

## Black Rose Industries Limited

### Introduction:

Black Rose Industries Ltd., formerly known as Asia Fab limited, was incorporated in 1990 as a textile manufacturing company. Later on, it got the distribution of chemicals and textiles. Now, it consists of three main divisions – Chemicals, Textiles and Acrylamides. The chemical division is engaged in the import, distribution and export of a wide range of specialty and performance chemicals. The textile division manufactures fabrics and made-ups for industrial applications. In September 2013, the company commenced operations for liquid acrylamide monomer plant in Jhagadia, Gujarat which finds extensive usage in the manufacture of polymers used in growth industries like oil & gas, affluent/wastewater treatment, etc. with the current installed capacity of 14,000 MT.

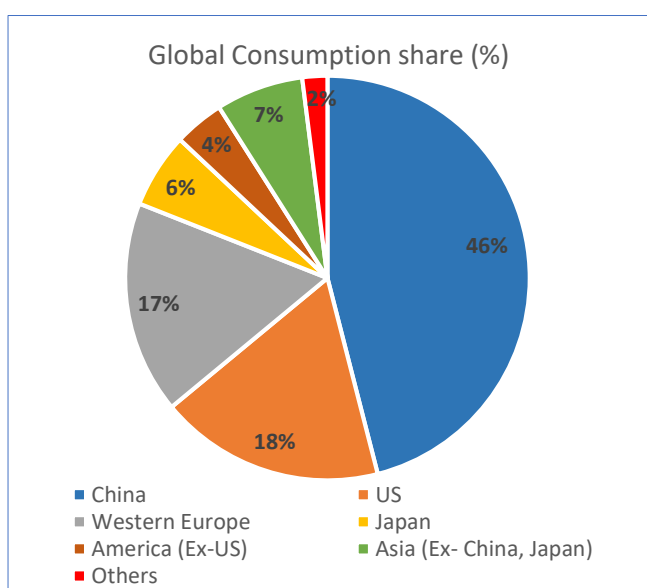
In order to improve its product mix and do a forward integration, BRIL Ltd. filed for an environmental clearance certificate for a major expansion for manufacturing polyacrylamide liquids (40,000 MT) and polyacrylamide solids (10,000 MT). Necessary applications for government approval have been made and Environmental Clearance was received in October 2018. The polyacrylamide liquids plant is expected to begin commercial production during the calendar year 2018 and the solids plant during 2019. The expected cost of the expansion is 60 crores and the expansion are expected to add 300 crores to the company's top-line.

### Recent entry into the acrylamide market:

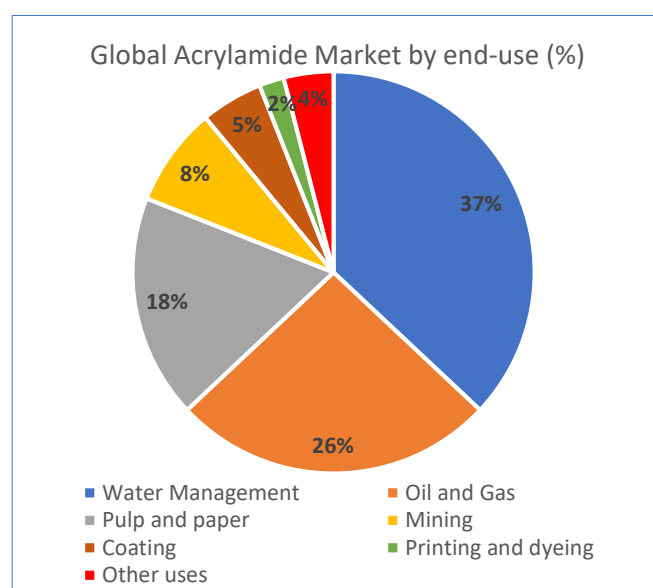
Acrylamide (chemical formula -  $C_3H_5NO$ ) is an organic compound that can be present in either monomer (single unit) or polymer (multiple units joined together by chemical bonds). Acrylamide is mainly used in the industrial processes to synthesise polyacrylamides which are used as water-soluble thickeners. The use of acrylamide for production of polyacrylamide accounts for about 90 % of its total use.

