COMPANY: FMC Corporation | NYSE: FMC
INDUSTRY: Agricultural Chemicals

PRICE (AS OF CLOSE 9/6/2023)
USD 82.19
MARKET CAP
USD 10.3 BN

We are short **FMC Corporation** ("FMC" or the "Company") because FMC has concealed from investors that it has suffered a recent string of stunning legal defeats around the globe that have enabled competitors to now launch competing generics at prices up to 80% below the price of FMC's flagship insecticide product. Contrary to the Company's claims, FMC's process patents do not protect its flagship product from generic competition. **The dam has broken**.

FMC is an agricultural chemical manufacturer specializing in patented crop protection products. FMC's flagship products are patented diamides, which account for almost 40% of FMC's TTM revenues and an **estimated 60%+ of reported EBITDA**. Despite the expiration of the composition patents on FMC's diamides, **FMC tells investors it will not face generic competition on its flagship products until 2026 at the earliest** because FMC still holds a suite of "process" patents, which FMC claims will bar generic entrants for the next several years. Absurdly, FMC even tells investors that "there is not a single legal competitor … in the world today." **This is simply not true**.

In our opinion, FMC continues to misrepresent to investors that it will not face generic competition for its flagship diamides when in reality, as a result of devasting recent legal defeats, generics have already launched in key markets of India and China and are on the precipice of launching in Brazil. Our investigation found dozens of legal competitors, many industry heavyweights, who are, right now, manufacturing and selling generic versions of FMC's top selling insecticide product in FMC's most important markets **at much lower prices**. In China for example, competitors are selling generics for up **80% below the price of FMC's branded equivalent**. **In FMC's key market of India, the Delhi High Court recently found FMC guilty of misleading the court and the patent office, and well-capitalized competitors have now launched generic versions of FMC's top selling CTPR product** at cut prices and are already projected to take 40-50% of FMC's CTPR diamide market share in India in the next year.

This could not have come at a worse time for FMC, as its revenues have already been crushed by a global inventory glut. FMC just reported a 30% YoY revenue decline *before* generic competition is set to hit key markets in full force. In our view, this has all the makings of a 2H 2023 disaster, not a rebound.

In our view, **FMC is reminiscent of Enviva (EVA)**, as we believe that in both cases, dangerously levered companies concealed from investors the deterioration of their core businesses, resulting in an inescapable cycle of falling revenues, plummeting cash flows, declining profits, punitive borrowing and dividend cuts. Like Enviva, as its profits and cash flows cratered, FMC has borrowed at increasingly punitive rates to buy back stock and pay dividends. FMC's recent surge in debt pushed its net debt to EBITDA ratio above 3.5x, which breached its leverage covenants.

But without patent protection for its leading product in its key markets, and battling a flood of capable generics, we believe that FMC's revenues, margins and cash flows are set to collapse. In both Asia and Latin America, based on the prices of generic products already launched in markets where courts rejected FMC's process patents, evidence suggests that FMC's diamide gross margins could realistically fall from ~70% to as low as ~35% by FY 2024 in a post-patent world.

Given that FMC's patented diamides account for an estimated 60%+ of EBITDA, we expect that a tidal wave of generic competition on FMC's flagship product will crush FMC's revenues and profits while blowing out its leverage covenants. Accordingly, we doubt that FMC will be able to continue to roll commercial paper at absurdly cheap rates and we believe that **like Enviva, an investment rating downgrade is likely**. Ultimately, we believe that FMC is facing a perfect storm of both falling margins, shrinking revenues and crushing leverage.

1. **FMC Conceals Patent Litigation Losses and the Arrival of Aggressive Generic Competition in Asia**. Patents on FMC's leading insecticide product expired in 2022, yet FMC repeatedly promises investors that it will not face any legal competition from generics in Asia until 2026 at the earliest, supposedly because FMC's purportedly valuable "process patents"

will prevent generic competitors from entering key diamide markets like India and China. For example, in May 2023, FMC's CFO boldly stated that "there is not a single legal competitor in Rynaxypyr in the world today" and "there are no current legal entrants" in India or China. In our view, this is simply false.

a. **Devastating Defeats in India; Generics Have Already Entered the Market.** India is one of FMC's largest markets and projects to be an engine for future growth. **Undisclosed to investors**, and despite FMC's many statements to the contrary, Indian courts have recently unequivocally rejected FMC's process patent defenses and refused to enjoin generic competitors from manufacturing and selling competing generic CTPR based diamide products. In one scathing opinion, the Delhi High Court even reprimanded FMC for "**suppressing material facts and misleading**" the patent office and the Court. The courts authorized generics to compete in India, and as a result, industry heavyweights **have already launched**. We found hundreds of product registrations. Today, four out of dozens of new India competitors are already forecasting almost $100 million in year one sales of **lower priced CTPR diamides**, implying at least a 40-50% decline in FMC market share from these four competitors alone.

b. **Cut Price Generics Launched in China after Chinese Patent Office Rejects FMC's Claim**. In China, the National Intellectual Property Office rejected FMC's process patent claims thereby greenlighting generic competitors. As a result, within the last year, over 60 competitors have collectively registered at least 80 competing products and invested capital to manufacture almost 90,000 tons of CTPR diamide active ingredient for sale and distribution. Notably, our investigation found that these new generic manufacturers are selling competing generic CTPR diamides at an **80% discount** to the price of FMC's branded insecticide. Importantly, Chinese chemical manufacturing is likely to impact many other markets around the globe as generic CTPR now made in China is legally exported or illegally smuggled into FMC's other markets.

FMC has yet to feel the full pain of these generic entrants, which are only now ramping up production and sales. FMC's sales in Asia declined 29% YoY in Q2 2023 because of an inventory glut but FMC promises a rebound in 2H 2023 by clearing inventory channels and raising prices. However, such projections ignore the reality of generic competition flooding key markets like India and China with deeply discounted products, which we think are poised to crush FMC's revenues, profits and cash flows.

2. **Generics Poised to Enter a Brazilian Market in "Crisis."** Brazil is FMC's single largest market, accounting for 28% of FMC's $5.8 billion in FY 2022 revenue, even after a 38% drop in Q2 2023 LatAm revenue. FMC tells investors that generic competition in Brazil will not happen before 2026, but our investigation shows that, **undisclosed to investors, FMC has suffered a stunning defeat in summer 2023 when two of the three required Brazilian government regulators approved a generic diamide launched by a Chinese generic ag-chem heavyweight**. **The only thing standing in the way of generic competition in Brazil appears to be a last-minute urgent motion filed by FMC in <u>July 2023</u> that is currently being reviewed by the court**, begging the judge to delay the final generic regulatory approval. As we go to press, the Brazilian courts are deciding the motion, but our read is that FMC's tenuous position in Brazil is hanging by a thread. In our opinion, generic competition could potentially arrive in Brazil shortly, perhaps <u>within months or even weeks from now</u>.

a. **Even Without Generic Competition, FMC Brazil is Already in a "Big Crisis."** A flood of generic competitors could not come at a worse time for FMC in Brazil, where FMC is already facing market conditions so onerous that an expert described it as a "big crisis," making a mockery of FMC's guidance to investors that it expects a recovery in the second half of 2023. We spoke to a number of experts, including former employees of FMC and its distribution partner UPL, who said that a reversal of the factors which temporarily boosted the Brazilian crop protection market during the Covid induced supply chain disruption is likely to drop the crop protection industry back to 2021 levels, erasing the gains of the last 2-3 years.

b. **Ballooning Receivables and Deteriorating Customer Creditworthiness Further Evidence of "Crisis" in Brazil**. As of June 2023, FMC's total receivable balance hit $2.8 billion, the majority of which come from Brazil, where customers can take over **one year to pay**. Based on our analysis, the Brazilian receivables situation has become such a challenge that to move receivables off the balance sheet and bring in quick cash, FMC has begun selling receivables at a steep discount through non-recourse securitization and factoring facilities. Although FMC is coy about the haircut, given that Brazilian interest rates are over 14%; receivables take over a year to pay; and the receivables are owed by customers in an industry that brings inherent credit risk, we estimate that FMC is taking at least a 16-20% haircut on each securitization or factoring transaction. There is evidence to support this estimate, as in one securitization transaction FMC received **70 cents on the dollar in cash** plus a subordinated interest in a securitized receivables fund in which Brazilian documents show, **one customer has already defaulted**. FMC has offloaded about $385 million in receivables at a presumably steep discount over the last 12 months, which we believe speaks to the underlying deterioration of customer creditworthiness in Brazil. Worse, we think that factoring at such discounts is a Faustian bargain that weakens the Company's balance sheet to temporarily mask a perilous decline in FMC's cash flow.

c. **Rampant Smuggling Adds Further Pressure to Margins in Brazil**. At the same time FMC is facing imminent defeat in its Brazilian court battle to prevent generics from entering the diamide market, we believe that FMC will likely experience further loss of revenues and downward pressure on prices from the proliferation of smuggled or black-market generics from Asia, which evidence suggests will increasingly enter Brazil illegally. A compilation of police report data from 2008-2018 shows that Brazilian police seized agricultural chemicals from many of the same distributors in Uruguay and Paraguay that are currently importing a generic version of FMC's flagship diamide from China today. The impact of smuggling is not academic, as black-market diamides will only add further pressure to product prices and FMC's margins.

3. **Process Patents, Proven Impotent in India and China, Are Unlikely to Protect FMC in Rest of World.** FMC's CEO and CFO recently doubled down on the idea that investors need not worry about generic competition anytime soon, stating that FMC's process patents and associated data protection rights "continues well until the end of this decade" or even "a bit longer." **Yet as we have already seen, such claims, in our opinion, are simply not true.** FMC's process patents were rejected by courts and regulators in India and China, and we believe that Brazil on the cusp of allowing generic competitors. We also spoke to a number of industry and patent law experts, including a former FMC executive, all of whom explained why FMC investors should not place much faith that FMC can successfully defend its diamide franchise by asserting process patents.

4. **FMC's Financial Situation Deteriorating over Mounting Debts, Covenant Breaches, and Borrowing to Fund Dividends and Stock-Buy Backs**. FMC's financial position has deteriorated quickly over the last few months, even before the impact of generic competition in key markets. In May 2023, FMC issued $1.5 billion in senior secured notes, which together with falling revenues and profits resulted in FMC apparently breaching its leverage covenant, forcing it to seek an amendment from creditors. FMC's current net debt to EBITDA stands at 3.55x, but we think that given the launch of generics and the resulting major decline in revenues and profits, FMC could easily trip its new covenant of 4.0x.

   Moreover, even despite a temporary leverage ratio reprieve, we think that a covenant breach poses a direct threat to FMC's lifeline: its access to low interest rate short-term borrowing. FMC continues to roll commercial paper, which provides $1 billion in short term debt at 5.9%. In fact, 21% of its $4.7 billion gross debt is commercial paper, borrowed at a very favorable rate. That's a significant vulnerability if the Company's leverage position continues to deteriorate. The fact that FMC currently borrows at just ~60 bps above the Effective Federal Funds Rate is frankly unbelievable.

   Despite poor cash flow generation, FMC nevertheless returned $124 million to shareholders in Q2 2023, through a combination of $73 million in dividends and $51 million in share repurchases. FMC says the dividends will continue but considering the Company's falling revenue and poor cash flow, FMC is now relying on borrowings to finance continued payments to shareholders. This is simply unsustainable. Ultimately, we think that rising short-term borrowing costs, deteriorating revenues, profits and cash flows will not only push FMC's leverage to dangerous heights, **but likely prompt an investment rating downgrade**.

5. **Low Priced Generics Set to Undercut FMC's Margins and Crush its Revenues**. Following a banner 2022, FMC faced a crushing decline in revenues, cash flows and profits in 1H 2023 due to a global inventory glut of crop protection products. Despite such carnage, FMC projects a strong bounce back in the second half of 2023, which FMC predicts will be led by cost tailwinds and FMC's plan to raise prices. Given the flood of generics currently entering Asia and looming in Brazil, in our opinion, any notion that FMC will raise prices of its flagship diamide product are a fantasy. Rather, in our opinion, the impending flood of generic diamide products will depress both volume and prices for FMC's flagship diamides in the critical markets of Asia and Latin America. Furthermore, there is strong evidence that this reality is not priced into FMC's stock, as analyst consensus is that

FMC has several more years of patent protection before it has to worry about generic competition. Yet, as our investigation has revealed, analyst consensus is premised on misrepresentations by the Company regarding the **impending flood of generics, which contrary to FMC's claims, are already here undercutting FMC's prices and taking market share in key regions**.

- **Asia (India and China).** In Asia, we anticipate much more serious sales declines and margin compression for the remainder of FY 2023 and into FY 2024 than guided by FMC or projected by analysts, who are not pricing in the flood of generics that are **right now** legally competing in Asia. As such, we estimate diamide revenues will drop 30%, if not more, by the end of FY 2023 and 40% into FY 2024. Because generics are already massively undercutting FMC on price, we believe that FMC's margins in region will compress from ~70% to 35%, kneecapping the Company's EBITDA.

- **Latin America (Brazil).** In Brazil, we believe that FMC's patent defenses are hanging by a thread and that competitors are on the cusp of registering generic diamides. We estimate that the impending arrival of the first local generic CTPR products as soon as 2H 2023, combined with an influx of generic diamides smuggled into the region from China, will compound the severe "crisis" already gripping the market and will put an end to FMC's hopes of raising prices in 2H 2023. As such, we anticipate a 15% decline in diamide revenues by the end of FY 2023 followed by a 30% decline in 2024 when we estimate generic competition to hit the Brazilian market in full force in time for the critical soybean crop growing season.

In both the Asia and Latin American regions, there is strong evidence that regional diamide margins could realistically fall from ~70% to as low as ~35% by FY 2025 in a post-patent world. Given that we estimate that FMC's diamide sales accounted for 60%+ of 2022 EBITDA, we think this spells disaster for FMC.

FMC has historically traded at a 10x EBITDA multiple when it generated high margins from patent protected products and had a healthy balance sheet. Yet going forward, we believe that FMC will face a perfect storm of shrinking revenues, compressing margins, generic competition, eroding market share, dangerous leverage, a persistent glut of inventory in the channel and increasing debt service costs. We think that investors will no longer value FMC at its historic multiple and believe that a multiple contraction to 8x EBITDA would still be very generous.

Factoring in the rapid encroachment of generics on FMC's prized diamide products and the resulting revenue declines and margin compression for these products in the Asia region and Brazil in FY 2024, along with an 8x EBITDA multiple, it would imply a share price of $40.74 – **a 50.4% decline** relative to $82.19 and **63.8% lower** than analysts' consensus price target of $112.66.

Implied Share Price ($m, except per share items)	
EV	8,890
EV/EBITDA Mult. (FY24)	8.0x
Debt	4,683
Cash	942
Minority Interest	24
Equity Value	5,125
Shares Out	126
Implied Share Price	**40.74**
Cur. Share Price	82.19
% Change	**-50.4%**
Cur. Consensus Price	112.66
% Change	**-63.8%**

Accordingly, we doubt that FMC will be able to continue to roll commercial paper at absurdly cheap rates and we believe that **an investment rating downgrade is, in our opinion, likely**. Ultimately, we believe that FMC is facing a perfect storm of both falling margins, shrinking revenues and crushing leverage.

I. FMC Conceals that Devastating Recent Legal Defeats in India and China have Allowed Low-Priced Generics to Enter Key Asian Markets.

FMC's core business is to sell directly, and through licensed partners, its flagship diamide products, which **accounted for $2.1 billion or roughly 36% of FMC's total revenues and an estimated 60% of its EBITDA in 2022**. The Company acquired the patented diamides from Dupont in 2017 and currently brands them in the U.S. as "Rynaxypyr" and "Cyazypyr." These two active ingredients comprise 80% of all diamide class sales industry-wide and are responsible for enabling FMC's growth and high margins in recent years. Rynaxypyr is the brand name for the diamide chemical CTPR[1] and is one of the best-selling insecticides in the world.

The critical composition patents on FMC's leading diamide product expired in 2022, yet FMC repeatedly promises investors that it will not face any legal competition from generics in Asia until 2026 or later, supposedly because FMC's purportedly valuable "process patents" will prevent generic competitors from entering key diamide markets like India and China. Despite a global glut of inventory that sent Q2 2023 revenues down 30% YoY, FMC claims that because of continuing process patent protection, revenues will not only recover in the second half of this year, but FMC will even raise prices on its products.

But we found that contrary to FMC's claims to investors, FMC recently lost key patent legal proceedings in India and China where well capitalized competitors have already launched generics at prices up to 80% **below the price of FMC's branded diamide**. As a result, **dozens of industry heavyweights** have recently registered generic CTPR products for manufacture, export, distribution or sale in FMC's key Asian markets, just in time for the critical soybean crop growing season, a key driver of CTPR sales.

