekhim concern for 2016-2020"

The total sum spent on environmental protection measures in 2017 amounted to BYN97.8 thousand. In 2016 this amount was BYN49.1 thousand. A significant difference is explained by the costs of developing and implementing a project for the sludge dewatering technology in one of the workshops in 2017


BUREAU VERITAS
Certification

ОАО «Лакокраска», г. Лида

Bureau Veritas Certification Holding SAS – UK Branch удостоверяет, что Система Менеджмента вышеупомянутой организации проверена и признана соответствующей требованиям стандарта, указанного ниже

ISO 14001:2004

Область сертификации

Проектирование, разработка и производство лакокрасочных материалов, синтетических смол, средств стеклоомывающих автомобильных и жидкостей охлаждающих низкозамерзающих; производство фталевого ангидрида, поливинилацетатной дисперсии.

Дата начала сертификационного цикла: 16 марта 2016

При условии постоянного успешного функционирования Системы Менеджмента организации, окончание действия сертификата: 14 сентября 2018

Начальная дата сертификации: 21 апреля 2004

Сертификат №: BY225860Q-U

Версия N 1 Дата ревизии: 16 марта 2016

Подписано от имени BVCH SAS UK Branch

UKAS

008


НАЦИОНАЛЬНАЯ СИСТЕМА ПОДТВЕРЖДЕНИЯ СООТВЕТСТВИЯ РЕСПУБЛИКИ БЕЛАРУСЬ

СЕРТИФИКАТ СООТВЕТСТВИЯ

Зарегистрирован в реестре № BY/112 06.01. 021 00008

Дата регистрации 24 ноября 2006г.
Дата подтверждения 02 июня 2016г.
Действителен до 02 июня 2019г.

Настоящий сертификат соответствия выдан
Открытому акционерному обществу
«Лакокраска»
(УНП 500021625)
Республика Беларусь, 231300,
Гродненская область, г. Лида, ул. Ильинова, 71

и удостоверяет, что система управления окружающей средой применительно к проектированию, разработке и производству лакокрасочных материалов, синтетических смол, средств стеклоомывающих автомобильных и жидкостей охлаждающих низкозамерзающих; производству фталевого ангидрида, поливинилацетатной дисперсии

соответствует требованиям СТБ ИСО 14001-2005

Руководитель аккредитованного органа по сертификации М.П. Глуховский

№ 0014140

The Company has a Department of Environmental Protection and Industrial Sanitation, which is accredited in the National Accreditation System of the Republic of Belarus for compliance with the requirements of STB ISO / IEC 17025. The department includes two laboratories: air control and waste water control

The production waste generated at the enterprise is re-engaged in the technological cycle, transferred to other organizations for further use, and the remaining part is sent for processing and disposal

In 2016-2017 no overlimits on pollutants and industrial waste disposal were detected by controlling bodies

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# Appendices

1. Sources of information
2. Production scheme

## Appendix 1

# Sources of information

**Open Sources:**

— National Statistical Committee of the Republic of Belarus (http://www.belstat.gov.by/)

— Paints & Coatings Market, Markets&Markets (https://www.marketsandmarkets.com/)

— World's Top ten Paints Companies 2017 Annual Report, World Paintings and Coatings Industries Association (http://www.wpcia.org/)

— Paint materials world market review, Russian coatings journal “Paintwork materials and their use”, January-February 2018

— Phthalic anhydride: World market overview 2018 and assessment till 2027 г., Market Publishers (https://marketpublishers.ru/)

— Global Phthalic Anhydride Market 2017-2021, Research&Markets (https://www.researchandmarkets.com/)

— The Company’s web-site (http://lidalkm.by/)

— The book dedicated to the 50th anniversary of OJSC Lakokraska (“50 Bright Years”)

**Data provided be the Company:**

— Business and production description

— Financial statements with notes

— Business plans and development strategies prepared by the Company’s management under Belarusian governmental bodies requirements

— The report “Sales market analysis. Marketing strategy” prepared by the Company’s Marketing Department, 2017