### Uses:

- Polymers used as water-soluble thickeners and flocculants for wastewater treatment
- Polymers for enhanced oil recovery (EOR)
- Shale gas extraction
- Binders and retention aids for paper
- Waterproofing chemicals and coating and paint emulsions
- Making paper, plastics and dyes.



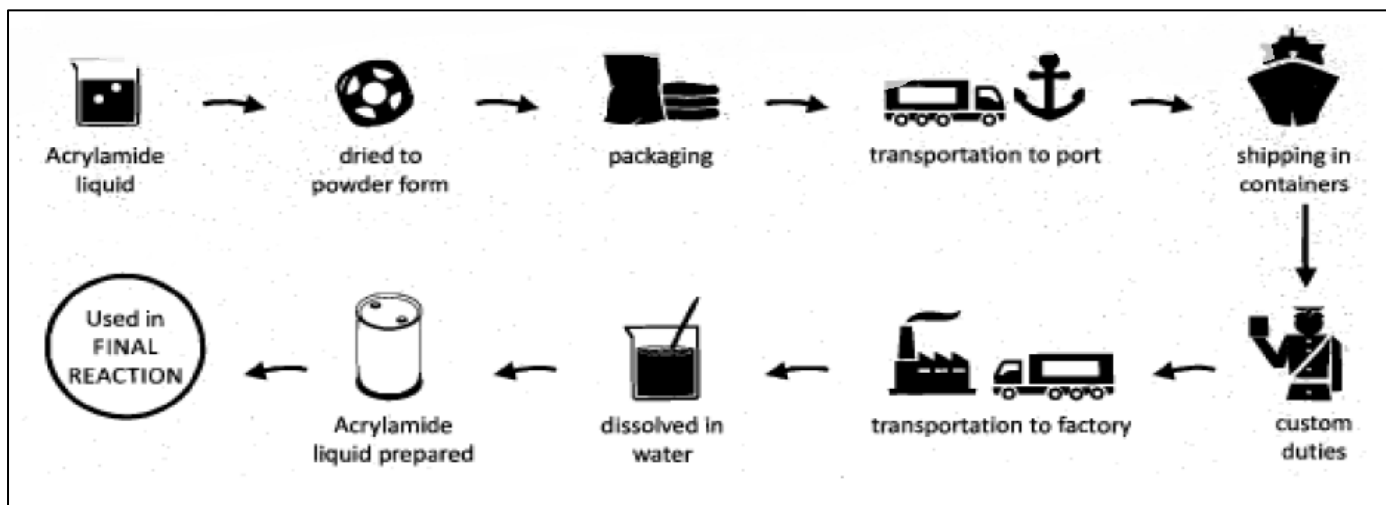
www.chemarc.com - As on Dec, 2017



www.chemarc.com - As on Dec, 2017

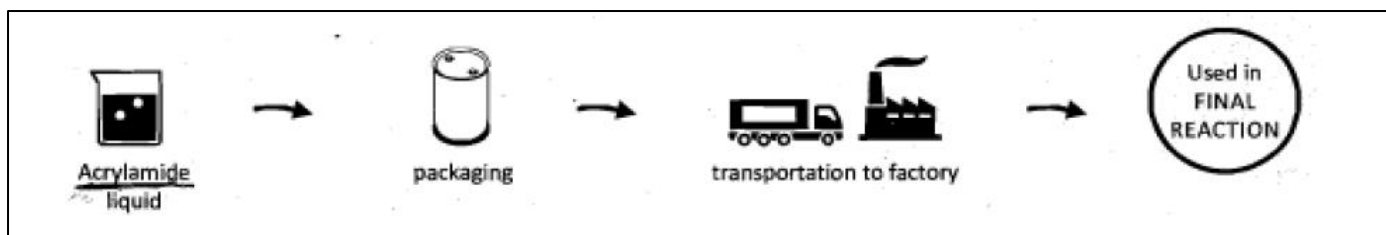
The Indian acrylamide market is estimated to be 7,000 MT on a 100% solid basis or 14,000 MT on the basis of acrylamide 50% solution. Globally, acrylamide is demanded in liquid form whereas Indian market largely consumes it in powder form as it is imported from other countries, largely China.