In India, for example, undisclosed to investors, the Delhi High Court recently issued a scathing opinion finding that FMC was guilty of "**suppressing material facts and misleading the court and also the patent office**." Following multiple FMC defeats at the Delhi High Court, hundreds of generic products have registered. Four larger Indian competitors **are already selling competing CTPR products** and forecasting almost $100 million in sales of low-priced generic CTPR products in India over the next year. That would imply over a 40-50% decline in FMC market share in diamides in India from these four competitors alone.[2] One well-capitalized Indian competitor even boasted after launching competing diamide generics that this "would be the year of CTPR," while another competitor stated that it would "definitely be targeting a big number out of this product."

Similarly, in China, we found that contrary to FMC's claims, large companies are not only actively selling generics but committing capital to build facilities to manufacture over 86,000 tons of CTPR. Critically for investors, **major competitors are selling CTPR at prices 80% below FMC's branded product**. Undercutting FMC's prices by 80% would devastate not only FMC's revenues, but also would hamstring FMC's pricing power and historically high margins. Such price wars make a mockery of FMC's promise to investors that it will raise prices this year.

FMC projects that revenues and profits in Asia will rebound in Q4 2023 as inventory levels in the channel normalize, input costs decrease, and FMC raises prices, but this projection ignores that, going forward, FMC will now face formidable generic, low-priced competition in India, China and other key markets.

In short, **we believe that FMC has concealed from investors that it has already lost patent protection for its flagship diamide product in these key markets**, **and that the Company's sales, margins and cash flows will be further hammered by low-priced generics which are projecting to take substantial market share from FMC in the second half of FY 2023 and beyond**.

1. FMC Falsely Claims that Legal Victories have Ensured Diamide Patent Protection for Years to Come.

The key composition patents on FMC's leading diamide product expired in Asia in August 2022, yet FMC claims that it has nevertheless prevailed in legal proceedings to prevent the entry of competitors by successfully litigating that its

[1] "CTPR" is the common shorthand for "chlorantraniliprole" which is the active ingredient of FMC's branded product, Rynaxypyr. CTPR represents an estimated 84% of all FMC diamide sales with FMC's other diamide, Cyazypyr, representing the remainder. According to FMC, Cyazypyr's composition patents expire after CTPR's patents, beginning in January 2024.

[2] Best AgroLife, one of FMC's largest generic competitors in India, stated in a recent August 2023 earnings call that the total CTPR market in India is valued at ~$242 million.

process patents bar generic entrants. Starting in mid-2021, FMC issued news releases and made numerous disclosures touting its supposed success in litigation against competitors trying to manufacture or sell generic diamides in India.

FMC CORPORATION GRANTED INTERIM INJUNCTION AGAINST AGRICULTURAL CHEMICALS MANUFACTURER NATCO FOR PATENT INFRINGEMENT

PHILADELPHIA, July 7, 2021 /PRNewswire/ -- FMC Corporation (NYSE: FMC), an agricultural sciences company, announced the Delhi High Court today granted the company an interim injunction against **NATCO** Pharma Limited ("**Natco**"). The interim injunction...

Source: FMC News Release

FMC's SEC Form 10-K filed in late February 2023 even cites to favorable judgments in India and China protecting its patents from generics.

We actively monitor and manage our patents and trademarks to maintain our rights in these assets and we strategically take aggressive action when we believe our intellectual property rights are being infringed. During 2022, we initiated proceedings to enforce several of our patents and trademarks against generic producers and infringers, resulting in multiple favorable judgments and settlements, including in India and China. In early 2022, we received notice that certain third parties are seeking to

Source: SEC Form 10-K for FY 2022

In two instances in February and March 2023, FMC management repeatedly answered direct questions from analysts regarding the status of patent protection in Asia. Management unequivocally responded that FMC had been successfully and aggressively enforcing patents and, once again, reiterated that the Company **won** legal battles in India and China.

Prashant N. Juvekar
Citigroup Inc., Research Division

Can you just talk about how do you see the cadence of these expirations and what can you do to extend a life?

Andrew D. Sandifer
Executive VP & CFO

And certainly, with -- speaking directly to Rynaxypyr, which has earlier expiration dates, Cyazypyr goes a little bit further. But as you pointed to, P.J., it's not just relying on the patents themselves. And obviously, we've been very aggressive in enforcing the patents. We have won cases for infringement in both China and India and continue to aggressively defend our patents. But we've also engage partners and brought other people in the business ahead of any kind of patent expiration. We don't believe that in our industry, in crop protection, that there really is a patent cliff. It's more of a long plateau as you transition from being a fully-patented to a post-patented life.

Source: Citi Investor Conference, February 21, 2023

Stephen V. Byrne
BofA Securities, Research Division

And then recall you have a couple of legal battles in India for some generic product. What's the status of those patent infringement cases?

Mark A. Douglas
President, CEO & Director

Yes. There's a couple of cases in India that we recently won, a couple of cases in China as well. It's interesting

Mark A. Douglas
President, CEO & Director

There are also significant patents related to the whole process of manufacturing. These molecules are 15 or 16 synthetic steps, and we have many of those steps patented. I think it's worth noting today that the only legal material that's available is from FMC, even though the original patent has come off. Why is that? Because of the strength of the rest of the patent portfolio. We have great contracts with 5 of the other major players in the industry and about 50 contracts with other smaller players in different regions of the world. They are very successful. About 40% of our total diamide sales go through those contracts.

Source: BoA Investor Conference, March 1, 2023

In May 2023, FMC presented at a Goldman Sachs investor conference where its CFO assured investors that **"there is not a single legal competitor in Rynaxypyr in the world today" and "there are no current legal entrants" in India or China**.

> Despite that, there's not a single legal competitor in Rynaxypyr in the world today that said differently, that isn't buying it from us. Now there are illegal competitors and have been since before we bought the business. So there's been a legal material, particularly in China and India, always. But there are no current legal entrants in either of those markets where a the initial composition of matter patents have expired. And that's in part because that's just the beginning of the story around the patent protection.

Source: Goldman Sachs Industrials and Materials Conference, May 9-10, 2023

Time and again, FMC has repeatedly and unequivocally told investors that its diamide patents are safe from generic competition in Asia. In our opinion, this is false and absurdly misleading to investors.

2. FMC Recently Lost Critical Patent Litigation in India and China.

India is one of FMC's largest markets approaching $450 million in annual sales. FMC projects India to be an engine for future growth and a valuable source of continuing high margin revenues for years to come.

Despite FMC's many statements to the contrary, Indian courts have unequivocally rejected FMC's patent claims and refused to enjoin generic competitors from manufacturing and selling competing generic CTPR products. In one case, the Delhi High Court even reprimanded FMC for "**suppressing material facts and misleading**" the patent office and the Court.

In 2021, a large and well capitalized generic competitor, Natco Pharma, began preparing to offer a generic alternative to CTPR. FMC sued to prevent generic competition. Although FMC won an initial temporary injunction, which it publicized in a press release to investors, Natco Pharma **ultimately won the case**. In September 2022, the Delhi High Court found that "no case of infringement is made out" and the court vacated the injunction that had previously prohibited Natco Pharma from launching generic CTPR.

IN THE HIGH COURT OF DELHI AT NEW DELHI

Date of decision: 19th September, 2022

CS(COMM) 349/2022 & I.A. 8132/2022, 9519/2022, 10886/2022

FMC CORPORATION & ORS. ..... Plaintiffs

Through: Mr. Sandeep Sethi, Senior Advocate with Dr. Sanjay Kumar, Ms. Arpita Sawhney, Mr. Arun Kumar Jana, Ms. Meenal Khurana, Mr. Harshit Dixit and Mr. Priyansh Sharma, Advocates.

versus

NATCO PHARMA LIMITED ..... Defendant

Through: Mr. Chander M. Lall, Senior Advocate with Mr. J. Sai Deepak, Mr. G.Nataraj, Mr. Avinash K. Sharma, Mr. Ankur Vyas, Ms. Ananya Chugh, Mr. Shashikant Yadav and Ms. Harshita Agarwal, Advocates.

CORAM:
HON'BLE MS. JUSTICE JYOTI SINGH

JUDGEMENT

40. Plaintiffs have thus been unable to discharge the burden of proving that the Natco process is equivalent to the suit patent process and *prima facie* no case of infringement is made out. Balance of convenience also lies in favour of Natco. It was stated on behalf of the Natco that it has already suffered a loss of nearly 100 crores on account of not being able to launch its product. The product patent IN'307 has already expired on 13.08.2022. The product in question is an insecticide and as rightly pointed out by the learned counsels for the Defendant, is required between September to December in the Kharif season. Seen holistically, the restraint order passed against the Defendant from launching the product CTPR deserves to be vacated.

Source: [Opinion of Delhi High Court (Natco Pharma 09.19.22)]

Although FMC immediately appealed to a two-judge panel, it lost again.

IN THE HIGH COURT OF DELHI AT NEW DELHI

% Judgment delivered on: 05.12.2022

+ **FAO(OS) (COMM) 301/2022**

FMC CORPORATION & ORS. ..... Appellants

versus

NATCO PHARMA LIMITED ..... Respondent

Advocates who appeared in this case:

For the Appellants : Mr Ramesh Singh, Senior Advocate with Dr Sanjay Kumar, Ms Arpita Sawhney, Mr Arun Kumar Jana, Ms Meenal Khurana, Mr Harshit Dixit and Mr Priyansh Sharma, Advocates.

For the Respondents : Mr J. Sai Deepak, Mr G. Nataraj, Mr Avinash K. Sharma, Mr Ankur Vyas, Mr Shashikant Yadav and Ms Harshita Agarwal, Advocates.

CORAM
HON'BLE MR JUSTICE VIBHU BAKHRU
HON'BLE MR JUSTICE AMIT MAHAJAN

JUDGMENT

52. We concur with the aforesaid *prima facie* finding. Accordingly, we find no reason to interfere with the impugned judgment.

Source: [Opinion of Delhi High Court (Natco Pharma appeal 12.5.22)]

The ruling was widely reported in the Indian media, and following its victory, in September 2022, Natco Pharma announced the rollout of a competing generic CTPR product to the Indian agricultural chemical market.

THE TIMES OF INDIA

Delhi HC bench dismisses FMC Corp's CTPR patent infringement plea against Natco

TNN | Dec 5, 2022, 11.34 PM IST

HYDERABAD: In a significant boost for Hyderabad-based Natco Pharma, a double bench of the Delhi High Court has dismissed a patent infringement appeal regarding insecticide Chlorantraniliprole (CTPR) filed by FMC Corporation and its subsidiaries.

"...double bench of the high court of Delhi has dismissed an appeal filed by FMC Corporation, FMC Singapore and FMC India and has upheld prima facie the judgement of the single judge that the Natco Chlorantraniliprole (CTPR) process does not infringe FMC's Indian Patent 298645," Natco Pharma said in a regulatory filing to the bourses.

Following the Delhi HC approval, the company had on September 24, 2022, announced the rollout of CTPR 18.5% SC under the Natgen brand in the Indian market.

Source: [News article]

To our knowledge, FMC has not only failed to inform investors that it lost this key case, but even after this devastating defeat **FMC continues to mislead investors by bragging about cases in India it "recently won" and misrepresents to investors that there are no legal generic competitors to its key diamide product**. FMC's silence on its ultimate loss in India to Natco Pharma is especially surprising considering FMC saw fit to inform investors in a press release when it won a *temporary* injunction against Natco Pharma in 2021. Clearly, FMC believed it was sufficiently material to broadcast its short-term victory. Yet FMC, to our knowledge, has failed to inform investors that FMC ultimately lost the case.

This was not the only example of a major FMC loss in Indian court which we think the Company has concealed from investors. In 2022, around the same time it was losing to Natco Pharma, FMC sued another industry powerhouse in India, GSP Crop Science. This was a separate lawsuit in which FMC asserted that different process patents barred the entry of generic CTPR products. The result was the same.

In November 2022, the Delhi High Court again found against FMC and cleared the way for generic competition. In the *GSP Crop Science* case, the court chastised FMC for making **farcical arguments** in an improper attempt to use its "maze of patents" so as "to merely extend the monopoly on CTPR, in some way or the other." The Court found that FMC was inappropriately attempting to "evergreen" its patents.

In a scathing opinion, the Indian court also found that FMC was "guilty of **suppressing material facts and misleading the court and also the patent office**."

(ii) The Plaintiffs are *prima facie* guilty of supressing material facts and misleading the Court as also the patent office.

(iii) The long list of patents, which have been filed in respect of CTPR and its various components and processes clearly points towards an attempt for evergreening CTPR. This has been done even though, the product patent for the same has expired and therefore, fallen into public domain.

Source: Opinion of Delhi High Court (GSP Crop Science 11.14.22)

Ultimately, the Delhi High Court denied all of FMC's process patent claims, awarded costs to GSP Crop Science and cleared the path for GSP Crop Science to launch generic competition. Like the *Natco Pharma* case, the court ruling against FMC was widely reported in India news media.

GSP Crop gets go-ahead from Delhi High Court for manufacturing and marketing CTPR in India

by asianprimenews November 18, 2022 0 245

SHARE 0

One of India's first agrochemical company to manufacture and sell Chlorantraniliprole (CTPR), an insecticide product to protect sugarcane, rice, soyabean, pulses and vegetables.

Ahmedabad, 16th November 2022: GSP Crop Science, a leader in the agrochemical business gets the final clearance from Delhi High Court to manufacture and sell Chlorantraniliprole (CTPR), which is an insecticide product in India. The Hon'ble Delhi High Court on 14th November 2022,

Source: News article

Yet like its defeat in the *Natco Pharma* case, to our knowledge, FMC has never disclosed this crushing adverse ruling to investors and continues, in our opinion, to falsely claim that generics will not compete with the Company in Asia until 2026 at the earliest. **But generics are already here and are undercutting FMC on price at scale and exactly right on time to take market share ahead of the critical soybean crop growing season**!

But FMC's legal defeats do not stop in India. In China, in September 2022, the China National Intellectual Property Administration ruled that FMC's process patent of an intermediate of CTPR and its synthesis process was invalid. The China Intellectual Property Administration database shows that in 2020 FMC submitted three patent applications regarding synthesizing 2-amino-5-chloro-N, 3-dimethyl benzamide, a key intermediate used in the synthesis of CTPR, but none of these applications has been granted a patent.[3] Yet the patent database shows that two Chinese companies received patents on their synthetic methods for the key intermediate. These Chinese companies do not appear to be affiliated with FMC.

Unlike its defeats in India, FMC did provide minimal disclosure regarding this legal defeat. FMC's February 2023 10-K mentioned the adverse ruling followed by the caveat that "we have filed appeals, [but u]nder Chinese law, the patents remain valid **but are not enforceable pending appeal**" but "we intend to defend vigorously any diamide patents that are challenged."

Despite such disclosure, we think FMC's representations to investors were nonetheless highly misleading. First, despite acknowledging the case and the defeat, FMC continued to maintain that generics would not launch in Asia until at least 2026. Yet after the adverse ruling by the Chinese patent office, **competitors have already launched generic CTPR products in China**!

Second, within a mere week of the 10-K, FMC went on an investor road show in which FMC expressly, repeatedly, and we think misleadingly, continued to state that FMC faced no legal competition in China. We think this is plainly false. Absurdly, FMC even continued to discuss what we think are phantom legal victories in China.[4] In reality, the Chinese patent office has ruled against FMC's process patent, paving the way for competitors, who, undisclosed to FMC investors, **are already launching almost 90,000 tons of cheap generic CTPR to undercut FMC's prices and market share**.

By our count, FMC asserted multiple different patents in different legal proceedings in India and China and has lost on each material patent claim FMC asserted in those cases. Yet, outrageously, FMC continues to tell investors that it is successfully defending its patents and that such alleged victories will keep generic competitors at bay in India and China until 2026 and beyond. We simply have no idea how to reconcile FMC's statements with the rulings in India and China.

3. FMC Conceals that Low Priced Generics Have Already Launched in Key Asian Markets.

FMC's legal defeats were not merely academic. To the contrary, generic competition has already launched. This includes generic low-cost CTPR products from some of the industry's largest and best capitalized generic agricultural chemical companies who are telling their investors that they expect to take substantial market share in India and China, FMC's most important Asia markets.

a) Dozens of generic competitors have already launched in India.

