



**ACTIVATED TO EXCEL**



**Western Carbon & Chemicals**

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Your global partner for better purification solutions







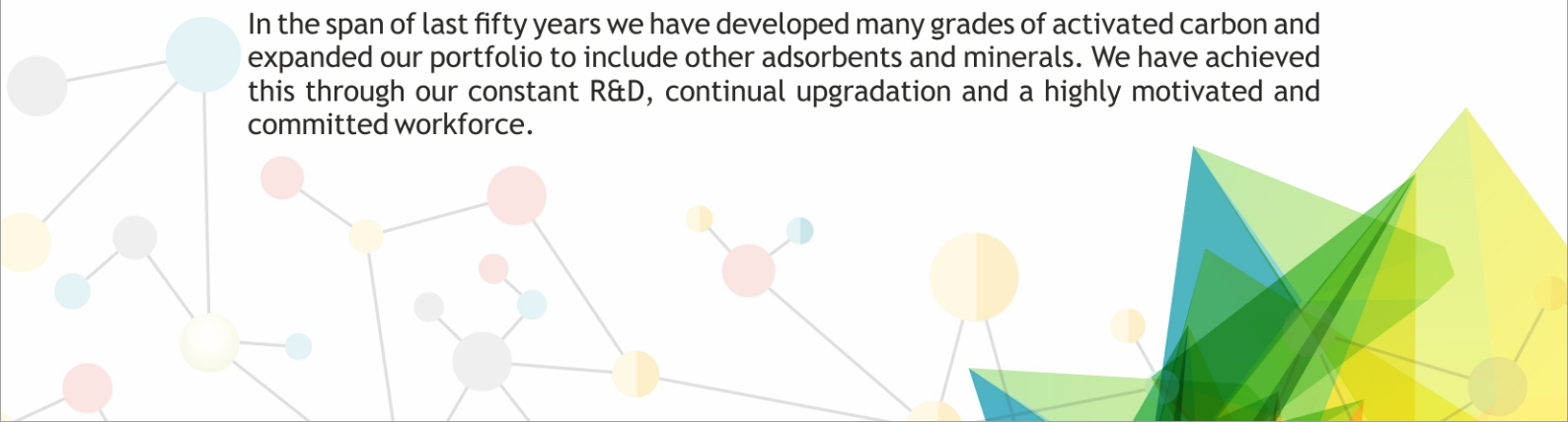
## Our Vision

***“To create a future where people are safe and the environment is protected from pollutants in air, water, food, consumables and industrial processes.”***

We work towards making this future a reality through our sustainable and people centric approach, technical and product expertise and technological proficiency.

## Our Mission

***“To deliver superior quality products and high growth for all stakeholders worldwide, through continuous technological upgradation, R & D, innovation and augmentation of our expertise, resources, processes and portfolio while maintaining an environment conscious approach across all business practises and endeavours.”***



In the span of last fifty years we have developed many grades of activated carbon and expanded our portfolio to include other adsorbents and minerals. We have achieved this through our constant R&D, continual upgradation and a highly motivated and committed workforce.