Supply process of powdered acrylamide:



Source: SKP Securities Ltd.

Supply process of liquid acrylamide:



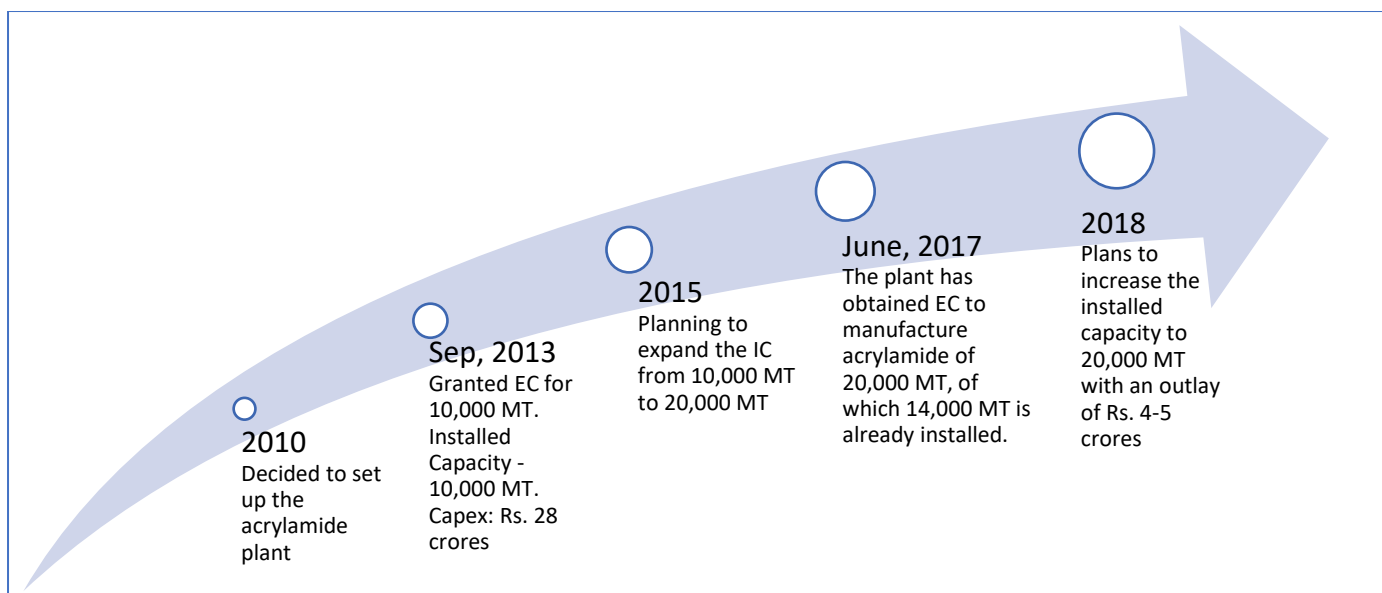
Source: SKP Securities Ltd.

Acrylamide is normally used as a liquid solution which means the powder has to be once again dissolved with water. As observed from above, liquid acrylamide, if available in India would cut down a lot of steps in the process for its customers, like custom duties (7.5% exclusive of charges), dissolution in water for conversion which involves high energy costs that gets passed on to customers and by avoiding the drying process entirely, the probability of contamination is reduced. Furthermore, the product comes as a solution in highly pure demineralised water, helping protect the final reaction from unwanted impurities and process fluctuations.

Looking at this opportunity and no player to cater to it, Black Rose saw this opportunity as a first mover advantage and decided in 2010 to set up a manufacturing facility of Acrylamide. In 2011, it entered into an exclusive Foreign Technology License Agreement with its long-term client in the distribution network, Mitsui Chemicals, Inc., of Japan, for its upcoming plant for the manufacture of acrylamide monomer.

The technology that has been licensed to the Company is an environmentally friendly biocatalyst technology and is already in use in other parts of the world by the licensor.