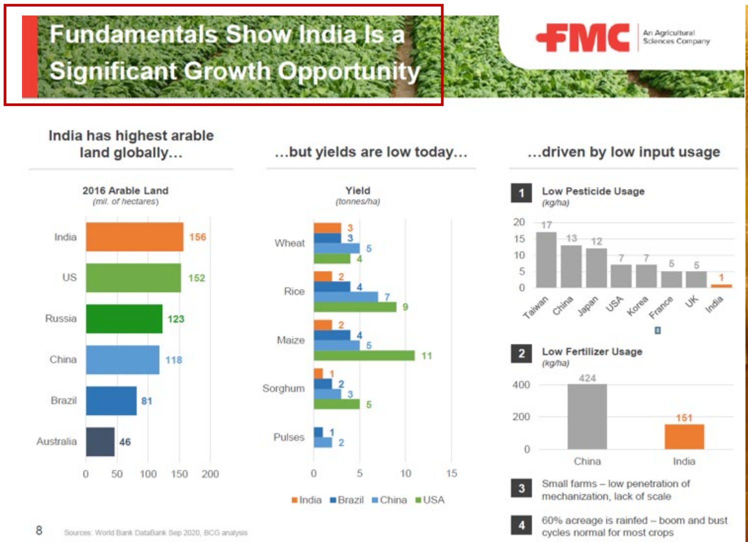
Within the Asia region, the India sub-region is by far FMC's biggest, generating revenue approaching $450 million in FY 2022, 8% of FMC's currently forecasted $5.3 billion annual revenue. Aside from its sheer size and impact to FMC's bottom line, India is critical to FMC's future growth plans. The country has a massive size of arable land,

[3] FMC's patent applications: CN114080388A, CN114621130A, and CN115536540A.

[4] On March 1, 2023, just one week after FMC filed the FY 2022 10-K, FMC's CEO spoke at a Bank of America investor conference and discussed "a couple of cases in China" that FMC had "recently won" and stated that "the only legal material that is available is from FMC, even though the original patent has come off." And just two months after that, he spoke at a Goldman Sachs investor conference, stating that "there are no current legal entrants in either [China or India]" and "there's not a single legal competitor in Rynaxypyr in the world today."

while the agriculture industry in India generates comparatively lower crop yields and uses comparatively less crop protection products than other markets.

FMC states that the India crop protection market is expected to grow to $4 billion by 2025 at a rate of 6% annually. As FMC's CEO put it more bluntly on FMC's May 2023 earnings call, **India is a "very, very important market"** to FMC. To underscore India's significance to FMC, just weeks ago in late June 2023, FMC's CEO, Mark Douglas, met in India with India Prime Minister Narendra Modi.



Source: [Earnings presentation, Q3 2020; FMC Website]

FMC tells investors that it has no legal generic competition in India, but this is demonstrably false. Following FMC's defeat in Indian court, generic CTPR first launched in late 2022. **Right now**, competitors in India are aggressively manufacturing, marketing, exporting, distributing, selling, and otherwise competing with FMC in Asia with **dozens, if not hundreds,** of low-cost generic CTPR formulations. And many of the competitors are not fly-by-night operations, but rather major industry heavyweights with significant resources and existing sales and distribution channels. These competitors are already generating millions in sales and forecasting taking CTPR market share at an astonishing clip over the next year.

Yet, FMC still actively misleads investors by claiming that it will not face generic competition in India until 2026, even though it is already facing legal competition in India. The following are some examples of the larger, legal CTPR competitors in the India market:

- **Best Agrolife** is a public company in India that has been manufacturing, distributing, and selling agrochemical products in India and internationally for over 30 years. It launched two competing CTPR formulations, *Citgen* and *Vistara* in late 2022. **Best Agrolife is forecasting CTPR sales of over $48 million USD over the next year.**

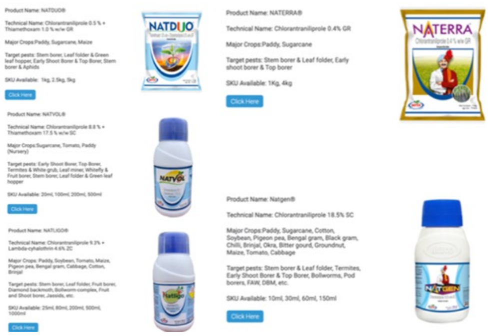
Definitely we are hoping this year we will cross at least Rs. 400 crores of CTPR sales. That is easy for us because we are an old Company; we were the first one who had launched this product. That advantage also we will get. And we now have distributors pan India approximately more than 5,000 distributors. Definitely Rs. 400 crores we will do but we are not talking of the Rs.

Source: [Best Agrolife, Earnings call June 6, 2023; Best Agrolife website]

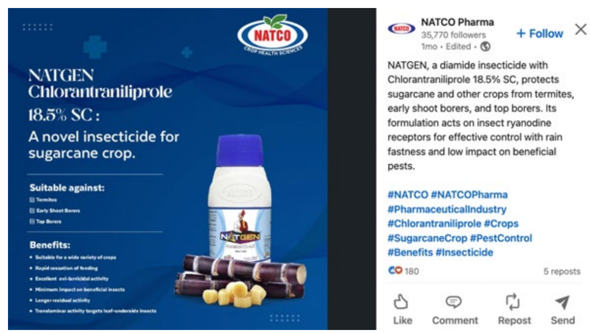
- **Natco Pharma** is a public company in India with a market capitalization of ~ $2 billion USD. Natco Pharma has already launched *five* different formulations of generic CTPR to compete with FMC's high-priced offerings. It officially launched its first CTPR formulations after the Delhi High Court rejected FMC's attempt to stop Natco Pharma from competing with it – many months before FMC management repeatedly told investors that it had no legal competition in India. Natco Pharma forecasts revenue from CTPR sales **of ~$18 million USD and the CEO even stated that "this year will be the year of CTPR."**

> I think the business should do well. I think we just got started. I think we did only INR 40 crores last year. But this year, I think our projection is that we should do about INR 150-plus crores. I think -- we're targeting INR 200 crores, but I think INR 150-plus crores, I think conservatively is what we're looking at. We have other products -- and I think a lot of these filings have been done this year. And I think this year will be the year of CTPR. I think the full value of CTPR, I think, will to realize in this financial year. And subsequent years, we have a pipeline. And I think we are hoping that this business grows to about 10% of our sales. I think that's the stated goal internally.

Source: *Natco Pharma Limited, Q4 2023 Earnings Call, May 30, 2023*



Source: *Natco Pharma website*

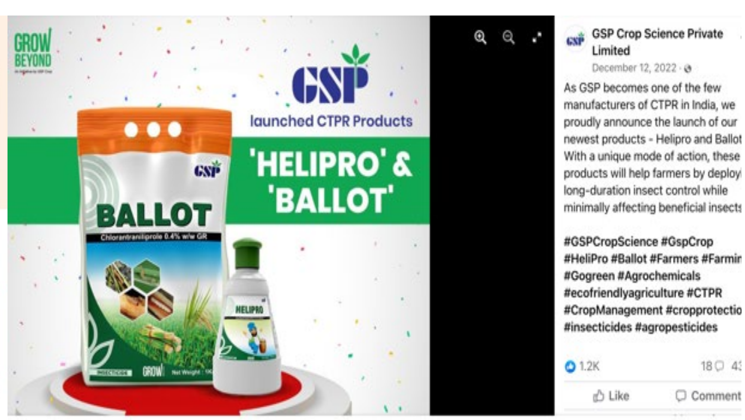


Source: *LinkedIn*

- **GSP Crop Science** is a leading manufacturer of agrochemicals in India, operating four manufacturing facilities and selling more than 70 branded products through a network of 6,500 distributors, over 30,000 dealers and 34 depots in India. GSP launched two competing CTPR products in December 2022, *Ballot* and *Helipro*. **GSP Crop Science anticipates CTPR sales of around $18 million USD this year.**

> According to **Bhavesh Shah**, the Managing Director of GSP CropScience, the companyâ€™s focus in the current fiscal year will be on introducing newer products that offer improved profit margins. Notably, GSP CropScience experienced positive market response in the insecticide segment after the successful launch of chlorantraniliprole (CTPR) last year. As a result, the company intends to build on this momentum and further capitalize on the marketâ€™s demand for effective insecticides. â€œWe expect sales of all CTPR formulations to be around â‚¹150 crore this year. CTPR is used on wide range of crops such as pulses groundnuts, soyabean, vegetables, rice, tea and sugarcane for insect control. Also, the companyâ€™s recently launched seed treatment product for groundnut and soyabean is getting good response,â€ commented Bhavesh.

Source: News article



Source: *News article; Facebook*

- **Insecticides India Ltd** is a public company which has over 1,400 employees and a network of 6,000 distributors. It sells to 70,000 retailers and dealers. In July 2023, it launched generic CTPR formulations labeled

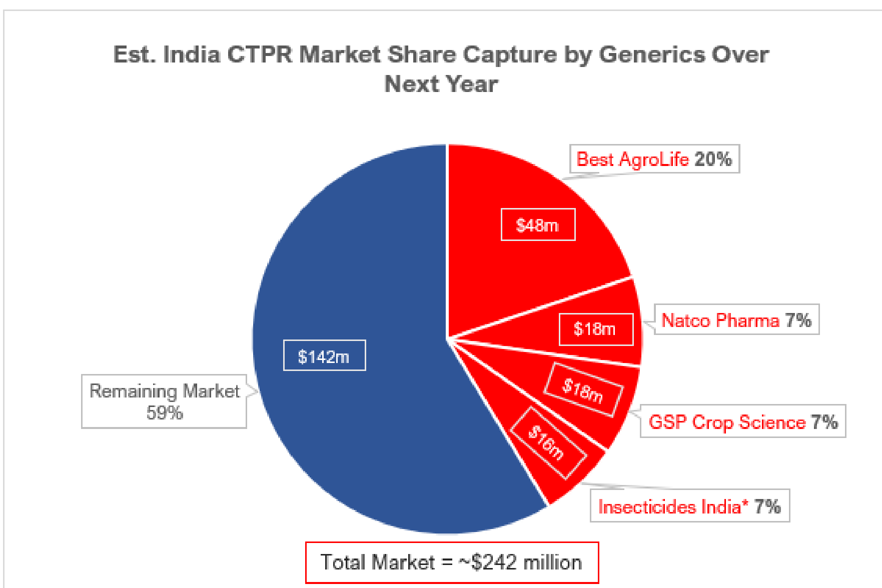
Mission and *Mission GR*. Insecticides India anticipates that the strength of these two CTPR products will vault it into an industry leader. As of February 2023, Insecticides India forecasted that the product will be in its top 6 selling products and that "**we will be targeting a big number out of this [CTPR] product**."

> **Rajesh Aggarwal:** We have -- difficult to talk about a couple of years. But this year, I would like to establish it as one of the key products. I kept this in the top 6 products of our list. So definitely, we'll be targeting a big number out of this product.

Source: *Earnings call transcript, February 2023*

Source: *Company website*

Yet, this small sample of just four new India CTPR competitors that we highlight above (Best Agrolife, Natco Pharma, GSP Crop Science, and Insecticides India Ltd.) are collectively forecasting almost **$100 million USD in sales over the next year**.[5] $100 million in generic sales implies that these competitors will take over 40-50% of FMC's CTPR market share in India over the next year. And these companies are merely the tip of the spear.



Source: Blue Orca

[5] Best Agrolife, Natco Pharma and GSP Crop Science collectively forecast ~$85 million USD in CTPR sales for the year. India Insecticide does not give a specific dollar amount in its forecast, but states that it is targeting a "big number." We therefore conservatively estimate that these four companies by themselves are forecasting almost $100 million in sales for the year, albeit there is some ambiguity whether each company's reference to "year" is intended to refer to its calendar year, fiscal year or the next twelve months.

These are just four examples of **hundreds** of Indian companies that recently registered CTPR products for manufacture, export, distribution and/or sale in late 2022 through present. Investors can inspect the publicly available minutes of the monthly meetings of the India Chemical Registration Committee that show that in March 2023 alone, the India Chemical Registration Committee considered CTPR registration applications for **hundreds** of formulations registered by approximately **several hundred Indian** companies.

In fact, there is so much new "post-patent products at competitive prices in the market" that India is expected to soon turn from being a net CTPR importer to a net CTPR exporter, meaning the flood of generics washing over India may soon reach other markets.

The stellar performance on the export front is due mainly to Indian industry's innovative technical capability to quickly introduce post-patent products at competitive prices in the market – domestic and global. Our scientists and engineers are among the best in the world. Here is an example: Chlorantraniliprole (CTPR) is the world largest selling insecticide with an estimated sale of Rs. 13,000 crores annually. Until last year India was importing this insecticide. Many Indian companies have now introduced indigenously manufactured CTPR in the market. This is expected to decrease its import into India and also make India an exporter of CTPR.

Source: News article, July 27, 2023

Contrary to FMC's claims, legal generics in India are here and are already taking market share from FMC. Not only will FMC lose sales, but we believe margins will be compressed as FMC is forced to lower prices to compete with generics.

In fact, this is exactly how the generic competition itself sees this situation playing out in India over the next few years. As stated by the CEO of Best Agrolife on a recent August 8, 2023 earnings call, "The price [of CTPR] was very high from [FMC] . . . As the domestic players are coming and manufacturing in India, **definitely cost is reduced and prices also are reducing**." But not according to FMC.

b) FMC also currently faces legal, low-priced competition in China.

Another central pillar of FMC's operation in Asia is China. While the country is smaller than India on a percentage of revenue basis, it accounts for approximately $100 million of FMC's annual revenue in 2022.[6] China is arguably the company's most important manufacturing region. Today, roughly 40-45% of FMC's manufacturing operations take place in China.[7] This means that the entry of generics in China not only impact FMC's China sales, but other regions as well as generic chemicals manufactured in China by competitors are legally exported or smuggled around the world.

FMC states that "**there are no current legal entrants"** in China, but our investigation indicates that this is flatly not true.[8] Similar to India, FMC is already facing, and will imminently face more, low priced legal generic competition in China.

FMC's legal competitors are already manufacturing, marketing, distributing and selling generic CTPR. What's more, the generic competition is selling at prices **80% below FMC's branded diamide product**.

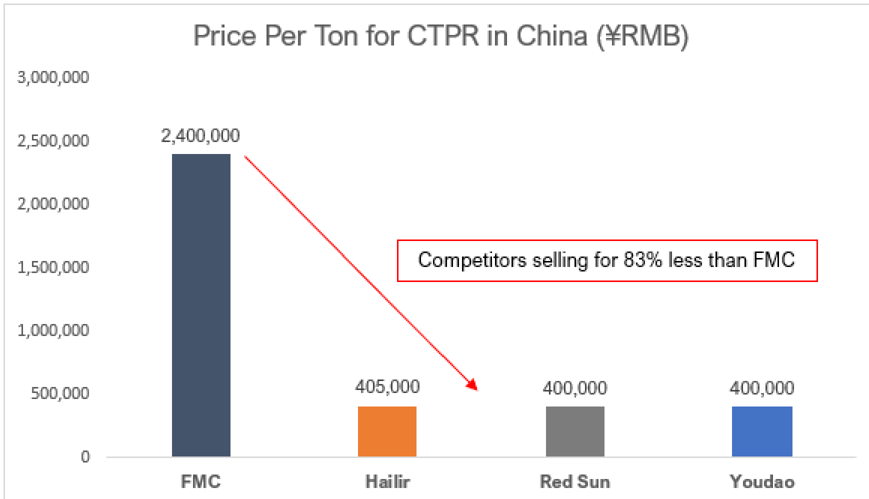
氯虫苯甲酰胺原药的国产化，对于制剂企业来讲，最直接的感受应该就是价格便宜了，从每吨240万元的价格到现在41万元左右的价格，对杀虫剂市场格局是具有颠覆意义的，超高性价比就是氯虫苯甲酰胺成为顶流的流量密码，那么最终的受益者肯定是广大的农民朋友。

For biologic companies, the most direct feeling of domestic production of chlorantraniliprole technical should be that the price is cheaper. The price decreased from RMB 2.4 million per ton to around RMB 410,000 per ton.

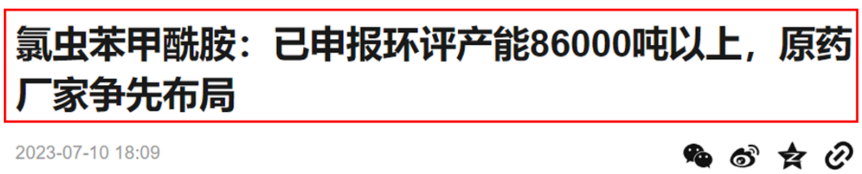
Source: Sino-Agri Leading Biosciences, July 7, 2023

[6] See FMC Corporation Presents at Citi's 2023 Global Industrial Tech and Mobility Conference, Feb-21-2023.
[7] See Investor presentation, March 2, 2022.
[8] Excerpted above from Goldman Sachs Industrials and Materials Conference, May 9-10, 2023

Similarly, as detailed below, we found current CTPR pricing offered by some of the top generic competitors in China. According to generic competitors we contacted, whereas FMC's branded CTPR sells for approximately RMB 2 million per ton, the three top generic competitors in China are currently offering much lower priced CTPR of RMB 405,000 per ton (Hailir); and RMB 400,000 per ton (Red Sun and Youdao). **And news articles suggest that more than 86,000 tons of generic CTPR are "rushing" to market**.



