The organic pigments landscape:
challenges for producers like Clariant and BASF

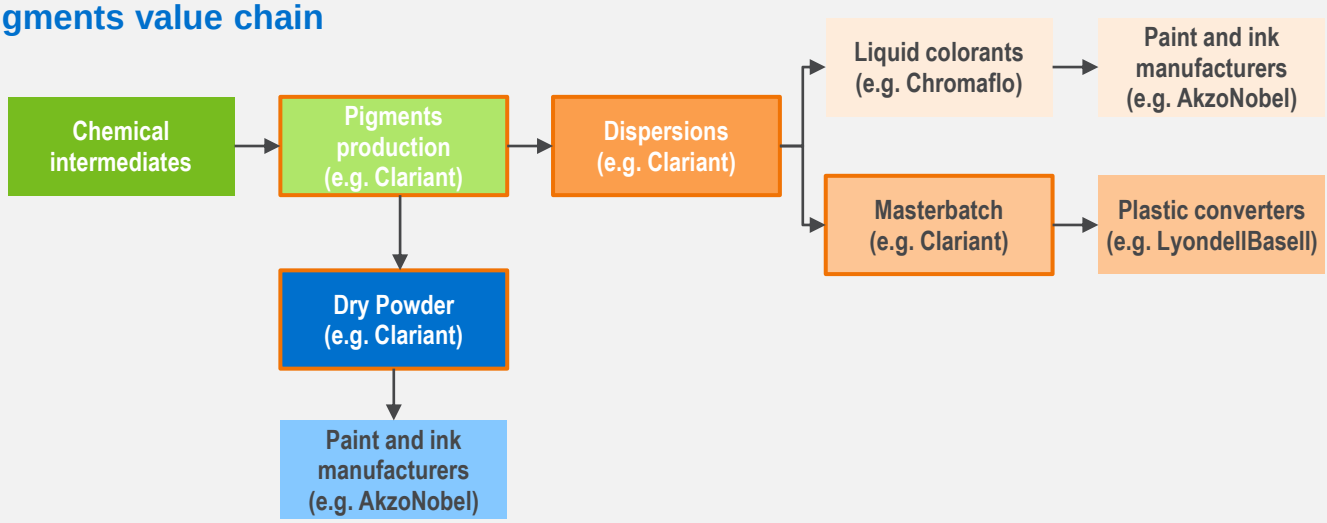
The pigments industry is seeing another brush of restructuring – Clariant and BASF have both announced that they are divesting their pigments businesses this year. When thinking about the best strategic course for a buyer of either business, a look at the challenges posed from the wider industry landscape is critical. Key questions are whether EBITDA margins are sustainable and how much can they be improved?

PIGMENTS

- Pigments are defined as colouring agents that are practically insoluble in the application medium, whereas dyes are colouring agents that are soluble in the application medium.
- Inorganic pigments are chemical compounds not based on carbon and are usually metallic salts precipitated from solutions or calcined at high temperatures.
- Organic pigments are derived from synthetic carbon chemistry. However, they can also contain metallic (inorganic) elements that help stabilize the properties of the organic components.
- The different pigment types vary in market applications reflecting their cost and performance properties – this has implications on growth rates.

Overall the organic pigment industry consists of a handful of large multi-national companies (e.g. Clariant and BASF) with revenues >$1 billion and which offer a wide portfolio of colours for various applications. The next tier of producers comprises the medium sized players (of around $100-$500 million in revenue) e.g. Heubach in Germany, Union Colours, Lily Group in China and Sudarshan in India. The medium-sized Asian players typically have “me-too offerings” in their portfolio to compete with the market leaders. Then there are small companies with revenues typically < $10 million which are focused on specific pigment chemistries.

Pigments value chain



Pigments are largely sold as dry powder (e.g., approximately 70% of Clariant sales volumes) – these pigments are then formulated as dispersions with other additives

- Coatings (in the form of paints and inks) are the largest market for colour pigments, representing more than half of demand.
- Other applications depend on the type of pigment but include higher volume concrete, ceramics and other building materials, plastics as well as lower volume but higher value cosmetics and other high-purity applications.

Global pigments producers also develop their own formulations (masterbatches and liquid colourants etc.) to market directly to coatings producers and polymer converters

- Dispersions are semi-prepared products that provide system and / or logistics efficiencies in the supply chain.