As the company has already been a distributor of acrylamide since long, it had a strong foothold and knowledge of this market.



Since, the commercial production of the acrylamide plant, the company has generated enormous sales growth along with the increase in the margins.

Sales (Amount in Lacs)	2013	2014	2015	2016	2017	2018
Acrylamide	-	522	2,767	3,597	4,855	5,875
Acrylamide sales growth			430%	30%	35%	21%
Chemical Distribution	8,232	7,657	10,918	8,423	10,613	12,312
Chemical Distribution sales growth		-7%	43%	-23%	26%	16%
Textile	120	110	180	180	240	150
Textile sales growth		-8%	64%	0%	33%	-38%
BR chemicals	3,700	3,100	4,900	4,900	7,600	10,000
BR chemicals sales growth		-16%	58%	0%	55%	32%
Renewable energy	121	108	108	142	95	100
Others	0	0	709	375	443	1,196
<b>Total</b>	<b>12,173</b>	<b>11,497</b>	<b>19,582</b>	<b>17,617</b>	<b>23,847</b>	<b>29,632</b>
<b>Total Sales CAGR (%)</b>		<b>-6%</b>	<b>70%</b>	<b>-10%</b>	<b>35%</b>	<b>24%</b>

Particulars (Amount in Lacs)	2013	2014	2015	2016	2017	2018
EBIT - Chemical Segment	543	189	509	901	1,380	2,200
EBIT Margin - Chemical Segment	5%	2%	3%	5%	6%	7%
Incremental EBIT from 2013 (Post-Acrylamide phase) (A)				358	836	1,657
Sales - Acrylamide (B)		522	2,767	3,597	4,855	5,875
EBIT Margin - Acrylamide (A / B)				10%	17%	28%
Total EBIT (C)	397	(50)	359	644	1,164	1,948
Total Sales (D)	12,200	11,517	19,596	17,721	24,173	29,770
EBIT Margin (C / D)	3%	0%	2%	4%	5%	7%

The EBIT in the first row is the segment-wise consolidated sales of the entire chemical (Distribution + B.R. Chemicals + Acrylamide) segment.

Now as observed above, the sales growth of chemical distribution segment has been very fluctuating and the B.R. Chemicals with Rs. 100 crores of revenue had generated PAT of less than 1 crore in FY 18. So, this makes us assume all the incremental EBIT to come from acrylamide segment. 2013 as a base was chosen as the company began its acrylamide production in the last quarter of FY14.

Capacity in MT	2014	2015	2016	2017	2018
Acrylamide Production	670	3,631	6,354	N/A	N/A
Acrylamide Installed Capacity	10,000	10,000	10,000	14,000	14,000
Capacity utilised	7%	36%	64%	N/A	N/A

**At a rate of Rs. 70,000 per tonne (Rs. 70 per Kg), the company can generate sales of Rs. 140 crores alone from acrylamide at 100% capacity utilisation (20,000 MT).** Assuming an EBIT margin of 25%, it can generate an EBIT of 35 crores from acrylamide itself.

**Entry into the polyacrylamide segment:**

Polyacrylamide (PAM) is a water-soluble polymer used as a flocculant, coagulant and filtration aid in a whole range of applications that are determined by its physical form and its ionic type (non-ionic, anionic and Mannich). PAM is commercially available in liquid or solid state in different forms, the most common being powder and emulsion.