Source: Blue Orca



Chlorantraniliprole: The production capacity of more than 86,000 tons has been declared for environmental impact assessment. The technical material manufacturers are rushing to deploy

Source: [Sino-Agri Leading Biosciences, July 10, 2023]

In other words, in China, legal generic competition appears to be not only available to distributors and/or growers, but available for **80% below the price of FMC's branded CTPR product**. It is difficult to imagine any scenario where FMC can compete with generics at these levels while raising prices through Q4 2023.

Some examples of the competition for generic CTPR in China follows:

- **Hailir Pesticides and Chemicals Group** (CN:603639) is a China-national designated pesticide and fertilizer production company listed on the main board A-share of the Shanghai Stock Exchange, which employs more than 3,000 people, operates five chemical manufacturing facilities throughout China and exports product across the world. Hailir registered CTPR formulations in China and other Asia region countries in early 2023 shortly after FMC's patent expired.

PD20230277	Abamectin-aminomethyl+Chlorantraniliprole 甲维·氯虫苯	ME 微乳剂	4.5%	Insecticide 杀虫剂		Hailir Pesticides and Chemicals Group Co., Ltd. 海利尔药业集团股份有限公司	More 详情

Source: China Pesticide Registration Watch

Based on our conversation with the Company, Hailir is **currently** offering CTPR at a price of RMB 405,000 per ton.

- **Youdao Chemical Corporation** announced in October 2022 that its CTPR facility had passed a trial production stage and was gearing up to eventually produce 11,000 tons of CTPR per year. When its plant is finished, Youdao Chemical promises to have the **"largest production capacity, the most complete industrial chain and the most obvious competitive advantage in the world.**" Youdao Chemical's marketing materials expressly contemplate that it will successfully cut the cost of CTPR for farmers. As of May 2023, Youdao Chemical's Phase II construction of its new 10,000 ton per year CTPR plant is on track and is expected to be in commercial production by October 2023. Youdao stated that its CTPR product was priced at less than RMB 600,000 per ton last October and has now decreased to RMB 400,000 per ton.

Youdao Chemical Chlorantraniliprole Technical Formally Launched!

In late October 2022, Youdao Chemical's 1,000-ton/year chlorantraniliprole technical and 5,000-ton/year amine intermediate units successfully passed various trial production acceptance procedures and officially entered the trial production stage. So far, Youdao Chemical has become **the only compliant enterprise with industrial production capacity in China except the original patentee** .

Youdao Chemical's Phase II 10,000-ton/year technical equipment (adjusted from 5,000 tons/year to 10,000 tons/ year according to market conditions) and 8,000-ton/year K-acid intermediate plant have completed site leveling, and the pipeline network and road network are being laid . At that time, Youdao Chemical will become the manufacturer of chlorantraniliprole technical with **the largest production capacity, the most complete industrial chain and the most obvious competitive advantage in the world .**

The company's current product pricing **is less than 600,000 yuan/ton** . With the continuous extension of the industrial chain, the continuous optimization of technology and equipment, and the continuous expansion of production scale, the **cost and sales price will continue to decline significantly** , and ultimately benefit the majority of farmers.

Source: Youdao Press Release, October 31, 2022

- **Nanjing Red Sun** is a Chinese company that has also invested capital to manufacture generic CTPR. News articles and investor materials show that Red Sun and other companies are in the process of constructing facilities that will bring at least 4,000 tons/annum to market starting as early as the first half of this year. Red Sun in particular states that its annual 2,000 ton CTPR project is already put into production at the Wanzhou base in Chongqing and half of that tonnage is earmarked under a supply agreement. When asked, Red Sun said it is pricing its generic CTPR at RMB 400,000 per ton which, according to Red Sun, contrasts with FMC's branded CTPR product that sells for more than RMB 2 million per ton. **In short, Red Sun is selling generics at 80% below the price of FMC's branded product.**

问题 3：请介绍公司氯虫苯甲酰胺产品的行业优势？目前该项目的最新进展？

Question 3: Could you tell us about the advantages of the company's chlorantraniliprole products? Also, what are the latest developments regarding this project?

答：公司首期 2000 吨氯虫苯甲酰胺已在重庆万州基地开始试生产。氯虫苯甲酰胺杀虫剂作为第五代绿色环保农药中的翘楚，因杀虫谱广和应用作物多、杀虫活性高，持效期长、毒性低，安全性好等特点，近年来市场成倍增长，目前已成为雄踞全球市场销售额位居榜首的杀虫剂品种。公司氯虫苯甲酰胺产品由公司历经近十年攻关，拥有自主创新的技术，具有三大核心优势：

Answer: The company's initial 2,000 tons of chlorantraniliprole have already commenced trial production at the Wanzhou base in Chongqing.

（4）销售渠道优势：公司具备以国际贸易、农资连锁、农村云商为支撑的国际国内全方位的市场销售体系。同时积极加强对外合作，2023 年与中农立华生物科技股份有限公司签订《战略框架协议》，2023 年预计供应中农立华氯虫苯甲酰胺原药不少于 1000 吨，将对公司业绩将产生积极的影响。

In 2023, (Red Sun) expects to supply no less than 1000 tons of chlorantraniliprole technical material to Zhongnong Lihua, which will have a positive impact on the company's performance.

Source: Red Sun Investor Relations Activity Record Form, May 2023

Again, like India, these are only the tip of the spear. The China Pesticide Registration Watch database currently shows that 104 companies have registered 153 CTPR products and, notably, more than half of those products were registered in 2023, after FMC's patent expired in August 2022.

Excerpt (Screenshot) of China Registration Database (showing 13 of 153 rows of Registrations)

Certification No 登记证号 Total (153)	Product Name 登记名称 Total (25)	Formulation Type 剂型 Total (8)	Concentration 总含量	Category 类别 Total (3)	CAS 号码	Registrant 登记企业 Total (104)	More 详情
PD20230441	Chlorantraniliprole+Clothianidin 氯虫·噻虫胺	GR 颗粒剂	0.5%	Insecticide 杀虫剂		Qingdao Kaiyuanxiang. Chemical Co.,Ltd. 山东省青岛凯源祥化工有限公司	More 详情
PD20230477	Chlorantraniliprole 氯虫苯甲酰胺	SC 悬浮剂	200g/L	Insecticide 杀虫剂	500008-45-7	Jiangsu Rotam Chemistry Co., Ltd. 江苏龙灯化学有限公司	More 详情
PD20230497	Abamectin+chlorantraniliprole 阿维·氯苯酰	SC 悬浮剂	5%	Insecticide 杀虫剂		BrightMart CropScience Co.,Ltd 佛山市盈辉作物科学有限公司	More 详情
PD20230386	Chlorantraniliprole 氯虫苯甲酰胺	GR 颗粒剂	1%	Insecticide 杀虫剂	500008-45-7	Shandong Great Farm Pharmaceutical Co., Ltd. (DNP) 山东大农药业有限公司	More 详情
PD20230409	Chlorfenapyr+Chlorantraniliprole 虫螨腈·氯虫苯甲酰胺	SC 悬浮剂	38%	Insecticide 杀虫剂		China Kingdom Agritech (Qingdao) Co., Ltd 青岛中达农业科技有限公司	More 详情
PD20230415	Abamectin+chlorantraniliprole 阿维·氯苯酰	SC 悬浮剂	10%	Insecticide 杀虫剂		Shan'Xi Xiannong Biology Science Co.,Ltd. 陕西先农生物科技有限公司	More 详情
PD20230342	Abamectin+chlorantraniliprole 阿维·氯苯酰	SC 悬浮剂	12%	Insecticide 杀虫剂		安徽辉隆集团银山药业有限责任公司 安徽辉隆集团银山药业有限责任公司	More 详情
PD20230348	Chlorantraniliprole+Lufenuron 氯虫苯·虱螨脲	SC 悬浮剂	15%	Insecticide 杀虫剂		China Kingdom Agritech (Qingdao) Co., Ltd 青岛中达农业科技有限公司	More 详情
PD20230356	Abamectin-aminomethyl+Chlorantraniliprole 甲维·氯虫苯	SC 悬浮剂	11.6%	Insecticide 杀虫剂		Anhui Huaxing Chemical Industry Co., Ltd. 安徽华星化工有限公司	More 详情
PD20230358	Chlorantraniliprole+Indoxacarb 氯虫苯甲酰胺·茚虫威	SC 悬浮剂	20%	Insecticide 杀虫剂		JIANGSU DONGNAN PLANT PROTECTION CO., LTD 江苏东南植保有限公司	More 详情
PD20230372	Chlorantraniliprole+Monosultap 氯虫苯·杀虫单	SC 悬浮剂	22%	Insecticide 杀虫剂		Anhui Huaxing Chemical Industry Co., Ltd. 安徽华星化工有限公司	More 详情
PD20230276	Abamectin+chlorantraniliprole 阿维·氯苯酰	SC 悬浮剂	18%	Insecticide 杀虫剂		Shandong Hailir Chemical Co.,Ltd. 山东海利尔化工有限公司	More 详情
PD20230277	Abamectin-aminomethyl+Chlorantraniliprole 甲维·氯虫苯	ME 微乳剂	4.5%	Insecticide 杀虫剂		Hailir Pesticides and Chemicals Group Co., Ltd. 海利尔药业集团股份有限公司	More 详情

Source: China Pesticide Registration Watch website

The problem of generic competition from Chinese manufacturers extends far beyond the borders of the PRC. Cut priced generics manufactured in China will not only undercut FMC's branded product in the Chinese market, but will be exported (legally or illegally) to markets around the world.

For example, a March 2023 news article discusses that Chinese company, **Hailir**, registered a CTPR formulation in Australia and states that it is aggressively promoting its overseas business in 13 different counties. Similarly, as discussed in Section III below, Indian company **GSP Crop Science** and Chinese company **Rainbow Agro** are examples of Asian companies that have applied for registration of CTPR products in Brazil. Likewise, this August

2023 article discusses that another Indian company, **Agrow Allied**, began manufacturing CTPR and recently registered its CTPR formulation in the EU.

In summary, between India and China, there is abundant evidence that generic competitors are forecasting to take hundreds of millions of dollars in CTPR diamide sales by, in part, flooding the market with cut rate priced generics at a fraction of FMC's higher cost branded product.

We think this will not only be devastating to FMC's sales, but margins as well. FMC tells investors that it plans to **raise prices in the back half of 2023**, yet the competition from generics has **already pushed prices down in key markets**. For FMC, the situation is simply untenable.

Without patent protection in its key markets of India and China, and battling a flood of capable generics, we believe that FMC's revenues, margins and cash flows are set to decline precipitously. As a result, we believe that an investment downgrade is likely, cutting off FMC's access to cheap commercial paper and sending the Company further down a spiral of increasingly punitive borrowing, falling revenues and plummeting profits.

II. Generics Poised to Enter Brazilian Market in "Crisis"

Brazil is FMC's single largest market, **accounting for 28% of FMC's $5.8 billion in FY 2022 revenue**. Brazil is critical to the Company's future, as the country's tropical and subtropical climate create more growing seasons than most countries, and its large land area and diverse climate zones mean that some part of the country is always in a growing season.

In August, FMC released Q2 2023 earnings showing a severe 38% YoY drop in LatAm revenue, as sales in the region were devastated by a glut of inventory clogging the channel. FMC guides that revenues will recover in the second half of the year, and even tells investors that despite a major volume drop it expects to *raise prices* in Brazil in 2023.

We think such posturing is laughable, and that FMC's financial performance in Brazil will continue to significantly worsen, despite FMC's quixotic ambition to raise prices. Specifically, we believe that FMC continues to mislead investors regarding the imminent arrival of new generic competition for its diamide franchise in Brazil. FMC management tells investors that generic competition in Brazil will not happen before Q3 2026, but our investigation shows that in the **past few months**, generics competitors have made major progress to garner regulatory approval to bring competing CTPR to market.

Undisclosed to investors, two of the three required Brazilian government agencies recently approved generic CTPR products. The third agency was on the cusp of ruling when in late July 2023, FMC filed a last-minute petition, begging the judge to delay the proceedings. As we go to press, the Brazilian courts are deciding the motion, but our read is that generic competition could potentially arrive in Brazil shortly, perhaps **within months or even weeks from now**.

Generic competition could not come at a worst time, FMC also faces a Brazilian agrochemical market contraction so severe that one expert described the market in 2023 as a "big crisis." Weakening demand has also undermined customer creditworthiness, forcing FMC to factor and securitize receivables in Brazil at massive discounts in order to shore up Company cash. Adding to the trouble, with CTPR patent protection eroding in China and India in late 2022, we think there is evidence that black market diamide products will flood into Brazil, smuggled illegally from neighboring Paraguay and Uruguay. We believe that together, this confluence of crises will devastate FMC's sales and margins in its largest market.

1. Recent Undisclosed Legal Setbacks Leave FMC's Protection in Brazil Hanging by a Thread

FMC promises investors that there can be no generic competition in Brazil any earlier than **September 2026**. FMC states that it has successfully enjoined Brazilian regulators from acting on the registration applications of its generic competitors on the dubious grounds that Brazilian law indefinitely prohibits generics from the using its data.

> On the current Brazilian regulatory practices, a third party can apply for registration before the patents have expired. However, Brazil has a law protecting the exclusive use of initial registrant's data for a period of time after the initial registration. FMC believes that any company that files for registration during the period of our continued data exclusivity falls foul of this Brazilian law.
>
> We have initiated a legal process with the Brazilian regulatory authorities to have FMC's data exclusivity respected. Taking this into account, it means first competitive sales of chlorantraniliprole will not occur before September 2026.

Source: Earnings Call, Q2 2019; Earnings Call and Presentation, Q2 2021

We think that this is blatantly false and misleading, and that FMC has concealed from investors that it may be on the cusp of **imminent defeat** in Brazilian courts. In 2021, FMC was quick to brag to investors when it obtained an injunction against Brazilian regulators to postpone action on all generic applications. Yet to our knowledge, it has never updated investors on the current status of that litigation now that it has turned against FMC.

Specifically, FMC has failed to disclose that the Brazilian courts recently ruled against FMC's claim that data exclusivity should continue to delay the registration of generics. As a result, in the last few months, **two of the three required Brazilian government agencies recently approved generic CTPR diamide products**. Indeed, it appears that the only thing standing between FMC and generic competition in Brazil is FMC's eleventh-hour "**urgent**" motion for reconsideration that FMC filed in the Brazil federal court on July 26, 2023, in a lawsuit to which FMC was not even a party. Absent the unlikely event that a Brazilian federal court reconsiders and reverses court rulings, we believe that generic competition stands ready to launch immediately.

Brazil has data exclusivity laws that prevent a generic competitor, *for a period of time*, from registering its generic product with the three relevant Brazilian regulators, ANVISA (health and safety), IBAMA (environmental), and MAPA (efficacy for agriculture) (all three collectively referred to hereafter as the "Brazilian Regulators").[9] In June 2019, one of the world's largest chemical crop protection providers, Chinese company Rainbow Agro ("Rainbow"), applied for registrations of generic CTPR formulations with the Brazilian Regulators. FMC initially successfully blocked this registration, claiming it held data exclusivity.

But over three years later, on August 29, 2022, Rainbow sued the Brazilian Regulators in federal court in Brazil arguing that (a) FMC's data exclusivity period expired; (b) Rainbow's registration applications have been pending for over three years and two months; and (c) under any interpretation of any laws governing the duties of the Brazilian Regulators, any potential deadline for the Brazilian Regulators to act on Rainbow's applications had also expired.[10] In essence, FMC is claiming that generic competitors like Rainbow must wait at the back of the registration queue whereas Rainbow argues that sufficient time has passed such that, under Brazilian law, registration of Rainbow's generic CTPR is now ripe for regulatory review and approval.

The Court agreed with Rainbow and on September 16, 2022, ordered the Brazilian Regulators to finally act on Rainbow registration applications. After much legal wrangling, by April 6, 2023, MAPA had completed its evaluation, and by **July 19, 2023** ANVISA completed its evaluation, published in the public record.