— Information gained during the interviews with the company’s management

— Quality Manual

**The data not provided as confidential:**

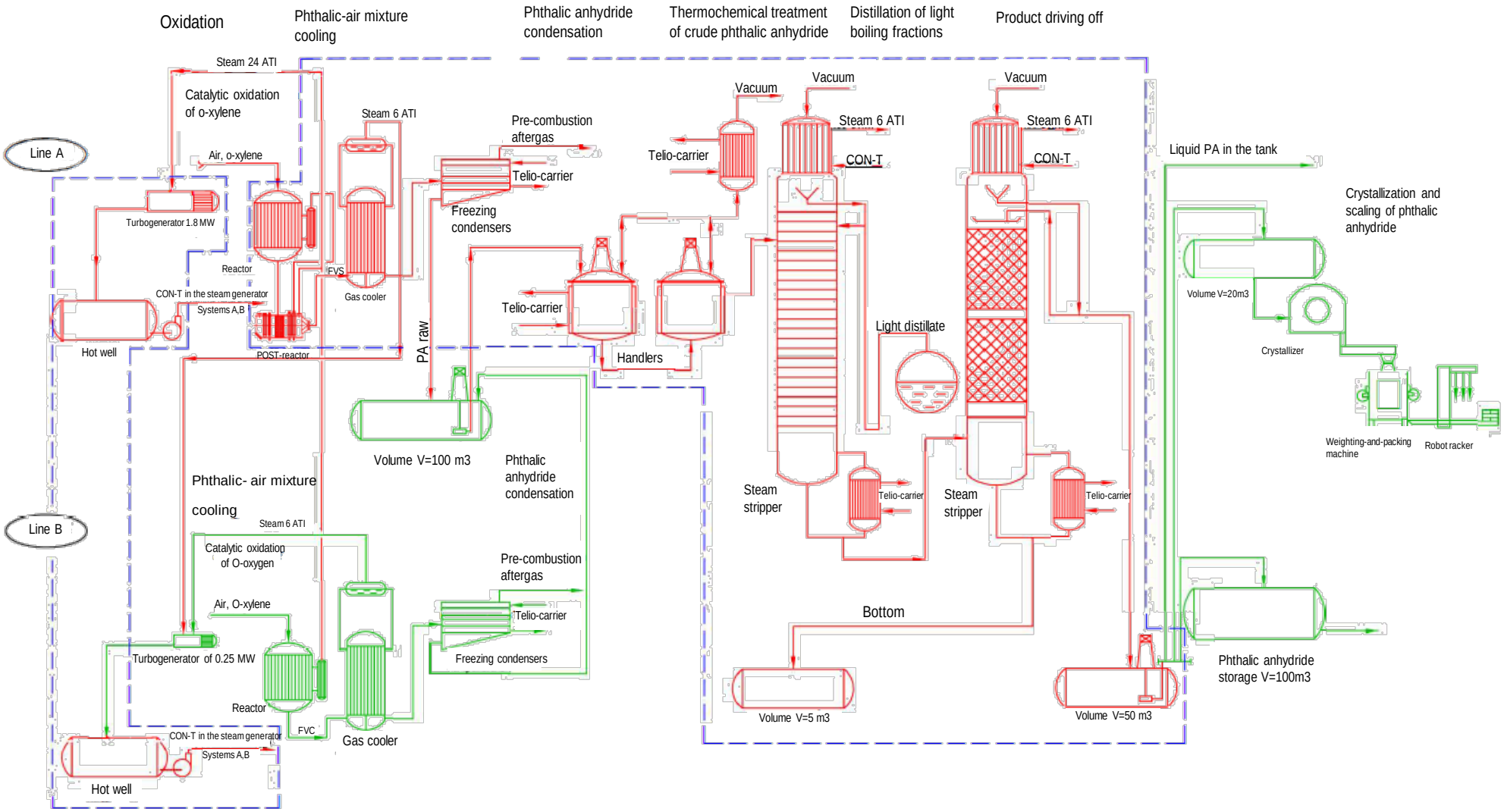
— Report on quality management system results