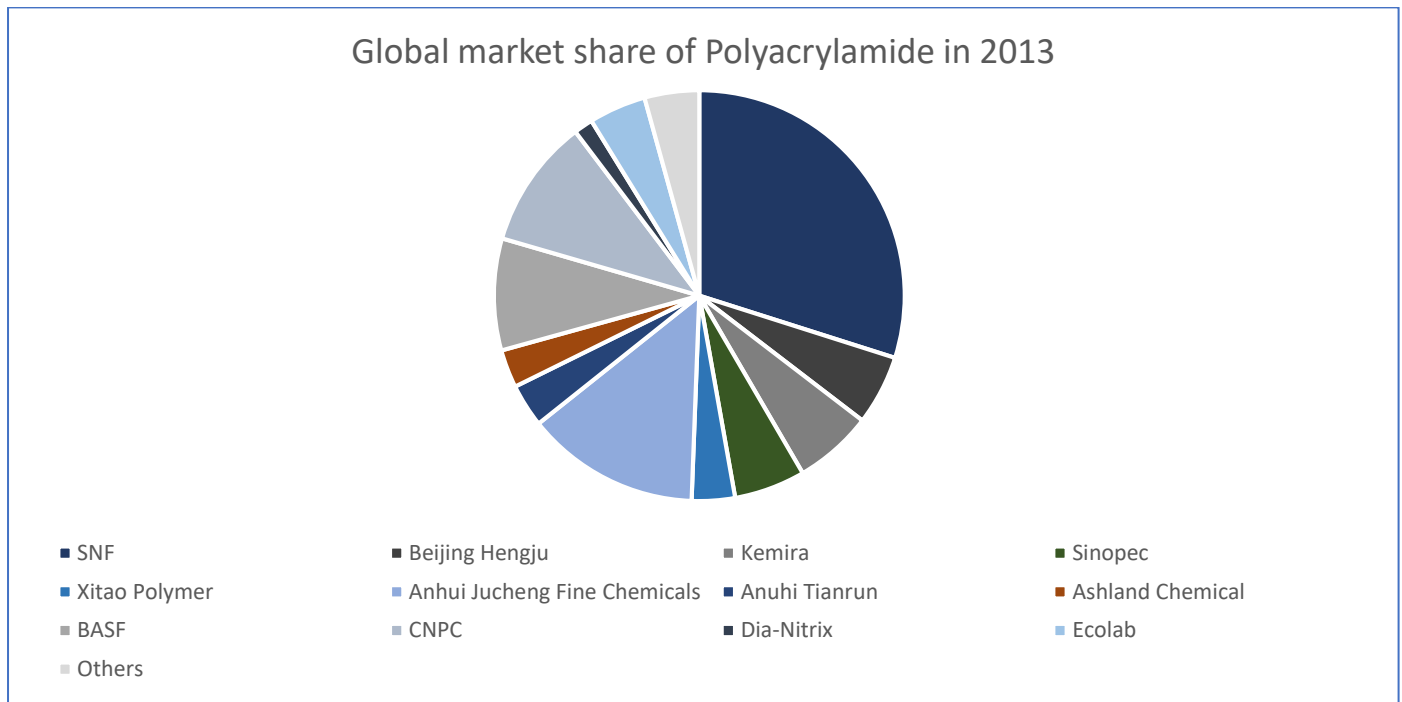
Uses: Polyacrylamide liquids are mainly used in the:

- Ceramic,
- Textile,
- Mining,
- Adhesive and
- Paper and paint industries

Uses: Polyacrylamide solids are used for:

- Industrial wastewater treatment,
- Sewage treatment,
- Oil extraction and
- Fracking applications.

Players in polyacrylamide segment:



Source: TranTech Consultants, Inc., August 2014

## A key competitor in Indian Market: SNF

The Indian market for polyacrylamide solids is 60,000 MT which is currently imported. SNF has recently applied for environmental clearance in 2017, to set up a manufacturing plant in India for polyacrylamide and acrylamide for the captive consumption to produce polyacrylamide.

SNF Flopam India Pvt. Ltd.	
Name of the product	Capacity Expansion
Acrylamide (100%)	1,20,000 MT/Year
Poly Acrylamide Powder	60,000 MT/Year
Poly Acrylamide Liquid	42,000 MT/Year
Poly Acrylamide Emulsions	36,000 MT/Year
Total	2,58,000 MT/Year
Capital Outlay	Rs. 400 crores

## New Driver for Polyacrylamide demand in India: Enhanced Oil Recovery

In line with international practices, recently the oil ministry has initiated a new policy wherein they shall be auctioning oil fields for extraction of crude oil via EOR technology. This shall enable the nation to double the oil output thereby reducing its dependence on import of costly oil. The implementation of this technology shall require large quantities of Polyacrylamide. Hence the proposed manufacturing of polyacrylamides indigenously shall be very instrumental in the locally available product at competitive prices.