(*Original Portuguese*)

RESOLUÇÃO-RE Nº 2.592, DE 13 DE JULHO DE 2023

A Gerente-Geral substituta de Toxicologia, no uso das atribuições que lhe confere o art.114, aliado ao art. 203, I, § 1º do Regimento Interno aprovado pela Resolução de Diretoria Colegiada - RDC nº 585, de 10 de dezembro de 2021, resolve:

Art. 1º Aprovar os atos de avaliação toxicológica de produtos agrotóxicos, componentes e afins, identificados no anexo, com o respectivo resultado da análise, em cumprimento a Decisão Judicial (1056475-07.2022.4.01.3400 - 1ª Vara Federal Cível da SJDF - NUP: 00424.225662/2022-23 - Autor(a): RAINBOW DEFENSIVOS AGRÍCOLAS LTDA.) que determinou que a Anvisa procedesse a avaliação toxicológica do produto CLORANTRANILIPROLE TÉCNICO RAINBOW.

Art. 2º A publicação do extrato deste informe de avaliação toxicológica não exime a requerente do cumprimento das demais avaliações procedidas pelos órgãos responsáveis pelas áreas de agricultura e de meio ambiente, conforme legislação vigente no país, aplicável ao objeto do requerimento.

Art. 3º Esta Resolução entra em vigor na data de sua publicação.

DANIELLE CHRISTINE DE SOUZA FILADELPHO

ANEXO

(*English Translation*)

RESOLUTION-RE No. 2,592, OF JULY 13, 2023

The Deputy General Manager of Toxicology, in the use of the attributions conferred by art. 114, combined with art. 203, I, § 1 of the Internal Regulations approved by the Resolution of the Collegiate Board of Directors - RDC No. 585, of December 10, 2021, resolves:

Art. 1 Approve the acts of toxicological evaluation of pesticides, components and the like, identified in the annex, with the respective result of the analysis, in compliance with the Judicial Decision (105XXXX-07.2022.4.01.3400 - 1st Federal Civil Court of the SJDF -NUP : 00424.225662/2022-23 - Plaintiff: RAINBOW DEFENSIVOS AGRÍCOLAS LTDA.) which determined that Anvisa proceeded with the toxicological evaluation of the product CLORANTRANILIPROLE TÉCNICO RAINBOW.

Art. 2 The publication of the extract from this toxicological evaluation report does not exempt the applicant from complying with the other evaluations carried out by the bodies responsible for the areas of agriculture and the environment, in accordance with the legislation in force in the country, applicable to the object of the application.

Art. 3 This Resolution enters into force on the date of its publication.

Source: Federal Official Gazette

ANVISA's approval of the generic application was reported in Brazil industry news sources during the following days.

(*Original Portuguese*)

Agrochemical Update Brasil & América Latina – 19/07/2023

PESTICIDES, FERTILIZER

Agrochemical Update Brasil & América Latina

Em cumprimento a **decisões judiciais**, Anvisa aprova avaliação toxicológica dos agrotóxicos clorantraniliprole técnico (Rainbow), picloram (Rainbow), e atrazina + mesotriona + S-metolacloro (Rainbow); bifentrina + sulfoxaflor (Adama); glufosinato sal de amônio (Alta); glifosato sal de dimetilamina (Proregistros); e flumioxazina (CHDS). (Anvisa)

(*English Translation*)

Agrochemical Update Brasil & América Latina – 19/07/2023

PESTICIDES, FERTILIZER

Agrochemical Update Brasil & América Latina

In compliance with **court decisions**, Anvisa approves toxicological evaluation of the pesticides chloranthraniliprole technical (Rainbow), picloram (Rainbow), and atrazine + mesotrione + S-metolachlor (Rainbow); bifenthrin + sulfoxaflor (Adama); glufosinate ammonium salt (Alta); glyphosate dimethylamine salt (Proregistros); and flumioxazine (CHDS). (Anvisa)

Source: *AgriBrasilis Update*

At this point **FMC appears to have panicked**. After approval by two of the three key Brazilian Regulators, only IBAMA's environmental review and approval would be needed before Rainbow and other companies could begin to

[9] See here for a summary of the specific oversight duties of each of the three relevant Brazilian regulators.
[10] *See* Case # 1056475-07.2022.4.01.3400, *Rainbow Defensivos Agricolas LTDA v. ANVISA et al*. (filed 8/29/22)

manufacture, market, and sell generic CTPR in Brazil. On **July 26, 2023**, FMC quickly filed with the Brazil federal court an **urgent request** to join Rainbow Argo's litigation against the Brazilian Regulators. FMC filed a motion for **reconsideration and emergency relief**, admitting that "MAPA and ANVISA have already concluded their respective analyses and now the request is with IBAMA for the issuance of evaluation."

(Original Portuguese)

EXCELENTÍSSIMO SENHOR DOUTOR JUIZ FEDERAL DA 1a VARA DA SEÇÃO

JUDICIÁRIA DO DISTRITO FEDERAL

URGENTE - CONFLITO ENTRE DECISÕES - NECESSIDADE DE RECONSIDERAÇÃO DA TUTELA PROVISÓRIA DE URGÊNCIA PELA AUSÊNCIA DE PROBABILIDADE DO DIREITO - A CONDIÇÃO DA TUTELA RECURSAL DO CASO DA FMC AINDA NÃO FOI IMPLEMENTADA - A FILA DE PLEITOS DE REGISTRO DE PTE AINDA ESTÁ EM 2017, CONFORME JÁ DEMONSTRADO PELO MAPA NESTES AUTOS (ID. (00)00000-0000)

Processo nº XXXXX-00.0000.0.00.0000

FMC Química do Brasil Ltda. , sociedade limitada inscrita no CNPJ/MF sob o nº 00.XXXXX/0000-00, com sede na Endereçoº andar, EndereçoCEP: 00000-000(Doc. 01), e FMC Agro Singapore , sociedade estrangeira, com sede em 10 Marine Boulevard, 40-01 Marina Bay Financial Centre Tower 2, Singapura (Doc. 02) (em conjunto, "FMC" ou "Autoras"), por seus advogados (Doc. 03), nos autos da ação ordinária ajuizada pela Rainbow Defensivos Agrícolas Ltda. ("Rainbow" ou "Autora") contra a Agência Nacional de Vigilância Sanitária - ANVISA, o Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis - IBAMA e a União Federal [Ministério da Agricultura, Pecuária e Abastecimento - MAPA] (em conjunto, "Réus"), vem, com fundamento nos artigos 119 9 9 9 e 1244 4 do Código de Processo Civil 1 1 ("CPC"), apresentar PEDIDO DE ASSISTÊNCIA LITISCONSORCIAL em favor dos Réus, pugnando pela IMPROCEDÊNCIA total dos pedidos formulados pela Autora na petição inicial e requerendo, desde já, a RECONSIDERAÇÃO da decisão de tutela provisória de urgência e, consequentemente, de decisões que determinem seu cumprimento (ID. (00)00000-0000, ID. (00)00000-0000e ID. (00)00000-0000).

(*English Translation*)

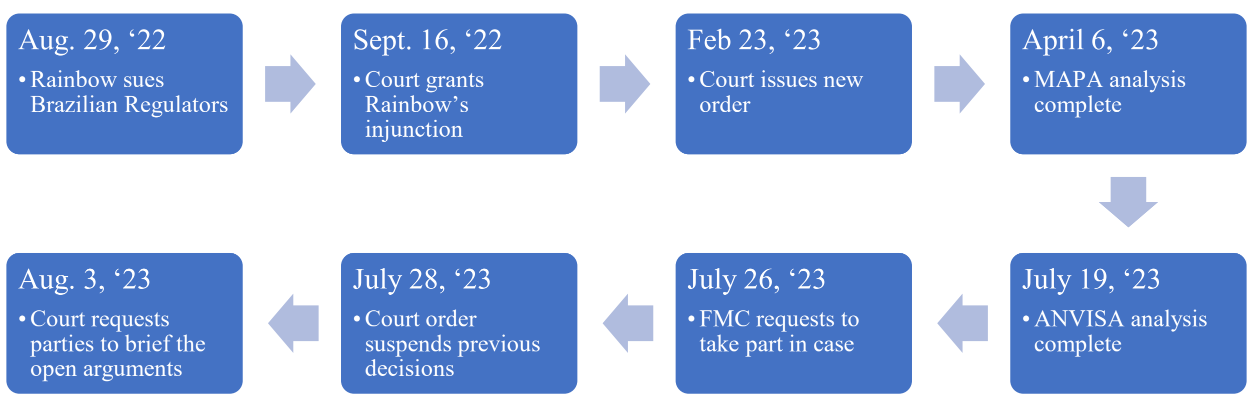
HONORABLE FEDERAL JUDGE OF THE 1ST COURT OF THE SECTION
JUDICIARY OF THE FEDERAL DISTRICT
URGENT - CONFLICT BETWEEN DECISIONS - NEED FOR RECONSIDERATION OF THE PROVISIONAL GUARDIANSHIP OF URGENT DUE TO THE ABSENCE OF PROBABILITY OF THE RIGHT - THE CONDITION OF THE APPEAL GUARDIANSHIP OF THE FMC CASE HAS NOT YET BEEN IMPLEMENTED - THE QUEUE OF PTE REGISTRATION CLAIMS IS STILL IN 2017, AS ALREADY SHOWN BY THE MAP IN THESE FILES (ID.**(00)00000-0000)***

Process No.0000000-00.0000.0.00.0000
FMC Chemicals of Brazil Ltda. , a limited liability company registered with the CNPJ/MF under No.00,000,000/0000-00, based inAddressth floor,AddressZIP CODE:00000-000(**Doc. 01**), and **FMC Agro Singapore** , a foreign company, headquartered at 10 Marine Boulevard, 40-01 Marina Bay Financial Center Tower 2, Singapore (**Doc. 02**) (jointly, "FMC" or "Plaintiffs"), by its lawyers (**Doc. 03**), in the records of the ordinary action filed by **Rainbow Defensivos Agrícolas Ltda.** ("Rainbow" or "Plaintiff") against the **National Health Surveillance Agency - ANVISA** , the **Brazilian Institute of the Environment and Renewable Natural Resources - IBAMA** and the **Federal Union [Ministry of Agriculture, Livestock and Supply - MAPA]** (jointly , "Defendants"), come,9 9 and 124 4 4 of the Code of Civil Procedure ll (" CPC "), submit **a REQUEST FOR LITISCONSORTIAL ASSISTANCE** in favor of the Defendants, fighting for the total **DISMISSAL** of the requests made by the Plaintiff in the initial petition and requesting, from now on, the **RECONSIDERATION** of the decision of provisional emergency relief and, consequently, of decisions that determine its compliance (ID.(00)00000-0000, id.(00)00000-0000and ID.(00)00000-0000).

Source: *Brazil federal court pleading*

That motion remains pending, for the moment at least, in the Brazil federal court system. The current status is that the court has given all the **parties 15 days from August 3, 2023,** to brief the open arguments.[11] FMC's motion appears to be a mere stall tactic, as we struggle to see much, if any, colorable FMC argument.

Indeed, to be sure of FMC's desperation here, simultaneous to its recent pesticide registration litigiousness, in recent weeks FMC also decided to reinvoke an administrative appeal of a trademark violation case that it already brought and lost against Rainbow in 2018. In our view, FMC's imminent defeat is not only a possible outcome, but a likely outcome.



Source: *Timeline of major case developments built from Brazilian Court Records*

[11] This includes potential briefing on the topics of the (a) the court's order granting Rainbow Argo's request to cause the Brazilian Regulators to evaluate Rainbow's registration applications; (b) whether FMC even has standing as a non-party to Rainbow's litigation against the Brazilian Regulators; and (c) whether Rainbow's case is at all relevant to FMC's earlier injunction case from 2021 given that FMC's data exclusivity period already lapsed years earlier.

Yet, to our knowledge, FMC has never disclosed to investors that the only thing standing between it and a flood of generic competition for its most important product in its most important market is FMC's desperate **urgent request** for an eleventh-hour reversal that appears to us to be borderline groundless.

To the contrary, on August 2-3, 2023, FMC released 2Q 2023 earnings and conducted its quarterly earnings conference call, but FMC did not disclose any of these seemingly material events to investors. Instead, FMC allows investors to continue to believe that Brazil will be free from generic competition until Q3 2026 at the earliest. Admittedly, legal cases, especially in countries like Brazil, are often subject to delay. Nor can anyone predict, with certainty, how a court will decide. Yet the developments in the last two months suggest that the outlook for generic approval has clearly and materially changed, but the Company's representations to investors have not.

Competitors apparently agree. Recently, low-priced generic CTPR competitors beyond just Rainbow announced plans to enter the Brazilian market. Additionally, according to customs records on *TradeSparq*, Natco Pharma, FMC's generic competitor in India, recently shipped small amounts of CTPR to another competitor in Brazil, which we think is a precursor to entering the market.

GSP Crop Science Expands into Brazil to Target Latam Markets

By **Chemical Industry Digest** - June 20, 2023

GSP Crop Science Pvt Ltd, an agrochemical manufacturer, has established a new subsidiary in Brazil with the aim of expanding its presence in the Latin American (Latam) market. Recognising the significant potential in this region, the company plans to invest approximately $2-3 million in its Brazilian operations.

Thirth Shah, the International Business Director of GSP Crop Science, expressed that the company has initiated the formation of a dedicated team in Brazil and intends to pursue a vigorous expansion strategy in the country. With farm holdings of considerable size, the agrochemical market in Brazil is estimated to be valued at approximately $14 billion.

Source: News Article

Exporter	importer	Description	Origin Country	Origin Port	Destination Country	Destination Port	Date
NATCO PHARMA LIMITED	OURO FINO QUIMICA S.A	Detail - 20KGS - $6,300 *chlorantraniliprole* technical - appendix4r rodtep entry no 2300 rodtep rate:0.80% (other reference(s) ci no:252203)	India	Hyderabad Acc Inhyd4	Brazil	Guarulhos	Mar 8, 2023

Source: TradeSparq

Given the size and value of the Brazilian diamide market, it is no surprise that well capitalized industry heavyweights are pushing hard in Brazilian courts to register generic products. In light of FMC's recent reversal and the approval of generic product by two of the three Brazilian regulators, we believe that it is absurd for FMC to continue to claim that generics will not compete with flagship diamides in Brazil before September 2026. Rather, the court proceedings suggest that generic competition for CTPR could be imminent.

2. FMC Brazil Is in a "Big Crisis."

A flood of generic competitors could not come at a worse time for FMC in Brazil, where FMC is already facing market conditions so onerous that an expert described it as a "big crisis," making a mockery of FMC's guidance to investors that it expects a recovery in the second half of 2023.

In the opinion of several industry experts (including a former FMC executive and also a current financial executive of UPL, an FMC partner in Brazil) from 2020-2022 FMC LatAm greatly benefitted from "very unusual" external events that artificially boosted the whole crop protection industry's growth in volume, price, revenue and margins. During 2023, however, the confluence of events propelling growth abruptly and starkly reversed.

Specifically, we spoke to a current senior finance executive at UPL in Brazil. UPL is FMC's key strategic partner licensed to sell diamides in Brazil and other countries. The UPL finance executive explained that the crop protection market in Brazil grew from $12 billion to $21 billion *in the last three years*. He explained that this growth was "very unusual" and resulted because of shortages caused by a perfect storm of COVID, China supply chain disruptions, labor shortages, the Russia/Ukraine war, and supply chains permanently migrating away from China. He explained that these events caused crop protection product shortages that caused prices to skyrocket and, at the same time, distributors and cooperatives scrambled to over-purchase whatever they could because of fear of prolonged supply shortages.

> *Actually, it's been kind of an awkward season because last year the size of the market was $21 billion. In 2021, the size of the market was $16 billion and in 2020 it was $12 billion. The market grew exponentially, mostly because of the pandemic times and the Ukraine and Russia war. . . . So that's why the market grew so fast because of the price and also because there was a lack of supply. So the distributors, the cooperatives, they were buying much more than expected.*
>
> *--Current UPL Brazil Finance Executive*

Today, however, the confluence of factors that almost doubled the size of the agricultural chemical market have reversed, creating a "big crisis" of downward pressure on the Brazilian market. The crop protection industry in 2023 is facing a **"big crisis"** because supply shortages have dissipated, and prices have cratered and will continue to crater throughout the year. The UPL senior finance executive explained that it is going to be a **"very difficult year"** and the size of the industry in Brazil is going to **drop all the way back to 2021 levels**.

> *The [earlier three years] **created a big crisis in 2023** because everybody has a very big stock, a very big inventory of products. The prices are going down. . .. So it's a very uncommon situation. And the market now is to go back to the $16, $17 billion level, which is the same level of 2021. And that's because a lot of the buyers are not going to increase the inventory until they consume everything. . . . So, in the end of the day, it's been a very difficult year.*
>
> *-- Current UPL Brazil Finance Executive*

According to the former FMC executive with whom we spoke, Brazilian crop protection customers in 2023 understand now that there is no supply shortage, and they are demanding to negotiate lower prices and product returns and rebates.