— Contracts for utilities

— EMS audit reports

## Appendix 2

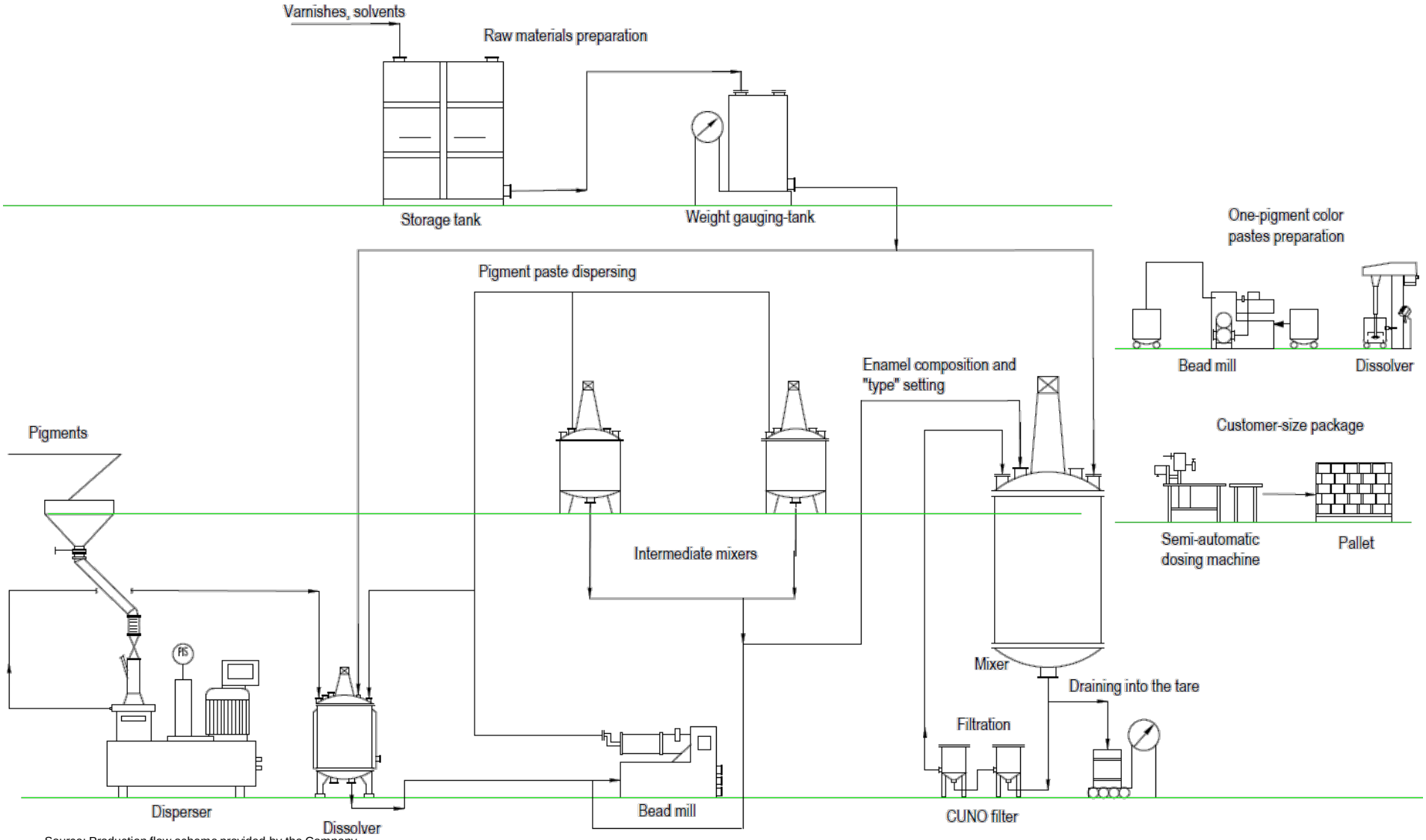
# The production scheme - Phthalic anhydride