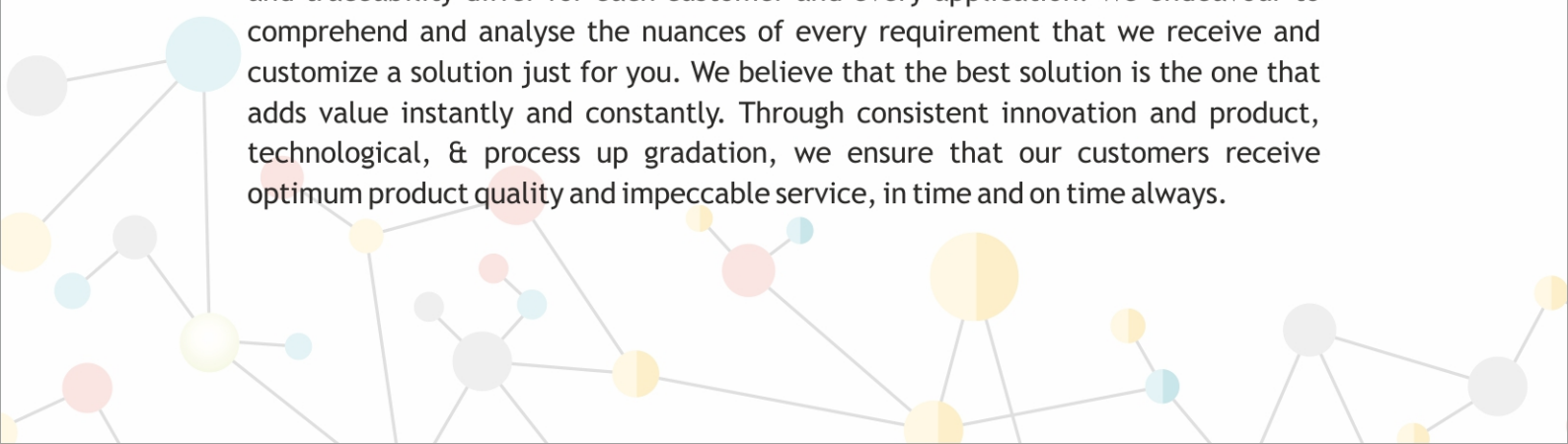
## Always a Step Ahead in Purification

Building on the experience of over fifty years of leading the way and consistently innovating in product development, technology and manufacturing, Western Carbon & Chemicals (W.C.C) is one of India's most trusted and renowned producers of activated carbon, adsorbents and minerals. Our purification and filtration solutions efficiently remove pollutants, contaminants and other impurities from water, air, food and beverages, pharmaceutical products and other liquids and gases. We have developed an extensive portfolio of coconut shell, coal and wood based activated carbon products, minerals and adsorbents that provide our customers a 'best fit' solution for any application. We serve customers in more than 27 countries across numerous industries.

At W.C.C, our focus is on helping customers meet their purification needs in a qualitative and cost-effective manner. We help our customers achieve this through our vast product range of customized activated carbons, anthracite coal, garnet, manganese dioxide, activated alumina balls, and ceramic balls, and services including carbon evaluation, technical support and bulk delivery.

We work towards an envisioned future free from contaminants through our technical and product expertise, sustainable and people centric approach and technological proficiency.

## A Cut above Competitors in Combating Contaminants



At W.C.C, our team of skilled experts understands that the need for quality, purity and traceability differ for each customer and every application. We endeavour to comprehend and analyse the nuances of every requirement that we receive and customize a solution just for you. We believe that the best solution is the one that adds value instantly and constantly. Through consistent innovation and product, technological, & process up gradation, we ensure that our customers receive optimum product quality and impeccable service, in time and on time always.







## Safeguarding the Future through a Sustainable Approach Today


As a pioneering carbon and chemical company, we take the welfare of all our employees, stakeholders and the environment very seriously. The underlying philosophy that compels our actions is “Clean Air, Pure Water and Green Earth for All”. We develop, innovate and improvise our products, solutions and processes to ensure that the social, ecological and economical impacts of our operations are positive to the regions in which we operate. We adhere to stringent international standards, have efficient processing equipment, certified processes and facility, and procure only natural eco-friendly raw materials.

## Leaving an Indelible Mark Globally

Since 1968, W.C.C has been making groundbreaking progress in the field of adsorbents and minerals. Located in Vadodara - Gujarat - India, we have been catering to filtration and purification needs of customers across Asia, Europe, and the Middle & Far-East countries. With a strong hold on developing customized products and solutions, we have fulfilled numerous requirements from the simplest to complex of applications across industries in air/gas/water treatment, water filtration, oil & gas, automotive, mining, food & beverages, pharmaceuticals, personal care and more. In addition to our product expertise and innovative approach, clients across the globe count on us for timely delivery of bulk shipments consistently.

## Quality is Our Top Priority

At W.C.C, we are committed to manufacturing and delivering adsorbents and minerals of unparalleled quality. To fulfil our commitment of quality to customers worldwide, we ensure that all our products are consistently produced and controlled to the quality standards appropriate for their intended use. Our skills, processes and technology are continuously upgraded, and we are up to date with the latest trends in the industry. **We are an accredited organization adhering to international ISO 9001:2008, Halal, Kosher, Food Safety Management (ISO 22000) & Good Manufacturing Practices (GMP) standards.**



# Think Purity. Think W.C.C

A Comprehensive Portfolio for all Your Adsorbent and Mineral Needs.

W.C.C offers a vast range of adsorbent and mineral products that are customized for application across processes. Whether you are looking for a cost-effective way to remove trace contaminants, output higher temperature or increase the potability of water, you can rely on W.C.C to provide you with high-performing products to meet the changing needs of your business.

## Anthracite Coal

Our range of Anthracite Coal offers best fit solutions for application in commercial, industrial, chemical and manufacturing industries. Categorized as the highest quality grade dark black coal, we supply anthracite coal that is from 40 to 90% of carbon content and has very low percentage of moisture and volatile matter. Owing to its clean burning properties and high-temperature potential, it makes for an exceptional source of energy.

### Features:

- 40-90% carbon content
- Low dust production
- Clean burning property
- High temperature potential

### Applications:

Highly suitable for residential and commercial heating, waste treatment and water filtration.



### Specifications of Anthracite

		Anthracite	Anthracite	Anthracite	Anthracite
PROPERTIES		40%	70%	80%	90%
Appearance		Black Granules			
Moisture	%max	10	5	5	5
Carbon Content	%min	40	70	80	90
Ash	%max	40	25	15	5
Hardness (MOH)		2-3	2-3	2-3	2-3



## Activated Carbon

Our specially manufactured high grade Activated Carbon has remarkably higher surface area, adsorption properties and retention rate. Our vast range of Activated Carbon products comes in a variety of sizes, forms and pore structures.

### Features:

- Low dust production
- Good abrasion resistance
- High organic compound capacity
- Enhanced pore structure

### Applications:

Highly suitable for food & beverage, industrial, personal care, pharmaceutical and environmental safety applications.