> *The customers [in 2023] understood that there was not a lack of products. . .. You can see today in 2023 that the prices are dropping significantly compared to 2022. All the inventories that the companies have in the market today, they are doing some negotiations in order to make prices more suitable. So they had to do something to balance those things.*
>
> *--Former FMC Brazil Executive*

Worse, according to the UPL finance executive, the full scope of the price impact has yet to manifest. He stated that the industry will not start to feel the full pain of the lower prices until July-September, when the soybean growing season starts because that is the most voluminous crop in Brazil.

> *We're going to be able to see better the market within a couple of months because now it's the season when the soybeans start to be planted. And soybeans are the grain that has majority of the area in Brazil. It's almost half of the planted area in Brazil is soybean. Then we have corn, cotton, you can have coffee and some other minor cultures. So, we're going to be able to see between July, August and September.*
>
> *--Current UPL Brazil Finance Executive*

FMC has suggested in the past that it is immune from this type of deflationary shock to its pricing because it sells specialty products for specialty crops to risk adverse buyers, thus making prices "sticky." FMC would no doubt argue that for this reason, neither its products generally, nor its diamides specifically, will suffer along with the broader industry. **The experts we interviewed disagree that FMC** can continue to raise prices as high as it needs to cover volume shortfalls and still make whatever margin it so chooses.

In fact, the former FMC executive we interviewed suggested that **FMC will suffer worse than other companies in Brazil** because FMC is losing patent protection on its diamide portfolio at the same time that prices are independently crashing.

Moreover, according to the UPL finance executive, the price pressure started with herbicides, but distributors are so severely oversupplied and in such financial straits that they are requesting price "normalization" across all crop protection product lines, including insecticides and specialty products. He stated one distributor was even on the verge of bankruptcy and "we can see that [price pressure] problem for all the products."

In summary, FMC already lowered revenue and EBITDA guidance for LatAm (along with North America and EMEA) citing channel inventory problems and resulting reduced volumes, despite strong grower demand. In our view, there is overwhelming evidence that there is another shoe to drop. Management claims that prices are sticky, but the market appears to already be in deep crisis without even considering the imminent entry of generic CTPR into the market.

3. Ballooning Receivables and Deteriorating Customer Creditworthiness Further Evidence of "Crisis" in Brazil

FMC's imminent loss of patent protection in Brazil, which we believe will precipitate the near-term entry of generic competitors, could not come at a worse time for FMC in its most important market. Not only were Latin America sales – of which, Brazil makes up the largest percentage - down almost 38% YoY in Q2 2023 due to an inventory glut, **but an increasing balance of receivables, customer defaults and bankruptcies, and FMC's decision to factor receivables at increasingly punitive rates all portend an increasingly dire market outlook in FMC's most important country**.

As of June 2023, FMC's total receivable balance hit $2.8 billion. According to Company disclosures a substantial portion of the trade receivables comes from Brazil. This poses a risk to the Company, as FMC cautions in its disclosures that in Latin America, and specifically Brazil, payment terms often exceed 360 days.

> *We do not typically give payment terms that exceed 360 days; however, in certain geographical regions such as Latin America, these terms may be given in limited circumstances.*
>
> *Collection timing is more pronounced in certain countries such as Brazil where there may be terms significantly longer than the rest of our business.*

Source: FMC Corporation FY 2022 10-K

FMC even warns that collections is particularly challenging in Brazil, where payment terms for trade receivables are "measured in months," rather than the standard weeks.

The Brazilian receivables situation has become such a challenge that in an effort to move receivables off the balance sheet and bring in quick cash, FMC has begun selling receivables at a steep discount through both a non-recourse factoring and a non-recourse securitization facility. Although FMC does not admit, to our knowledge, what kind of haircut it takes to factor or securitize or factor receivables in Brazil, given that Brazilian interest rates are over 14%; receivables take over a year to pay; and the receivables are owed by customers in an industry that brings inherent credit risk, we estimate that FMC is taking at least a 16-20% haircut on each securitization or factoring transaction. There is evidence to support this estimate.

In Q3 2022, FMC entered into a trade receivables securitization program in Brazil, an agreement that exchanges rights to FMC's trade receivables to an investment vehicle in exchange for cash. For selling $105 million in trade receivables to the fund, FMC received approximately $75 million in cash, and that "approximately $19 million on the sale was retained by the securitization fund and is recognized as a non-cash investing activity." That's $105 million in receivables for which FMC are receiving **about 70 cents on the dollar in cash**.

FMC continues to sell receivables at a fraction of their full value. In H1 2023, the Company sold an additional $67.5 million in Brazilian receivables into the securitization facility. That's a total of $172.5 million of Brazilian receivables over a 12-month period presumably sold at a deep discount.[12]

Fund documents show at least one apparent default already by a debtor in the receivables fund. According to a June 28, 2023 document, credit holders agreed to hire lawyers to represent the Fund in the "reorganization" of one of the debtors, Agrocomercial Sandri Ltda.

Original Portuguese

4. ORDEM DO DIA E DELIBERAÇÕES:

I - Exame e aprovação das contas e das demonstrações financeiras, das notas explicativas e do parecer dos auditores independentes do Fundo, relativo ao exercício social findo em 31 de dezembro de 2022.

Após os esclarecimentos necessários, os Cotistas **aprovaram**, sem quaisquer ressalvas, as contas prestadas pela Administradora, as demonstrações financeiras, as notas explicativas e do parecer dos auditores independentes, relativa ao exercício social findo em 31 de dezembro de 2022.

II - Contratação do escritório Gentil Monteiro, Vicentini, Beringhs, Gil e Joels Sociedade de Advogados, inscrito no CNPJ sob o 22.604.829/0001-36, para representar o Fundo no processo de recuperação judicial do devedor AGROCOMERCIAL SANDRI LTDA, CNPJ sob o nº 79.658.134/0001-54, nos termos do artigo 18.4 do Regulamento do Fundo.

English Translation

4. AGENDA AND DELIBERATIONS:

I - Examination and approval of the accounts and financial statements, the explanatory notes and the opinion of the Fund's independent auditors, for the fiscal year ended December 31, 2022.

After the necessary clarifications, the Quotaholders **approved**, without any reservations, the accounts provided by the Administrator, the financial statements, the explanatory notes and the opinion of the independent auditors, for the fiscal year ended December 31, 2022.

II - Hiring of Gentil Monteiro, Vicentini, Beringhs, Gil e Joels Sociedade de Advogados, registered with the CNPJ under 22.604.829/0001-36, to represent the Fund in the judicial reorganization process of the debtor AGROCOMERCIAL SANDRI LTDA, CNPJ under No. 79.658.134/000154, pursuant to Article 18.4 of the Fund's Regulations.

Source: Finaxis Investment Fund in FMC Credit Rights, Minutes 6/28/23

Notably, the fund's June 2023 shareholder report reflects this default, showing a R$43.3 million decline in total shareholder value – equivalent to **about $8.85 million** – between May 2023 and June 2023.

Patrimônio Líquido do FIDC:		Patrimônio Líquido jun/23	Patrimônio Líquido mai/23	Patrimônio Líquido abr/23	Patrimônio Líquido mar/23
	TOTAL	517.733.101,77	561.010.384,49	553.545.494,10	547.021.767,71

Source: Finaxis Investment Fund in FMC Credit Right, June Monthly Report

The default of a customer and the presumptive write off of the receivables in the securitization fund is, in our opinion, a harbinger of the declining creditworthiness of FMC's Brazilian customers.

In addition to selling receivables through a securitization facility, the company also began factoring receivables last year. FMC states that it factored $58 million in receivables in 2022, a number that increased three-fold to **$155 million** in just the first 6 months of 2023. While the Company doesn't specify in which regions they are factoring, with a growing interest rate environment – particularly in key countries such as Brazil, which has a nearly 14% interest rate – plus the few percentage points a factoring third-party takes on top of the base funds rate, we believe it is reasonable to assume that FMC is taking a major haircut on revenue by factoring these receivables.

FMC's factoring and securitization of receivables at steep discounts raises serious questions for investors. How likely is impairment in the rest of FMC's Brazilian receivables? Why is FMC taking a substantial haircut to receivables when it uses the cash to pay a dividend and buy back stock?

As factoring and sales to the securitization facility moves receivables off the balance sheet and replaces it with cash, these actions obscure the Company's true financial health. Looking at FMC's cash flows from operations over the

[12] It's also important to note that FMC's $19 million "retained by the securitization fund" is by no means a guaranteed return. Within the Fund, credit holders are placed into two investment tranches, subordinated and senior. Considering investment into the senior tranche of the Fund was made through public offering, we believe that FMC's retained $19 million was almost certainly making up the subordinated tranche. The fact that the initial investment of the subordinated tranche was R$100 million in September 2022 and the BRL to USD conversion rate was $0.1934, confirms that FMC accounts for essentially the entire subordinated tranche. As such, the Company is more exposed to these potential defaults as they would be subordinate to the senior bond holders.

last calendar year since factoring began, FMC's already poor cash flow situation would be even more disastrous if the Company had not sold these receivables at a steep discount. For example, rather than reporting a $55 million increase in cash for FY 2022, with the factored receivables added back-in, the Company would have instead experienced a $97 million decrease in cash for FY 2022.

Selling and Factoring Accounts Receivables to Beautify its Cash Flows

$m	2022	1H23
FMC Reported CFO	582.4	(746.7)
Less: Total Change in Receivables	*(152.0)*	*(222.5)*
Pro Forma CFO	**430.4**	**(969.2)**
% Difference Between Reported and Pro Forma CFO	**-26%**	**-30%**
FMC Reported Free Cash Flow	514.2	(822.0)
Less: Total Change in Receivables	*(152.0)*	*(222.5)*
Pro Forma Free Cash Flow	**362.2**	**(1,044.5)**
% Difference Between Reported and Pro Forma FCF	**-30%**	**-27%**

Source: FMC Financials, S&P Capital IQ

Without factoring or securitization of Brazilian receivables, FMC's operating cash flows would have been **negative $969 million in 1H 2023**. Despite a cosmetic improvement to cash flows, selling receivables – especially at a substantial discount – doesn't address the core issue of deteriorating customer creditworthiness, which is only getting worse considering the company is pushing more receivables off their balance sheet.

FMC has offloaded about $386 million in receivables at a presumably steep discount over the last 12 months, which we believe speaks, at least in part, to the underlying deterioration of customer creditworthiness in its most important market.

In our view, these financial maneuvers underscore a core rot associated with the critical Brazilian customer base which poses a potentially existential threat to FMC considering how important Brazil is for the Company's future growth. On the Company's most recent earnings call for Q2 2023, FMC President and CEO highlighted Brazil and LatAm as areas where the Company could see growth and recovery from its current financial downturn.[13]

However, considering the challenges associated with the Brazilian customer base – namely, Brazilian customers' weakening ability to promptly pay receivables, requiring the company to factor take a massive haircut on receivables – Brazil doesn't look to be the panacea FMC is hoping for. Add to this the impending flood of generics, both from competitors and smuggled into the region, and we think Brazil is more likely to be a disaster than an engine of recovery.

4. Rampant Smuggling Adds Further Pressure to Margins in Brazil.

In Brazil, it is not just legal competitors which FMC must worry about flooding the market. At the same time FMC is facing imminent defeat in its Brazilian court battle to prevent generics from entering the CTPR diamide market, we believe that FMC will likely experience further loss of revenues and downward pressure on margins from the proliferation of smuggled or black-market CTPR diamides from Asia, which evidence suggests will increasingly enter Brazil illegally through distributors in Uruguay and Paraguay.

[13] *FMC President, CEO & Director Mark Douglas, Q2 2023 Earnings Call. "So fundamentally, we know there is demand. We know we have to increase productivity by about 3% a year just to keep hunger at bay around the world. So I think the backdrop is solid. We see acreage increases anticipated, especially in Brazil and other parts of Latin America as we go into the next season. So for me, that on the ground grower view of the world is positive. And right now, it's hard to see what would change that. So it's a little early to say what our growth rates would be next year, but I am expecting a positive backdrop as we roll through 2024."*

Brazil is a major crop protection market, which has attracted increasing attention from organized crime and smugglers.[14] But now that low-cost competitors in India and especially China are manufacturing generic CTPR, distributors will now have a steady supply of diamides to smuggle into Brazil and undercut FMC's prices.

Concerningly for FMC, because of the high prices of patented diamides in Brazil, criminals have set their sights on CTPR for sale on the black market – sometimes taking it by force. On July 26, 2023, a group of men apparently armed with submachine guns, rifles and pistols, held multiple employees hostage at the Sipchem Nichino facility in Brazil and stole roughly 37 tons of Altacor insecticide, valued at approximately $10 million. Altacor, according to the FMC website, is "powered by Rynaxypr," FMC's patented CTPR active ingredient.

Group with rifles invades company and steals R$ 50 million in insecticides in MG

The theft began at 11:30 pm this Wednesday (26), in the rural area of Uberaba (MG), 482 km from Belo Horizonte

JBr **By Editora Jornal de Brasília**
07/27/2023 8:46 am

Source: *Jornal de Brasilia, July 27, 2023*

It's not just that violent criminals are targeting CTPR products for robberies in Brazil, but that CTPR is so readily available in the countries surrounding Brazil thanks to imports from newly authorized generic manufacturers in China, thereby creating a situation ripe for black market dealing.

Worryingly for investors, distributors in neighboring South American countries whose agricultural chemicals with a history of having their chemicals illegally smuggled into Brazil and seized by Brazilian police are now distributing CTPR in Uruguay and Paraguay, which based on the previous flow of smuggled agricultural chemicals suggests that black market diamides are likely to flood FMC's key Brazilian market.

An analysis of 1,307 forensic police reports of smuggled pesticides seized by Brazil's Federal Police between 2008 and 2018 shows that typically these pesticides are imported from China – about 77% -- to distributors in either Uruguay and Paraguay and are then smuggled into Brazil.[15] We analyzed current product registrations for CTPR in Uruguay and compared it with the 1,307 police reports of instances of previously smuggled and seized chemicals from 2008-2018.

Using data from Uruguay's Ministerio de Ganaderia, Agricultura y Pesca, we found that there are currently 28 CTPR products registered in the Uruguay market by 17 different distributors.

Comparing the names of distributors with CTPR products registered in Uruguay and the 1,307 police reports of smuggled pesticides seized in Brazil shows that 13 of the 17 Uruguayan distributors with registered CTPR products were previously mentioned in Brazilian police reports of smuggled chemicals.

[14] A recent study estimated that 24% of pesticides used in Brazil were illegally smuggled into the country, while the Brazilian government estimated last year that it would seize a record 500 tons of illegal pesticides in 2022.
[15] Data from these forensic reports include information such as where the products were seized, the identified active ingredient, the manufacturer, and the distributor that imported it. According to these forensic police reports, 59% of seized pesticides smuggled into Brazil between 2008 and 2018 were imported by distributors in Uruguay, while 39% were imported by distributors in Paraguay.