Growth of pigments is driven by its use in printing inks, paints and plastics

Pigment type	Main applications						Global demand outlook (vs. GDP)
	Architectural paints	Industrial coatings	Automotive coatings	Plastics	Inks	Other	
INORGANICS							
TiO_2	■■■	■	■	■■	■	■ Personal care	→
Carbon black	■	■	■	■	■	■■■ Rubber tyres	→
Iron oxides	■■	■■	■	■	■	■ Cosmetics ■■■ Concrete	→
Zinc oxides	■	■	■	■	■	■ Personal care	→
Ultramarine	■	■		■	■	■ Cosmetics	→
Mixed metal oxides	■	■■	■	■■		■■■ Ceramics	→
ORGANIC							
Azo pigments	■■	■	■	■■	■■■	■	→
Polycyclic pigments	■■	■■	■■	■■	■■	■	↗
SPECIAL EFFECT PIGMENTS							
Effect pigments (pearlescent etc.)	■	■■	■■■	■■	■	■■■ Cosmetics	↗
Functional pigments (e.g. anti-corrosion)	■	■■■	■	■	■	■ Electronics	↗

Clariant is mostly focused on organic and specialty pigments and has recently carved-out this division into a separate entity. The business is mainly oriented to organic pigments with a relatively strong position in the architectural coatings segment. BASF has a large portfolio of organic and specialty pigments, with particular strength in automotive coatings. Coatings (in the form of paints and inks) are the largest market for colour pigments, representing more than half of demand.

Clariant and BASF are each quite different pigments companies – based on pigment portfolio and end-market focus. Both are global, leading and well-established pigment producers and are focused on organic pigments and dispersions for all major end-markets e.g. inks, coatings and polymers. However the BASF portfolio also brings with it a palate of complex inorganic coloured pigments (CCIPS) and pearlescent pigments(1) which were acquired from its Engelhard acquisition back in 2006. From its acquisition of Ciba in 2009, BASF also acquired a larger portfolio of organic pigments. The end-market focus of both businesses also varies due to inter-company relationships. Clariant Pigments has a strong offering in polymers due its masterbatch business while BASF is more focused on coatings (particularly automotive coatings) where it is also active.

(1) Pearlescent pigments are semi-transparent and allow some light to pass through their surface and absorb and scatter light as well. The main applications are paints, inks, plastics and cosmetics.

Pigments market structure

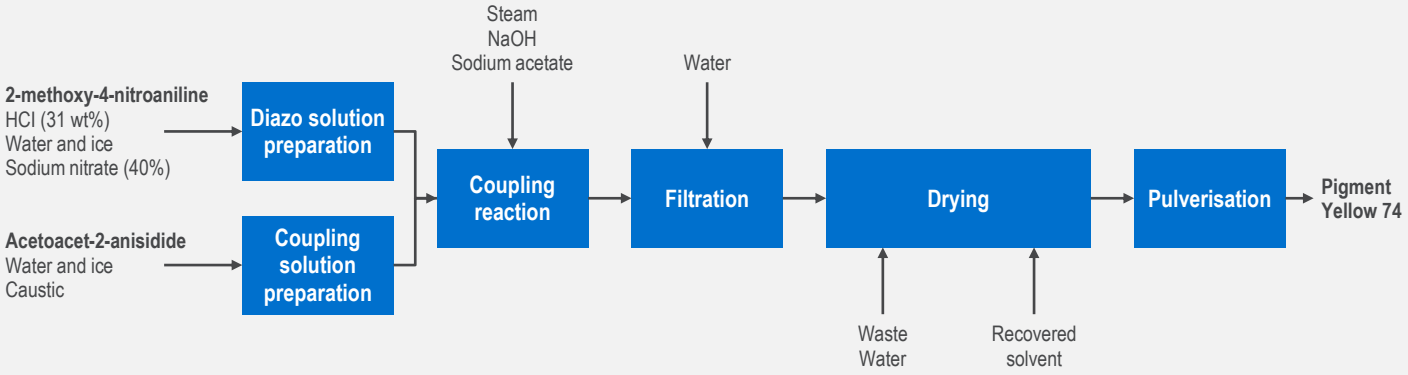
Selected producers	Pigments produced		
	Inorganics	Organics	Specialities
Clariant		■■■	■■
BASF	■■	■■■	■■■
DIC (incl. Sun Chemical)	■	■■■	■■
Heubach	■■	■■■	■■
Ferro	■■■	■	■■
Venator (ex Huntsman)	■■■		■■
Lanxess	■■■	■	■
Altana (Eckart)	■		■■■
Sudarshan (India)	■	■■	■
Meghmani Organics (India)		■	
Changzhou North American Chemical Group (China)		■■	
Lily Group (Hangzhou Baihe Chemical) (China)		■■	

