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## SUMMARY

Abrasives are very hard substances. They are used for grinding and metal polishing. The Indian abrasive industry is a Rs. 450 crore industry. Abrasives are used in nearly all industrial applications wherein ferrous or non ferrous or metals or non metals are used. Abrasives are used in automobiles, steel conditioning & processing, bearings, construction, mining, stone cutting, shipping and fabrication industries.

Abrasives are classified into coated and bonded abrasives. Coated abrasives are manufactured by coating abrasive grains on the surface of a certain material. Bonded abrasives are manufactured by bonding together the abrasive grains. Bonded products account for 66% of the abrasives market while 33% comes from coated products. The market is basically duopolistic with Grindwell Norton Ltd. and Carborundum Universal Ltd. controlling more than 75 % of the market.

## INTRODUCTION

Abrasives are used in every industrial and engineering operations where iron and steel is used. They are used in grinding and finishing operations. The basic physical properties of an abrasive is hardness, toughness and resistance to fracture. The abrasive also needs to be heat resistant.

The abrasive industry in India started in 1940 with Grindwell starting its operations. Now there are many small players in this industry. There are three manufacturers having foreign collaborations or tie-ups, viz. Grindwell Norton Ltd., Carborundum Universal Ltd. and John Oakey and Mohan Ltd. The others are not major players in this industry and specialise in a specific product or product line. The abrasive industry's fortunes and performance is directly related to the overall economic activity and the consumption of steel. The presence of international players and massive imports from China, Korea and Taiwan at virtually throw away prices act as an entry barriers for the new entrants.

## MARKET

### Size

The abrasive market is approximately Rs. 450 crore. This does not include small players in the unorganised sector, who specialise in a single product line. The market is divided into bonded and coated abrasives depending upon its manufacturing process. The utility of coated abrasives is in polishing and other like operations whereas the bonded abrasives find use in grinding and cutting operations.

The market size of bonded and coated abrasives is in ratio of 66:33. Super abrasives comprise a very small part of the abrasive market due to its limited use in precision grinding and super fine finishing. The market has grown from Rs. 210 crore in 93-94 to Rs. 444 crore in 98-99. The imports rose from Rs. 29 crore in 93-94 to Rs. 45 crore in 98-99.

Most of the imports are from China, Korea & Taiwan. Imports are affecting Indian manufacturers due to the imports being at virtually rock bottom prices.

### Structure

There are as many as 25-30,000 types of abrasives products. Its use depends upon the application and the material to be ground or polished. The abrasives are classified into bonded and coated abrasives. They are used in automobiles, steel, fabrication, construction and bearings industry.

Kind of abrasive	Form	End use industry
Coated abrasives	Sheets, strips and belts	Automobiles, white goods, tannery and wood industry.
Bonded abrasives	Discs, cylinders and rings	Fabrication, heavy & light engineering, steel conditioning and construction
Super abrasives	Diamond, cubical boron nitride discs, wheels, saws, files, hones, etc.	Precision grinding and super finishing in engg. industry named above.

Both Grindwell and Carborundum are dominant players in both the segments.

**Table: Market Shares.**

	Grindwell	Carborundum
Coated	21 %	46 %
Bonded	40 %	43 %

Other manufacturers are very small in size as compared to these market leaders and command a very small sized market which is restricted to a specific product.

In India, Grindwell and Carborundum have reached a stage of comfortable co-existence in both institutional and retail markets. Most large buyers divide their orders between the two to ensure stable supply and reduce supply-side risk.

**Table: Production & Sales of Coated & Bonded Abrasives.**

<b>Coated Abrasives</b>									
	<b>Mar-98</b>			<b>Mar-99</b>			<b>Mar-00</b>		
	<b>Prodn. (000 nos/re ams)</b>	<b>Sales (000 nos / reams)</b>	<b>Sales (Rs. Crs)</b>	<b>Prodn. (000 nos/rea ms)</b>	<b>Sales (000 nos / reams)</b>	<b>Sales (Rs. Crs)</b>	<b>Prodn. (000 nos/re ams)</b>	<b>Sales (000 nos / reams)</b>	<b>Sales (Rs. Crs)</b>
Grindwell	8,030	7,950	29.9	8,850	8,720	32.60	7,185	6,761	42.41
Carborundum	187	186	57.32	195	195	63.02	213	204	63.02
John Oakey & Mohan	567	390	16.31	387	479	19.46	493	550	20.61
<b>Total</b>	<b>8,784</b>	<b>8,525</b>	<b>103.53</b>	<b>9,432</b>	<b>9,394</b>	<b>115.08</b>	<b>7,891</b>	<b>7,515</b>	<b>126.04</b>
<b>Bonded Abrasives</b>									
	<b>Mar-98</b>			<b>Mar-99</b>			<b>Mar-00</b>		
	<b>Prodn. (tons)</b>	<b>Sales (tons)</b>	<b>Sales (Rs.Cr)</b>	<b>Prodn. (tons)</b>	<b>Sales (tons)</b>	<b>Sales (Rs.Crs)</b>	<b>Prodn. (tons)</b>	<b>Sales (tons)</b>	<b>Sales (Rs.Cr s)</b>
Grindwell	6,896	6,756	114.13	6,909	6,835	111.26	6,867	6,964	108.87
Carborundum	8,391	8,180	115.29	7,537	7,640	117.12	7,456	7,195	118.41
Orient Abrasives	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
<b>Total</b>	<b>15,287</b>	<b>14,936</b>	<b>229.42</b>	<b>14,446</b>	<b>14,475</b>	<b>228.38</b>	<b>14,323</b>	<b>14,159</b>	<b>227.28</b>

## INPUTS & TECHNOLOGY

Abrasives are manufactured from any of the abrasive material mentioned here under: Diamond, Silicon Carbide, Aluminium Oxide, Alumina Zirconia, Tungsten Carbide, Cubical Boron Nitride, etc.

Coated abrasive products are manufactured by coating abrasive grains on a base material. Bonded abrasive products are manufactured by bonding the abrasive grain with resin, moulding it in a press and then baking it in an oven.

The production process defers with the product to be manufactured but the basic process will remain the same. The production parameters, which will vary are the kind of grains, resins, temperature and baking time in the oven and the pressure under which it is moulded.

## POLICY

The government has reduced import duty on raw material ie. Aluminium Oxide, etc. Also the government has reduced import duties on abrasives. The government has allowed private and foreign investment in the mineral exploration sector. Raw materials are also on the OGL list and free imports are allowed. Again the raw material can be imported duty free for processing and then exporting the same.

## INTERNATIONAL SCENARIO

The international scenario is completely different from the local. Against the duopoly in India there are many abrasive manufacturers who are either conglomerates or specialists in a certain product range. There are various big players like Norton, Carborundum, Cincinnati, Sait, etc. There are also gigantic plants in China, Korea and Taiwan and they are able to sell certain types of wheels at rock bottom prices in the international markets. The other reason for cost competitiveness of S.E.Asian abrasive manufacturers is low power cost, which in turn reduces the cost of Aluminium Oxide grains which is the raw material for manufacturing abrasive products.