Enhanced recovery is a set of techniques through which oil companies can boost production from otherwise lesser producing fields. The techniques comprise polymer injection and use of Alkaline Surfactant among others for improved recoveries.

This policy caters to existing and large upstream companies like Cairn India, Oil and Natural Gas Corporation (ONGC) and Oil India Ltd.

At present, Cairn India conducts polymer EOR to boost production. Cairn India (Acquired by Vedanta in April 2017), produces around 27% of India's domestic crude oil and plans to take this to around 50%. The Mangala field in Barmer, Rajasthan, discovered in January 2004, is the largest onshore oil discovery in India in more than two decades. Mangala, Bhagyam and Aishwariya fields – major discoveries in Rajasthan block – have gross ultimate oil recovery of over 1 billion barrels from primary, secondary and enhanced oil recovery (EOR) methods.

***In 2013, Cairn India gave an Expression of Interest (Eoi) for partially hydrolysed polyacrylamide (PAM) in powder form to bidders with at least 40,000 MT capacity.***

Currently, Cairn India is working on the EOR programme at Aishwariya fields, the EOR programme at Bhagyam and Barmer Hill and Aishwariya Barmer Hill, which is a tight oil (shale oil).

On August 9, 2018, Baker Hughes, a GE company, was awarded a development contract by Cairn Oil & Gas, Vedanta Limited to construct approximately 300 new wells and deploy a chemical EOR program aimed at increasing production from the Rajasthan area. To enhance recovery from existing wells, BHGE is designing an alkaline-surfactant-polymer (ASP) flooding solution– the first of its kind in operation in India.

The project is anticipated to begin in the second half of 2018 and continue for three years. This gives us tangible proof that demand for polyacrylamide is going to surge not only from wastewater treatment but also for EOR in India.

## BRIL – Project Expansion for polyacrylamide

Black Rose first applied for necessary government approvals and environmental clearance in May 2017, followed by Feb 2018 where it stated that it shall commence the construction of the proposed plant within 30 days of receipt of statutory approvals. It received the clearance in October 2018. The company envisages completion of the expansion within 6 months of start date.

Product Category	Capacity Expansion (MT per annum)
Polyacrylamides- Powder	10,000 MT
Polyacrylamides- Liquids	40,000 MT
Polycarboxylates	5,000 MT
n- Methylol-Acrylamide	2,000 MT
Total	57,000 MT
Capital Outlay	Rs. 60 crores

The raw material of the company is acrylamide. As per the data are given in SNF EIA report, for a production of 1 MT of polyacrylamide powder, 1.25 MT of acrylamide is required and for every 1 MT of polyacrylamide liquid, 0.3 MT of acrylamide is required. This amount given the capacity expansion of polyacrylamide, gives us total required acrylamide of 24,490 MT for the production of polyacrylamide. Therefore, the entire 20,000 MT of acrylamide capacity can be safely assumed for captive consumption.

***The company estimates that this additional expansion is expected to add 300 crores to the company's top-line. Even if this additional expansion is taken as an optionality, base case scenario of 20,000 MT alone gives us an EBIT of around Rs. 35 crores.***

### **Risks:**

**1. SNF setting up polyacrylamide plant in India:** Even though SNF hasn't yet received its EC, it still poses a threat as a key competitor to the company.

### **Promoter's Background:**

This company is a one-man show, led by Mr Anup Jatia who after graduating from California Institute of Technology in 1994 where he studied engineering and applied sciences, set up his company in Mumbai at the age of 23. He was born in India but grew up in Japan where his father moved from India to set up a trading business.

Started with importing Japanese chemicals, the business was slow for several years until relations between China and Japan deteriorated and India became a go to market for Japan. BRIL, having a well-established network of sellers, became one of the top agents of Japanese chemical companies, including Mitsui Chemicals.

It was the decision taken by Mitsui chemicals of not exporting acrylamide that made Anup think of making it himself in India.