Strategic partnerships and raw material sourcing will be top of the agenda

In the 1990s the organic pigments industry in Western countries was facing compliance with environmental regulations and uncertainty in raw material availability. Almost three decades later, these themes are being replayed in Asia. Since 2017, the entire industry has been feeling the pinch from raw material disruptions caused by the enforcement of environmental regulations in China (known as “Blue Sky” initiatives). Aromatics (benzene, toluene, xylenes) and naphthalene derivatives are the main building blocks of organic pigments; these feedstocks are widely produced in Asia due to the cracking of heavier feedstock for ethylene production and also the availability of coal tar (a by-product of coke ovens from steel and aluminium smelting).

Several producers have seen a shortage of specific pigments such as pigment yellow 74 due to lack of raw materials. With softening demand in some end-markets e.g. automotive, some producers have struggled to pass through the full cost increases to customers. The impact of such supply chain disruption is not yet over and may later repeat itself in adjacent markets such as India.

Illustrative process for pigment yellow 74 production



The perceived commoditisation of the pigments industry and increased competition is also a challenge for all players

It is widely known that the influx of Chinese and Indian producers increased the competitive pressure for pigment producers. Certain pigments such as phthalocyanine blues and greens are intensely competitive – so much so that India producers now dominate this segment of the market. Western players in turn have invested in their own capacity or in JV production capacity in China and India to gain a competitive feedstock position and to be closer to customers. Western producers have also optimised their production assets by having production of some pigments in China or India while keeping production of high performance pigments and dispersions in the West.

Another differentiation strategy by some players is to focus on higher value-added segments within end-markets. Over half of organic pigments by volume is used in inks – from a broad view, this is a more commoditised and low growth area for pigment suppliers followed by polymers and then coatings (less commoditised). However, look beneath the layers and there are still some more attractive areas which tend to attract higher margins e.g. inks for food applications where additional processing is required to reduce the primary aromatic amine content (PAA) or digital inks where technical specifications, such as narrow particle size distribution are critical.

In this now muddled pigments landscape, there is still specialisation required and services valued by customers which differentiate producers. Suppliers must meet customer testing requirements to ensure the technical performance and reproducibility of each batch of pigment. In certain end-markets such as automotive, pigments must have leading performance e.g. high light fastness and heat stability. Other technical defining properties include tinting strength, dispersibility and opacity.