Ministerio de Ganadería, Agricultura y Pesca | Dirección General de Servicios Agrícolas

Registered Products Crops pests Imports ? Sign off

CONSULTATION OF PHYTOSANITARY PRODUCTS

REGISTERED PRODUCTS

I do not re...	Tradename	Fitness	Formulation	toxic.	Asset	Company	Expiration	State
3881	CORAGEN TM	INSECTICIDE	Concentrated Suspension	IV.	CHLORANTRANILIPROLE	FMC LATIN AMERICA SA	10/21/19	Renewal
3989	RHINO 75WDG	INSECTICIDE	Dispersible Granules	IV.	CHLORANTRANILIPROLE	THE FORGE SA	05/04/24	Authorized
4025	SUMO	INSECTICIDE	Concentrated Suspension	IV.	CHLORANTRANILIPROLE	INEPLUS SA	07/13/20	Renewal
4063	VOLIAM TARGO	INSECTICIDE	Concentrated Suspension	II	CHLORANTRANILIPROLE	SYNGENTA AGRO URUGUAY SA	08/31/20	Renewal
4249	SHIELD 200 SC	INSECTICIDE	concentrated solution	IV.	CHLORANTRANILIPROLE	CALISTER S.A.	10/09/21	Renewal
4403	AMPLIGO 150 ZC	INSECTICIDE	Mix Susp.Microcapsules+S Concentra te	II	CHLORANTRANILIPROLE	SYNGENTA AGRO URUGUAY SA	10/01/18	Renewal
4414	CHLORANT 20 SC	INSECTICIDE	Concentrated Suspension	IV.	CHLORANTRANILIPROLE	TAMPA SA	10/21/22	Renewal
4423	ACTIO 600 WG	INSECTICIDE	Dispersible Granules	IV.	CHLORANTRANILIPROLE	AGRITEC SA	11/20/22	Renewal
4434	SELENIUM 75 WDG	INSECTICIDE	Dispersible Granules	IV.	CHLORANTRANILIPROLE	SOCIETY OF UNITED FARMERS OF URUGUAY	12/08/19	Renewal
4538	REQUIEM 75 WDG	INSECTICIDE	Dispersible Granules	IV.	CHLORANTRANILIPROLE	LANAFIL SA	07/16/23	Renewal
4548	CHLORANT 20 FE	INSECTICIDE	Concentrated Suspension	IV.	CHLORANTRANILIPROLE	TAMPA SA	07/30/19	Renewal
4549	CHLORANT 75 WG	INSECTICIDE	Dispersible Granules	IV.	CHLORANTRANILIPROLE	TAMPA SA	07/31/19	Renewal
4560	RYNAGEN 200 SC	INSECTICIDE	Concentrated Suspension	IV.	CHLORANTRANILIPROLE	CIBELES SA COMPANY	09/03/19	Renewal
4568	MYTHIC FN SC	INSECTICIDE	Concentrated Suspension	IV.	CHLORANTRANILIPROLE	ALLCHEM SA	09/22/19	Renewal
4574	ACTIO 200 SC	INSECTICIDE	Concentrated Suspension	IV.	CHLORANTRANILIPROLE	AGRITEC SA	09/29/19	Renewal
4691	RHINO 70WDG	INSECTICIDE	Dispersible Granules	IV.	CHLORANTRANILIPROLE	THE FORGE SA	01/20/20	Renewal
4715	CLEVEROLE XTRA	INSECTICIDE	Dispersible Granules	IV.	CHLORANTRANILIPROLE	SINO-RAINBOW AGROSCIENCES SA	03/14/20	Renewal

Source: *[Uruguay Ministerio de Ganaderia, Agricultura y Pesca, Pg. 1 of 2, July 31, 2023]*

Indeed, police reports show that most of these Uruguayan distributors have multiple instances of their products being smuggled into Brazil – including three distributors who appeared **over 100 times** each in Brazilian police reports on smuggled chemicals. Put simply, the vast majority of distributors with registered CTPR products in Uruguay have appeared in Brazilian police reports on seizures of chemicals smuggled into Brazil between 2008 and 2018.

Distributor Name	# of Police Reports of Smuggled Products	Distributor Name	# of Police Reports of Smuggled Products
La Forja S.A.	358	Tomai Ltda.	4
Agritec S.A.	211	Laboratorio Microsules Uruguay S.A.	3
Saudu S.A.	175	Jupentil S.A.	2
Cia. Cibeles S.A.	42	Proquimur Ltda.	2
Lanafil S.A.	32	Proquimur S.A.	2
Agroquímicos Lanafil S.A.	18	Dapama S.A.	1
Calister S.A.	17	FENASOL S.A.	1
Tampa S.A.	13	Sino Rainbow Agrosciences S.A.	1
Ineplus S.A.	5	Solaris/Monsanto	1
Proquimur	5		
		Grand Total	893

Source: *[Smuggling of Pesticides in Brazil (2008-2018)]*

Many of these Uruguayan distributors with CTPR products and a history of their products being smuggled into Brazil also promote their CTPR products on social media. For example, La Forja S.A., advertises its Rhino 75 WDG, Rhino 70 WDG and Rhino Flex lines of CTPR insecticides in Uruguay by sponsoring a racecar.

Source: *Tafirel Twitter Account, July 3, 2022*

The Brazilian police forensic reports show 358 instances of La Forja's products being smuggled from Uruguay to Brazilian farmers. La Forja also launched a CTPR product that is manufactured in China, and based on the previous instances of smuggling, we think there is a high likelihood it ends up smuggled into Brazil.[16]

While Uruguay and Paraguay are crucial gateways through which pesticides can illegally flow to Brazil, that flow would be nothing more than trickle without manufacturers exporting these products from China. Approximately 48% of agrochemical imports to Paraguay in 2022 came from China, while about 49% of pesticides imported to Uruguay in 2021 originated from China. It is no surprise then, that 15 of 28 CTPR products registered in Uruguay are manufactured in and imported from China. With the close relationship between distributors in Uruguay and Paraguay, and Chinese manufacturers, the impending flood of generic CTPR from China will undoubtedly have a knock-on effect for supplies of the product in Latin America – and black-market supplies of CTPR in Brazil.

[16] For avoidance of doubt, we are not alleging that La Forja or any distributor mentioned in this report are knowingly smuggling products into Brazil from Uruguay or Paraguay or are committing illegal conduct in any way. And for FMC investors, it is irrelevant. What matters is that there is an organized enterprise to smuggle chemicals made by such distributors into Brazil, and that this practice will only proliferate with the increase in generic manufacturing in India and China.

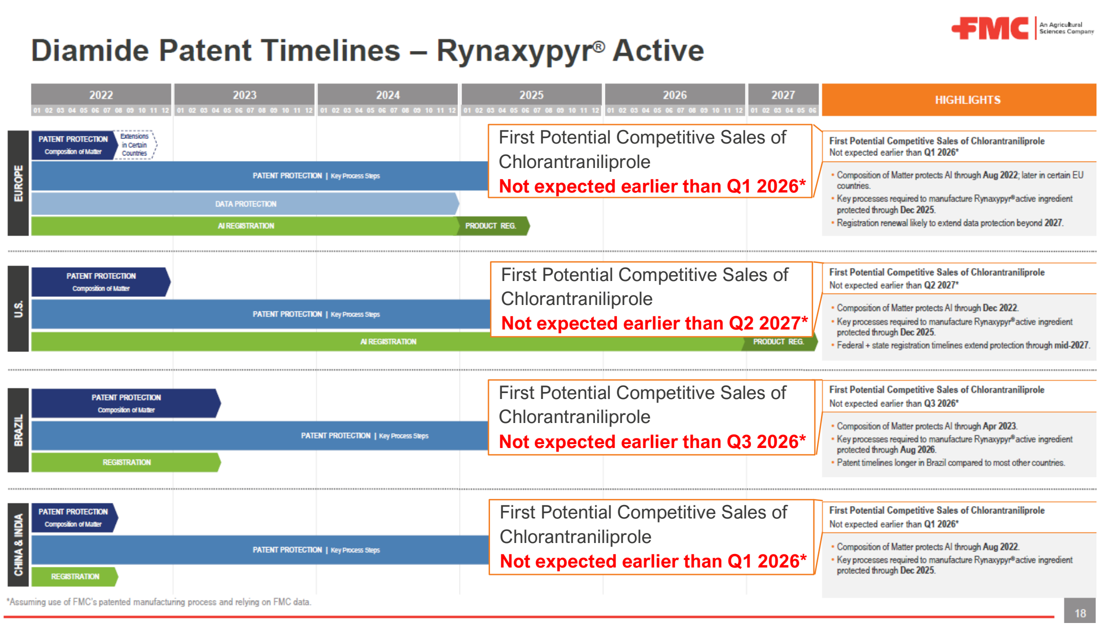
III. Process Patents, Impotent in India and China, Unlikely to Protect FMC in Rest of World.

As discussed above, FMC's process patents have proved impotent in preventing the entry of generic competitors to FMC's flagship CTPR diamide product in its key markets of India, China and likely Brazil. We believe that such defeats indicate that contrary to FMC's claims to investors, its process patents are unlikely to prevent generic competitors in other parts of the world.

FMC claims that despite the expiration of its patent for its flagship CTPR diamide product, a thicket of process patents will extend its patent exclusivity period and prevent the entry of generic competitors into the market for years to come.

> In the case of Rynaxypyr and Cyazypyr, these process patents are extremely important.
>
> Chlorantraniliprole is a complex molecule to produce. In fact, its production requires 16 separate steps, many of which produce an intermediate that's sole use is in the production of chlorantraniliprole. This is very important as it means there are no other commercial uses for these intermediates, and, hence, no other commercial outlets for them.
>
> Importantly, FMC has many of these 16 process steps separately patented. Several of these intermediate process patents run well past the expiration of the composition of matter patents, and, in some cases, stretch all the way to the end of the next decade.

Source: Earnings call, Q2 2019



Source: Earnings call presentation, Q2 2021

FMC's CEO and CFO recently doubled down on the company line that investors need not worry about generic competition anytime soon, stating that FMC's process patents and its associated data protection rights "**continues well until the end of this decade**" or even "**a bit longer**."

> Many of the intermediate steps and the chemicals that are produced there really have no other use than for making Rynaxypyr. We have patents on their composition of matter. We have patents on the process to make several of those as well. We also have patents on formulations on how that product is finally formulated to take to market. So we've had this broad set of patent protections. We are also provided some protection to the use of our regulatory data and the way registrations are managed in different countries. They give us protection that continues well until the end of this decade and, in some cases, a bit longer.

Source: Citi's 2023 Global Industrial Tech and Mobility Conference, Feb 21, 2023

FMC's CFO goes so far as to suggest that the whole notion of a "patent cliff" in the crop protection industry is a myth and that investors should instead expect something more akin to a "long plateau."

And certainly, with -- speaking directly to Rynaxypyr, which has earlier expiration dates, Cyazypyr goes a little bit further. But as you pointed to, P.J., it's not just relying on the patents themselves. And obviously, we've been very aggressive in enforcing the patents. We have won cases for infringement in both China and India and continue to aggressively defend our patents. But we've also engage partners and brought other people in the business ahead of any kind of patent expiration. We don't believe that in our industry, in crop protection, that there really is a patent cliff. It's more of a long plateau as you transition from being a fully-patented to a post-patented life.

Source: *Citi's 2023 Global Industrial Tech and Mobility Conference*, *Feb 21, 2023*

FMC's CEO acquiesces to the obvious – that generics will someday, sometime, somewhere enter in the market because "That is what happens" – but that day, he states, will not come until the end of the decade.

Last year, diamides grew about 7%. I think in the mid- to long term, you're going to see them continue to grow in the mid-single digit. I think that's an important part of the algorithm of growth. They have been around for almost 20 years now. So that we talk about them as being new molecules, new technology, and they are, but they're coming off the end of their patent. And you should expect at some point towards the end of this decade, you will see generic manufacturing. That is what happens. So we're ready for that. We anticipated and we'll continue to invest in the diamides.

Source: *Bank of America Global Agriculture and Materials Conference 2023*, *Mar 01, 2023*

Yet as we have already discovered, such claims, in our opinion, are simply not true. FMC's process patents were rejected by courts and regulators in India and China, and we believe that Brazil is also on the cusp of allowing generic competitors. We see no reason why other courts would not reach the same conclusion. In an effort to understand the threat of generics and the power, or lack thereof, of FMC's process patents, we spoke to a number of experts with experience in the agricultural chemical industry, including FMC formers. They raised key reasons why investors should not expect FMC's process patents to be much help in preventing generic competition across the world.

First, there is no shortage of capable, well-funded and highly motivated generic competitors to manufacture non-infringing diamide generics. We interviewed a former FMC senior product manager who was responsible for creating FMC's patent defense strategy in his region. His view was that the Rynaxypyr market opportunity was so "**humongous**" that generic competition would invest whatever it took to manufacture competitive generic Rynaxypyr to bring to market:

> *"There's a humongous opportunity. Rynaxpyr is the second largest pesticide globally in the whole world.. . . So there's, humongous opportunities for generics in the space. And so they will, they will absolutely be invested. And I know generic manufacturers are actively looking at ways to design around those patents to go into them . . . But it's such a big prize that people are investing in it.*
>
> *--Former FMC Product Manager*

Second, as detailed above, in 2022 and 2023, India and China each rejected FMC's attempts to use process patents and associated data protection to stop generic competition and "evergreen" its patent protection.

Third, these court opinions do not reflect anomalies in India patent law, for example, but instead the exact opposite: the India court opinions reflect universally accepted and basic principles of patent law that most countries have intentionally adopted to prevent exactly what FMC is attempting to do here – to "evergreen" patent protection from 20 years to 30 or 40 years, or longer.

We spoke to an India patent law expert who was familiar with the India court rulings against FMC. This expert is based in India and works as a senior patent analyst with a focus on working with the patent offices in India, U.S. and Europe. She explained that most countries' patent laws, including India's, are by design very similar to one another across the globe because of international treaties and conventions that purposefully attempt to uniformize intellectual property protections. She further explained why the reasoning of the India court opinions are generally applicable across the world and why courts rarely enforce process patents under circumstances like what FMC is attempting here.

Specifically, the patent expert noted that courts are sensitive to the common practice of companies attempting to artificially "evergreen" patent protection. Companies will file a patent application and then in subsequent years repeatedly file new applications showing slightly different manufacturing processes. By doing so, the applicant hopes to restart the 20-year patent protection clock with each new application. According to the expert, this has always been an especially acute problem with respect to chemical manufacturing because there are so many different chemicals that have substantially similar properties that can be substituted in a manufacturing process.

> *"Basically, evergreen is nothing but getting protection over a previously protected invention. [The concept applies] everywhere that you cannot get more than 20 years protection on a similar invention again and again."*
>
> *-Patent law expert*

Furthermore, in most jurisdictions, the burden of proof in a *process* patent case rests with the patent holder and not the alleged infringer as it would in the typical product patent case.

> *"So basically, when it is an apparatus related or product related claim, the ball is on the defendant's side to show that he is not using your product. But when it is about a manufacturing process claim or something related to process claims or method claims, the ball is in [the plaintiff's] court and you will be providing a lot of evidence about how the defendant is using your manufacturing process."*
>
> *--Patent law expert*

To be sure, we also spoke to an expert who has over thirty years' industry experience, including many years as a senior vice president of marketing at a major agrochemical company. He explained that of all the potential strategies to defend a patent expiration from generics, ***process patents are the least effective***. He explained that generic competitors employ smart engineers who can almost always find novel non-infringing manufacturing methods and processes to produce a comparable product.

> *"The process patent side is probably the hardest in my experience. . .. Good engineers can work around lots of process patents. And if your process patent is way back into your manufacturing process it's harder to enforce on the process patent side.*
>
> *--Industry expert and former SVP, Monsanto*

Similarly, we spoke to a former FMC senior product manager who was responsible for creating FMC's patent defense strategy. He stated that Dupont and FMC did a good job of patenting each step of the manufacturing process, but he doubted that it would afford FMC much, if any, protection from generic competition.

> "*You know, the generic manufacturers in China and India are also very innovative. So, you know, it's not that they won't find a way around it, they probably will."*
>
> *--Former FMC Product Manager*

FMC repeatedly touts the huge number of process patents it possesses to protect its diamide portfolio. Ironically, this fact may by itself evidence the exact opposite of what FMC intends: the sheer volume of FMC's process patents is more likely to evidence unenforceable "evergreening" than anything else. Indeed, as detailed above, FMC's "maze of patents" was one of several grounds cited by the India court in rejecting FMC's attempt to enforce its process patents in India.

In sum, FMC leans into its process patents to assure investors that generic competition will be a non-issue until "the end of the decade" or "a bit longer," but this an insincere farce. We especially do not know how FMC can continue to repeat this to investors with a straight face while (unbeknownst to most investors) court after court has rejected FMC's much touted process patents and cleared the path for the generic competition that has already arrived and are taking market share.[17]

[17] The manufacture and adoption of cheaper generics in major markets like India, China and Brazil are also likely to create intangible network effects, such as spurring regulators across the world to similarly permit generics to remain competitive.

IV. Low Priced Generics Set to Undercut FMC's Margins and Crush its Revenues.

Following a banner 2022, FMC faced a crushing decline in revenues, cash flows and profits in 2023 due to a global inventory glut of crop protection products. At the top line, in Q2 2023, FMC reported a 30% YoY revenue decline. In that same period, FMC's operating income fell 56% YoY and net income collapsed 77.3% YoY. This translated to sizeable declines in EBITDA and free cash flow, which fell 47.8% and 43.7% YoY in Q2.

FMC blamed the carnage on a buildup of inventory in the channel, particularly in the key markets of Latin America and Asia, where quarterly revenue dropped $163 million YoY (-38%) and $110 million YoY (-29%), respectively. Yet despite such carnage, FMC projects a strong bounce back in the second half of the year led by the Company's forecasts for a very strong Q4, led by cost tailwinds and *increased prices*. We think not.

FMC's financial situation has deteriorated markedly due to a buildup of channel inventory, yet the situation is about to get worse because undisclosed to investors, legal defeats in key markets have opened the doors to an impending flood of generic diamide products, particularly in Asia and Latin America, which we believe will further depress volume, prices, and margins for FMC's flagship diamides in these critical markets.