Source: Production flow scheme provided by the Company

**Appendix 2**

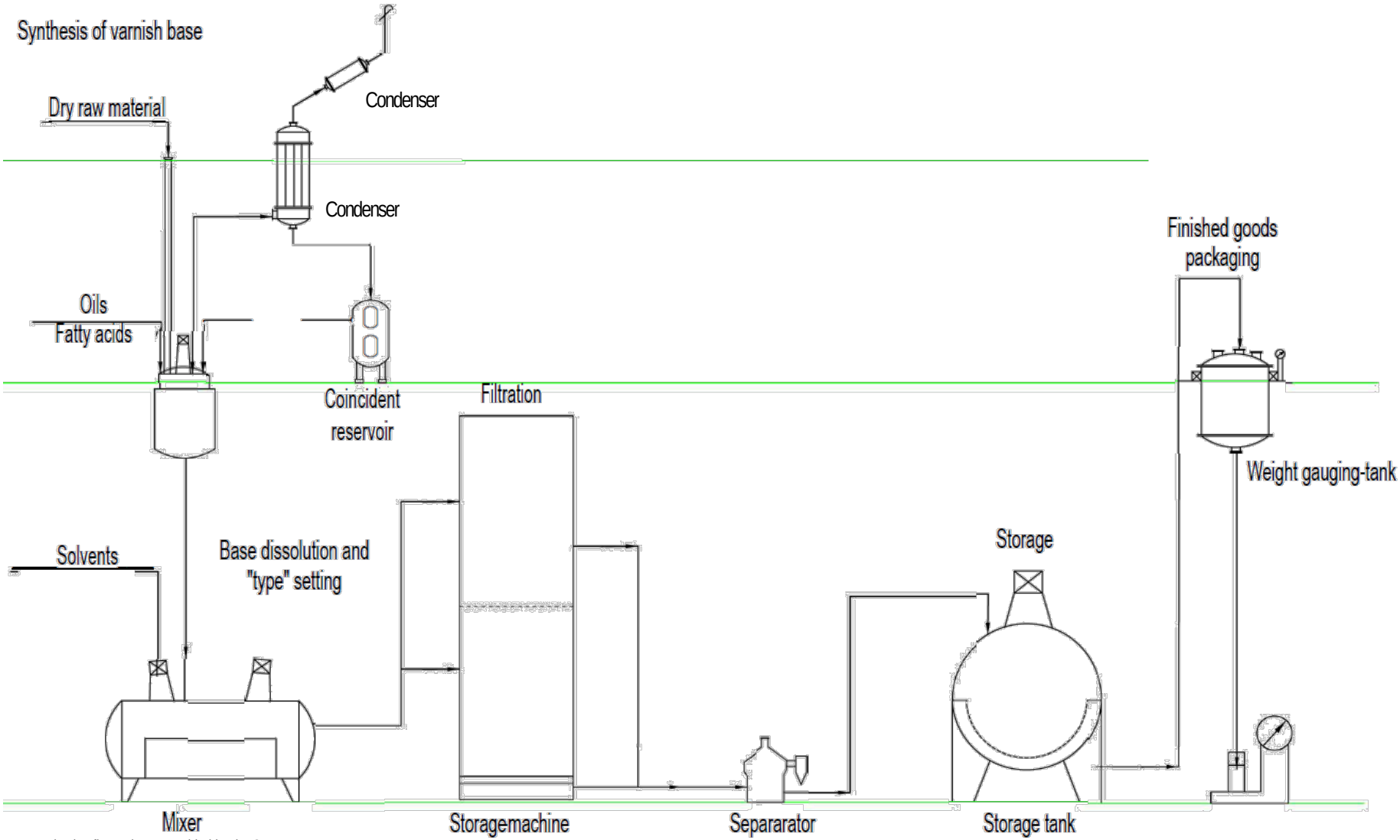
# The production scheme - Enamels on condensation resins




Source: Production flow scheme provided by the Company

**Appendix 2**

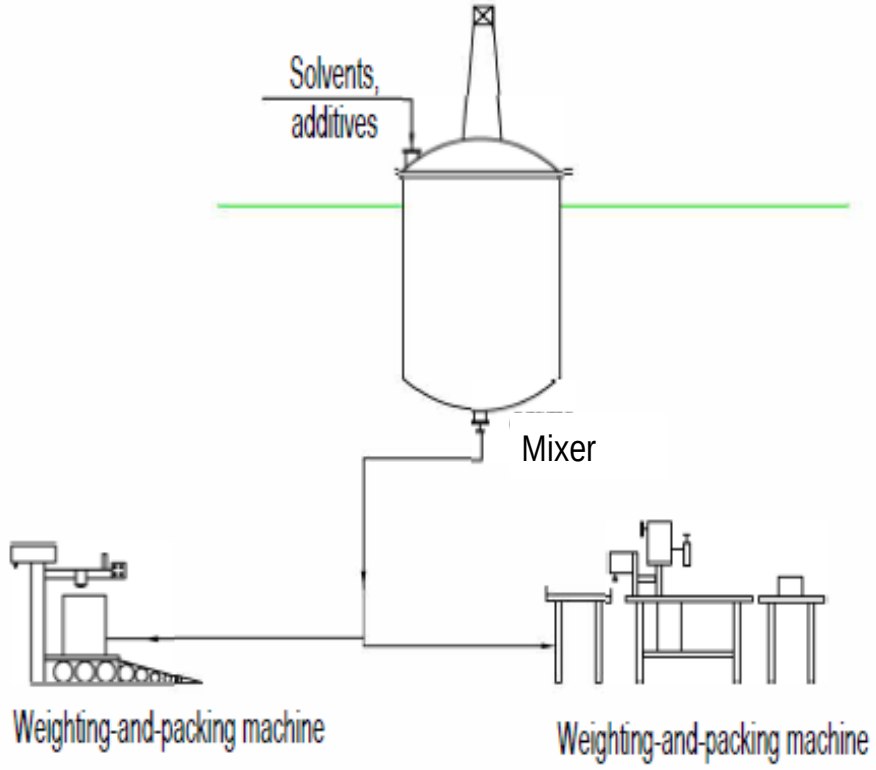
# The production scheme - Vanishes on condensation resins