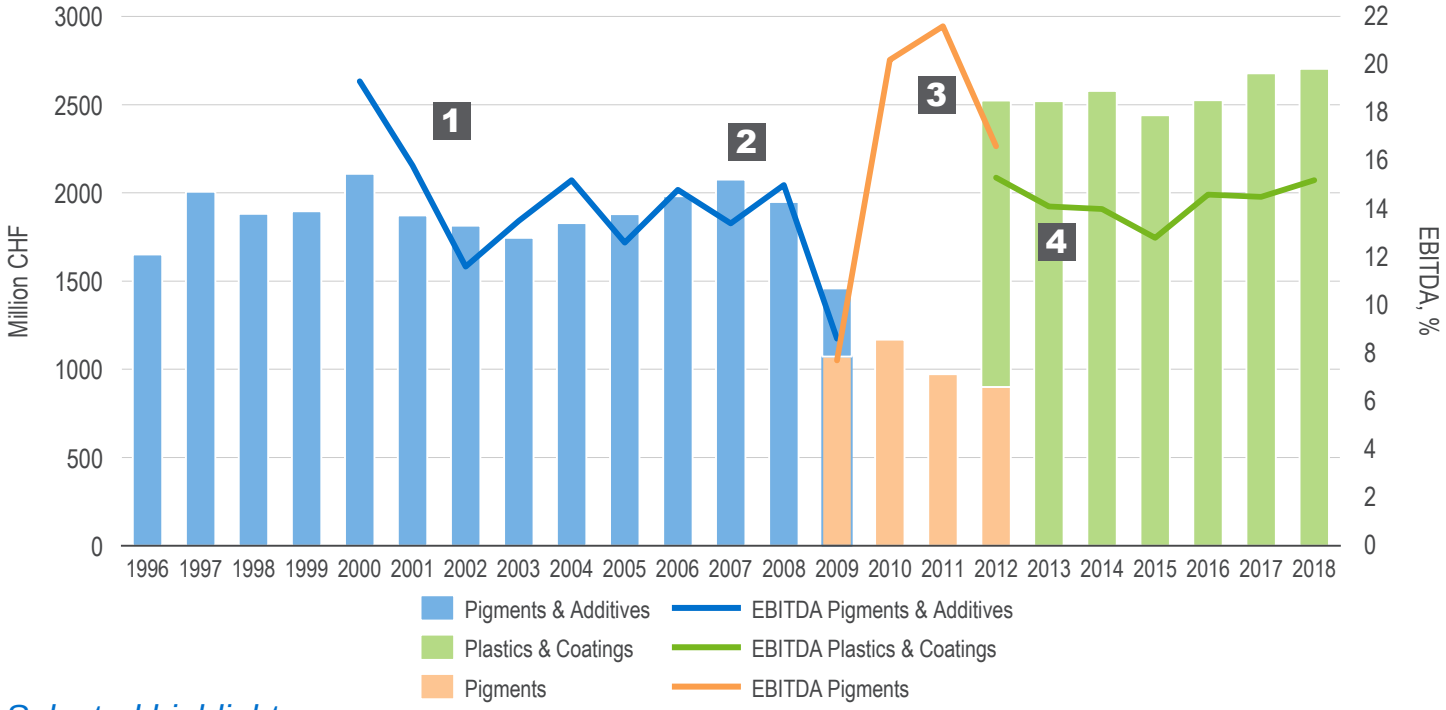
In the dispersions/colourant sub-segment (one step down the pigments value chain), there is less perceived commoditisation. Dispersions allow for optimal properties of the pigment to be achieved and create ease of use for the customer. Upcoming Asian players are looking to gain additional footing here as they grow and challenge the incumbent leading producers such as Clariant and BASF. There are also several strong players solely in the colourants market which may facilitate further growth opportunities for pigment producers.

There is growing interest in the market for more sustainable pigment solutions – this could be a further area of differentiation among players

Clariant leads the market as the first pigment producer to offer some HPP (high performance pigments) quinacridone pigments based on renewable bio-succinic acid. The bio-succinic acid feedstock is sourced from Myriant for use in Clariant's Frankfurt-Hoechst facility. It is also the only producer to offer a bio-based version of DPP (diketopyrrolopyrrole) pigment red 254 (launched in March 2019).

The strongest players will thus sustain their margins by having a strong supply chain, customer service focus plus a tailored and sustainable product portfolio. Clariant has taken several actions along these lines to adapt to changes in market demand and emerging competition

Clariant Pigments (indicative financial performance)



Selected highlights:

1 2001-2002: Volume and price pressure (from Asian players); launch of 4 HPPs

2 2006: Portfolio reduction of bulks by 10% vs plan of 30%
2007: Rising oil prices -$72.5/bbl average; new cost leadership strategy for the Pigments & Additives division – including customer base rationalization, site closures (Germany and US) and introduction of Six Sigma; agreement with Zhejiang Bahie Chemical Holding Group to expand production of high-performance quinacridone pigments
2008: Overhead costs declined by 30% from Lean Six Sigma program; further rationalisation (Coventry, US and Horsforth, U.K)
2009: Global financial crisis, weak demand

3 As of Jan 1, 2010, the Group organized into 10 Business Units – one of which was Pigments
2010: Further facility closures (Muttenz, Switzerland, Thane, India and Onsan, Korea); cost efficiency supports margins
2011-2013: Brent crude averages $100/bbl; acquisition of Italtinto (colour mixing systems)
2012: weak European demand and lower capacity utilization

4 From 1 Jan 2013, Clariant regrouped the 7 BUs into 4 Business Areas. Plastics & Coatings includes BU Additives, BU Masterbatches and BU Pigments
2014: Clariant announces use of bio-based feedstocks for quinacridone pigments at Frankfurt
2018: Project Clockwork to improve effectiveness and efficiency of the end-to-end supply chain
2019: Clariant launches bio-based version of Pigment Red 254

Sustaining EBITDA margins in the range of 15 percent appears to be achievable for a new owner of the Clariant Pigments business

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