Generic competition is here today, yet this reality has not been priced into FMC's stock. Analyst consensus is that FMC has several more years before it needs to worry about diamide patent expiration, thus giving the Company time to offset the negative impact of future generic competition with new products set to launch later this decade. For example, Morningstar, who maintains one of the highest analyst price targets ($135 per share), acknowledges that the expiration of FMC's diamide patents will create long-term margin compression, yet it reassures investors that this expiration will not happen until 2026.[18]

Similarly, in an August 2023 report, J.P. Morgan initiated coverage on FMC and echoed the Company line that generic competition will not impact FMC until later in this decade. Even a bearish price target accompanying an "underperform" rating from Credit Suisse published in July was based on "ongoing inventory destocking" and did not mention generic competition as a key risk. The bank has since upgraded to "neutral," further showing that the impact of generics is not baked into analyst price targets.

We think that analysts, like investors, have been misled by FMC. As FMC's legal losses mount and its "process" patents are shown to be ineffective, generic competitors are heavily incentivized to invest in the capability to manufacture tons of new CTPR to sell at slashed prices. This is an unhappy story unfolding in real time today, as generics have already launched in key markets at prices up to 80% below FMC's branded insecticide. As such, we believe the threat of immediate generic competition to the diamide portfolio is not remotely priced into investors' valuation of the stock.

- **Licensing Sales**

The impact of generics around the world is likely even more pronounced than simply a decline in direct sales, as FMC does not just directly manufacture diamides, it also licenses the diamide active ingredient to other manufacturers across various markets. According to a 2022 earnings call, partner sales account for about 37% of their overall diamides business.

> *Out of our $2 billion [diamides] business today, about $700 million of revenue comes through our partner sales.*
>
> *- Source: FMC Corporation Company Conference Presentation 3/2/2022*

While the company is vague about the structure of these licensing agreements, including the margins of this segment, we believe that a material proportion of these revenues are from purely licensing, which we presume would be even higher margin sales for FMC. Therefore, low-priced generics not only undercut sales in the channel, but would also likely eliminate or impair any higher margin partner business from patent licensing. FMC has preemptively entered

[18] *Morningstar website, August 9, 2023*

into licensing agreements with certain partners to forestall them from immediately entering the market with generics, but FMC gives investors few details on the scale and structure of these agreements.

With the proliferation of generics in key markets, including key manufacturing markets like China and India, why would any competitor continue to pay FMC to license an expired patent? We think these licensing sales are higher margin, so even a small loss of this licensing revenue could be absolutely devastating to FMC's margins, profits and cash flows.

Generics are already here!

Ultimately, we believe that FMC's undisclosed legal defeats are ushering in a wave of generic competitors that will devastate FMC's revenues, margins, profits and cash flows.

In Asia, we anticipate much more serious sales declines and margin compression for the remainder of FY 2023 and into FY 2024 than has been guided by the Company or projected by analysts, who are not pricing in the flood of generics now competing against FMC's diamides in India and China.

Already, there are at least 80 CTPR products registered in China, with several hundred CTPR formulations registered in India, following the expiration of composition of matter patents in each country last year. With India and China as key manufacturing hubs for FMC's diamide products, competitors have wasted no time entering these markets manufacturing and selling CTPR generics, in addition to registering for export to other FMC Asia region countries, such as Australia.[19]

Right now, these readily available and low-cost generic alternatives to CTPR are capturing sizeable market share from FMC. The Company does not publish revenue breakdown for individual countries aside from the U.S and Brazil, but based on earnings transcripts, we estimate FMC's Indian sales in FY 2022 to approach $450 million. For context, just four Indian generic competitors are projecting almost $100 million in CTPR sales over the next year, which amounts to over 40% of FMC's CTPR market share. And this is just competition from these four competitors. There are hundreds of generics registered in India poised to undercut FMC in this market.

It's not just that competitors are quickly taking significant market share from FMC, however, but are doing so with much lower priced diamide products. The Chinese media stated in a news article that most of the manufacturers are selling CTPR **at a price 80% below FMC's patented product**. FMC will undoubtedly have to compete on price in order to stop from hemorrhaging market share, which will further depress overall sales and margin in the region.

Accordingly, in the Asia region, **we estimate diamide revenues will drop 30%, if not more, by the end of FY 2023 and 40% into FY 2024**, as customers quickly adopt low-cost CTPR generics recently made available in India and China. **This projects to an 14% decline relative to the FY 2024 expected revenue**. This contrasts with some significantly more optimistic market estimates that forecast topline revenue growth to be in the low- to mid-single digits in the second half of FY 2023 through FY 2025 in the Asia region.

In addition to a marked decline in sales, we expect FMC's gross margins to contract as its forced to lower prices to compete in price-sensitive Asian markets with low-cost generics. Based on the pricing of generics we have already observed in the market, and our conversations with experts who witnessed other agricultural chemicals coming off patent, we believe it is likely conservative to model a decline in gross margin for diamide products across the region from 55% to 35% between Q3 2023 and end of FY 2024.

In Brazil, we anticipate that **diamide sales in the region to continue falling by 15% by the end of 2023, with more substantial declines of up to 30% in FY 2024**. Additionally, as local CTPR sales force FMC to drop prices even further, we anticipate **gross margins to compress from about 70% for diamide products to 35% by the end of FY 2024**. **This would result in a $175 million shortfall in Brazil topline revenue in FY 2024 relative to the base case – a 11% drop – and near zero growth in topline revenue relative to FY 2023 for FMC's most import market**.

[19] According to the Australian Competition and Consumer Commission, FMC's composition patent on CTPR expired in Australia **in 2021** (see Table 3).

The price declines and margin compression across key markets, coupled with the further loss of revenue and margin associated with losing licensing agreements to low-cost generic competitors, would severely impact FMC's valuation. We modeled these assumptions, which would imply a price of $40.74 per share.

Implied Share Price ($m, except per share items)	
EV	8,890
EV/EBITDA Mult. (FY24)	8.0x
Debt	4,683
Cash	942
Minority Interest	24
Equity Value	5,125
Shares Out	126
Implied Share Price	**40.74**
Cur. Share Price	82.19
% Change	**-50.4%**
Cur. Consensus Price	112.66
% Change	**-63.8%**

Source: Company Filings, Blue Orca Calculation

This estimate relies on what we believe to be a much more reasonable 8x forward EV/EBITDA multiple than the multiple currently applied by sell side analysts, which we think is far too generous for an industry leader whose flagship products are no longer protected from generics by patents. According to J.P. Morgan, FMC has historically traded at a 10x FY24 EBITDA multiple. If FMC traded at a 10x FY24 EBITDA multiple when it was generating high margins from patent protected products and it had a healthy balance sheet, we think it should trade at a lower multiple (8x FY24 EBITDA) in light of lowered revenues, compressed margins, generic competition, dangerous leverage and increasing debt servicing costs.[20]

V. Mounting Debt, Covenant Breaches, and Borrowing to Fund Dividends and Stock-Buy Backs Compound FMC's Deteriorating Financial Situation

Ultimately, we think that rising short-term borrowing costs, deteriorating revenues, profits and cash flows will not only push FMC's leverage to dangerous heights, **but likely prompt an investment rating downgrade**.

In May 2023, FMC issued $1.5 billion in senior secured notes, bringing gross debt to $4.7 billion as of June 30. FMC admitted that its "actual leverage for the four consecutive quarters ended June 30, 2023 **was 3.55**." Not only is this a massive jump up from the Company's 2.34x leverage ratio at the end of FY 2022, but it also appears to have put FMC in breach of the leverage ratio covenant of 3.5x included in the Company's June 2022 credit agreement.

Because of the decline in margins and fall in revenues globally, FMC was forced to ask creditors to amend its credit agreement, raising the leverage ratio covenant to 4.0x through March 31, 2024, and 3.75 thereafter. FMC claims that this "gives them ample room to navigate through the current disruptions." We doubt it. Low priced generics are here in some major markets and coming soon to others, which will add further pressure to the Company's revenues and profits.

If FMC's net debt to EBITDA ratio is already at 3.55 without competition from generics, we project that the diminution of revenues and margins from generic competition could easily push FMC's leverage ratio past the 4.0 net debt/EBITDA ratio required by its credit agreement.

[20] FMC has traded at a multiple as low as 8.2x EV/EBITDA since the time it acquired the diamide portfolio from Dupont in 2017.

Increased debt load, coupled with a raising interest rate environment, has begun to impact on FMC's profitability. Interest expense in Q2 2023 was $64.5 million, **up 83%** from $35.3 million in Q2 2022. Considering sagging topline growth and generic competitors on the way, a ballooning interest expense will further eat away at its profitability.

Moreover, even despite a temporary leverage ratio reprieve, we think that a covenant breach poses a direct threat to FMC's lifeline: its access to low interest rate short-term borrowing. FMC continues to roll commercial paper, which provides $1 billion in short term debt at 5.9%. In fact, 21% of its $4.7 billion gross debt is commercial paper, borrowed at a very favorable rate. That's a significant vulnerability if the Company's leverage position continues to deteriorate. The fact that FMC currently borrows at just ~60 bps above the Effective Federal Funds Rate is frankly unbelievable.

Indeed, when FMC downward revised FY 2023 guidance in July 2023, Moody's Investor Services noted that the event was credit negative, but it stated that "the ratings are unchanged because we expect that this [channel inventory] issue will be transient, and fundamental demand for the company's products on farms has not changed." Moody's expressly stated that "if there is a change to the competitive dynamics" then "we could move to a negative outlook or reevaluate the appropriateness of the Baa2 rating." Of course, investors now know for the first time that generic competition is flooding FMC's largest markets and the competitive dynamics have significantly changed for the worse. In our opinion, FMC and its investors can reasonably anticipate a rating downgrade.

We fail to see how a Company which appeared to breach its covenants and faces financial carnage due to over leverage and a deteriorating business will continue to access commercial paper markets at such a favorable rate. If its commercial paper funding dries up, FMC would have to borrow another $1 billion at much higher short-term rates, putting that much more strain on an already financially stretched company. Given this perfect storm of falling revenues, plummeting profits and cash flows and rising debts, we believe that **an investment grade downgrade is highly likely**, which will force FMC to replace cheap commercial paper with increasingly expensive debt.

- **Funding Dividends and Share Repurchase with Borrowings**

Despite falling revenues, plummeting profits and anemic cash flow generation, FMC continues to finance dividend payments and share repurchasing programs through borrowed money.

In Q2 2023, free cash flow was only $93 million, down a staggering $72 million from Q2 2022. That represents a 44% decline YoY. Taking into account the first two quarters of 2023 paints an even worse picture for the Company, as FMC reported -$822 million in free cash flow for H1 2023, **down $323.7 million** – or 65% -- from the same period last year, even accounting for extreme seasonality effects on cash flow. Meanwhile, EBITDA fell nearly 48% in Q2 2023 from the year prior.

Despite poor cash flow generation, FMC nevertheless returned $124 million to shareholders in Q2 2023, through a combination of $73 million in dividends and $51 million in share repurchases. In the first half of the year, FMC paid over $145 million in dividends to shareholders – a 9% increase over the same period in 2022. Additionally, Between May 10 and May 17, the Company purchased ~457,000 shares at an average cost of $109.35, bringing the total shares purchased in H1 2023 to ~651,000.

While FMC management states it does not plan any additional share repurchases for 2023, they will prioritize dividend payments.

> *With the current year free cash flow outlook, near-term cash deployment priorities have changed. Free cash flow generated in the second half will first be used to pay the dividend, with any remaining cash used to reduce short-term borrowings.*

Source: FMC Corporation Q2 2023 Earnings Call Transcript

Considering the Company's falling revenue and poor cash flow, FMC is now relying on borrowings to finance continued payments to shareholders. This is simply unsustainable. **Ultimately, we think that rising short-term borrowing costs, deteriorating revenues, profits and cash flows will push its leverage ratio to dangerous heights well higher than permitted under its credit agreement**.

FMC's debts are already worrying, but with declining revenues, profits and cash flows, added to the likely event that FMC has to refinance cheap commercial paper with expensive debt, and the financial picture appears bleak. At a minimum we would predict that an **investment grade downgrade is likely**.

Ultimately, without patent protection for its leading products in its key markets (which account for 60%+ of EBITDA) and battling capable low priced generics already undercutting FMC in key markets, we think FMC's revenues, margins and cash flows are set to collapse.

DISCLAIMER

We are short sellers. We are biased. So are long investors. So is FMC. So are the banks that raised money for the Company. If you are invested (either long or short) in FMC, so are you. Just because we are biased does not mean that we are wrong. We, like everyone else, are entitled to our opinions and to the right to express such opinions in a public forum. We believe that the publication of our opinions about the public companies we research is in the public interest.

You are reading a short-biased opinion piece. Obviously, we will make money if the price of FMC stock declines. This report and all statements contained herein are solely the opinion of BOC Texas, LLC, a Texas limited liability company, and are not statements of fact. Our opinions are held in good faith, and we have based them upon publicly available evidence, which we set out in our research report to support our opinions. We conducted research and analysis based on public information in a manner that any person could have done if they had been interested in doing so. You can publicly access any piece of evidence cited in this report or that we relied on to write this report. Think critically about our report and do your own homework before making any investment decisions. We are prepared to support everything we say, if necessary, in a court of law.

As of the publication date of this report, BOC Texas, LLC (a Texas limited liability company) (along with or through our members, partners, affiliates) have a direct or indirect short position in the stock (and/or possibly other options or instruments) of the company covered herein, and therefore stands to realize significant gains if the price of such instrument declines. Use BOC Texas, LLC's research at your own risk. You should do your own research and due diligence before making any investment decision with respect to the securities covered herein. The opinions expressed in this report are not investment advice nor should they be construed as investment advice or any recommendation of any kind.

This report and its contents are not intended to be and do not constitute or contain any financial product advice as defined in the Australian Corporations Act 2001 (Cth). Because this document has been prepared without consideration of any specific clients investment objectives, financial situation or needs, no information in this report should be construed as recommending or suggesting an investment strategy. Investors should seek their own financial, legal and tax advice in respect of any decision regarding any securities discussed herein. At this time, because of ambiguity in Australian law, this report is not available to Australian residents. Australian residents are encouraged to contact their lawmakers to clarify the ambiguity under Australian financial licensing requirements.

Following publication of this report, we intend to continue transacting in the securities covered therein, and we may be long, short, or neutral at any time hereafter regardless of our initial opinion. This is not an offer to sell or a solicitation of an offer to buy any security, nor shall any security be offered or sold to any person, in any jurisdiction in which such offer would be unlawful under the securities laws of such jurisdiction. To the best of our ability and belief, all information contained herein is accurate and reliable, and has been obtained from public sources we believe to be accurate and reliable, and who are not insiders or connected persons of the stock covered herein or who may otherwise owe any fiduciary duty or duty of confidentiality to the issuer. As is evident by the contents of our research and analysis, we expend considerable time and attention in an effort to ensure that our research analysis and written materials are complete and accurate. We strive for accuracy and completeness to support our opinions, and we have a good-faith belief in everything we write, however, all such information is presented "as is," without warranty of any kind– whether express or implied.

If you are in the United Kingdom, you confirm that you are subscribing and/or accessing BOC Texas, LLC research and materials on behalf of: (A) a high net worth entity (e.g., a company with net assets of GBP 5 million or a high value trust) falling within Article 49 of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "FPO"); or (B) an investment professional (e.g., a financial institution, government or local authority, or international organization) falling within Article 19 of the FPO.

This report should only be considered in its entirety. Each section should be read in the context of the entire report, and no section, paragraph, sentence or phrase is intended to stand alone or to be interpreted in isolation without reference to the rest of the report. The section headings contained in this report are for reference purposes only and may only be considered in conjunction with the detailed statements of opinion in their respective sections.

BOC Texas, LLC makes no representation, express or implied, as to the accuracy, timeliness, or completeness of any such information or with regard to the results to be obtained from its use. All expressions of opinion are subject to change without notice, and BOC Texas, LLC does not undertake a duty to update or supplement this report or any of the information contained herein. By downloading and opening this report you knowingly and independently agree: (i) that any dispute arising from your use of this report or viewing the material herein shall be governed by the laws of the State of Texas, without regard to any conflict of law provisions; (ii) to submit to the personal and exclusive jurisdiction of the superior courts located within the State of Texas and waive your right to any other jurisdiction or applicable law, given that BOC Texas, LLC is a Texas limited liability company that operates in Texas; and (iii) that regardless of any statute or law to the contrary, any claim or cause of action arising out of or related to use of this website or the material herein must be filed within one (1) year after such claim or cause of action arose or be forever barred. The failure of BOC Texas, LLC to exercise or enforce any right or provision of this disclaimer shall not constitute a waiver of this right or provision. If any provision of this disclaimer is found by a court of competent jurisdiction to be invalid, the parties nevertheless agree that the court should endeavor to give effect to the parties' intentions as reflected in the provision and rule that the other provisions of this disclaimer remain in full force and effect, in particular as to this governing law and jurisdiction provision.