Source: Production flow scheme provided by the Company

**Appendix 2**

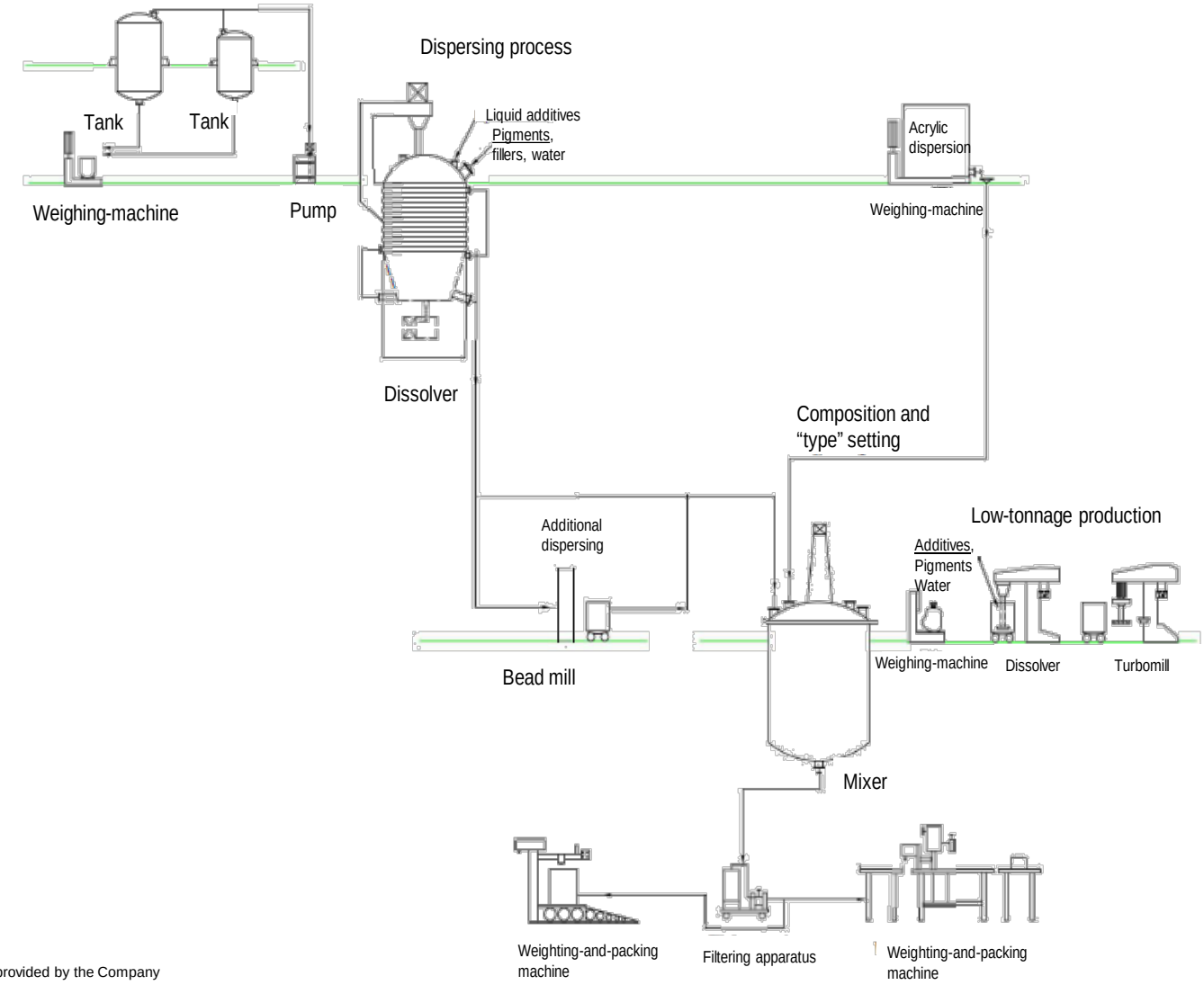
# The production scheme - Solvents and curing agents




Source: Production flow scheme provided by the Company

**Appendix 2**

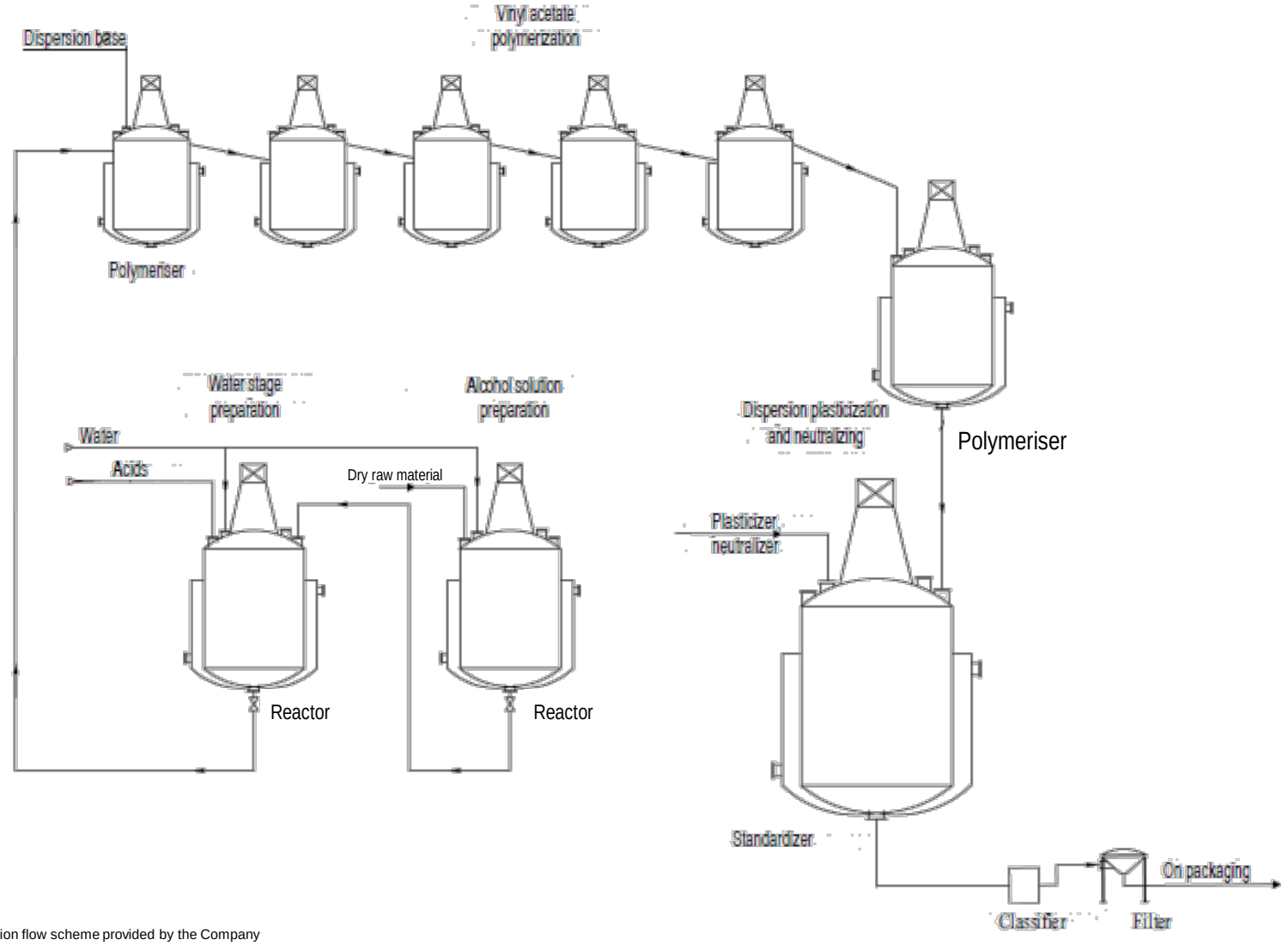
# The production scheme - Water dispersion materials




Source: Production flow scheme provided by the Company

**Appendix 2**

# The production scheme - PVA dispersion




Source: Production flow scheme provided by the Company

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**kpmg.com/app**