### Product Specifications:

#### Unwashed Activated Carbon

Unwashed Activated Carbon produced from Pine Wood, produced through steam activation, which has very little impurities resulting to higher adsorption

PROPERTIES		P-100	P-150	P-200	P-250	P-280	P-320
M B Value	mg/g	100	150	200	250	280	320
KMno4	%min.	20	25	45	55	60	70
Ash	%max	10	10	10	10	10	10
Iron (ppm)	max	1000	1000	800	800	600	500
Acid Soluble (HCl)	%max	10	10	10	10	10	10
Water Soluble	%max	5	5	3	2	2	1
L.O.D	%max	20	10	10	10	10	10
C1 & SO4		USP					
pH		Alkaline					
Particle Size		98 % Passes through 100 Mesh					

#### Acid Washed Activated Carbon

Acid Washed Activated Carbon from Pine, Wood, chemically activated. Suitable for several application among which are dechlorination, decolorisation and deodourisation

PROPERTIES		W-150	W-200	W-250	W-280	W-320
M B Value	mg/g	150	200	250	280	320
KMno4	%min.	25	35	45	55	65
Ash	%max	8	5	3	2	1
Iron (ppm)	max	300	200	200	150	100
Acid Soluble (HCl)	%max	5	3	2	2	1
Water Soluble	%max	5	1	1	1	1
L.O.D	%max	20	10	10	10	8
C1 & SO4		USP				
pH		6.0 to 7.5				
Particle Size		98 % Passes through 100 Mesh				

#### Granular Activated Carbon

Coconut shell charcoal based Granular Activated Carbon for water treatment and effluent treatment, Gold recovery and Gas Odor removal etc...

PROPERTIES		G-500	G-600	G-800	G-900	G-1000
Appearance		Black Granules				
Moisture	%max	5	5	5	5	5
Hardness	min	85	85	95	95	95
pH		8-11	8-11	8-11	8-11	8-11
Iodine Adsorption	mg/gm min	500	600	800	900	1000
Bulk Density	g/lit	0.50 ± 0.1	0.50 ± 0.1	0.50 ± 0.1	0.50 ± 0.1	0.50 ± 0.1
Ash	%max	5	5	5	5	5
Surface Areas	m <sup>2</sup> /gm	600	700	800	1000	1100
CTC Adsorption	%min	25	45	45	60	70

## Extruded Activated Carbon (Pellets)

Pelletized forms are Activated Carbon compressed into formed cylinders, and have wide variety of uses removing contaminants such as volatile organic compounds (VOC's) and mercury from natural gas as well as controlling odor.

Pelletized Activated Carbon is created by Extruding Activated Carbon into cylindrical shaped pellets with diameters 3, 4 and 5 mm. Their high activity and surface area make it ideal for many vapor phase applications. The uniformity of its shape makes it particularly useful in applications where low-pressure drop is a consideration.



Our Pelletized Activated Carbon is produced from coal, wood, and coconut shell by high-temperature steam activation and manufactured with suitable binders under stringent quality control. The pelletized carbon has a low ash content, large surface area, high mechanical strength, extended pore volume, and chemical stability. These characteristics make it ideal for many vapor phase applications. The adsorptive capacity of pelletized carbon makes it ideal for removing a variety of contaminants from air and gas streams, the recovery of solvents, and for evaporative emissions controls.

By varying manufacturing conditions, internal pore structures created that impart unique adsorption properties specific to each product type. It is widely used for desulfurization and de-nitrification of smokes and gas.

In the thermal power plant, steel plant, nonferrous metals smelting, fuel, gas, coal, furnace ammonia, garbage combustion industries etc.

### Specification Of Extruded Activated Carbon (Pellets)

PROPERTIES		WCC-EAC-500	WCC-EAC-600	WCC-EAC-700	WCC-EAC-800	WCC-EAC-900	WCC-EAC-1000
Diameter	mm	.....3, 4 & 5.....					
Iodine Adsorption	Min. mg/gm	500	600	700	800	900	1000
Ash Content	%Max	8 - 10	8 - 10	8 - 10	8 - 10	8 - 10	8 - 10
Moisture	%Max	5	5	5	5	5	5
Bulk Density	gm./cc	0.5-0.6	0.5-0.6	0.5-0.6	0.5-0.6	0.5-0.6	0.5-0.6
Hardness	Min	95	95	95	95	95	95
CTC Adsorption	Min	-	-	-	35-40	40-45	50-55



## Ion Exchange Resins

To suit the precise needs of our customers in various segments and applications we operate on the concept of strategic business units covering a wide range of technologies and applications.

Today, WCC offers a full range of Ion Exchange Resins required for different water treatment processes. To suit various plant designs and operating parameters we offer Choice of Gel / Microporous or Macroporous structures and different grades to our customers. We ensure perfect compatibility with existing resins for topping-up requirements. Our Research and development team ensures continuous product improvement and to maintain high standards of quality assurance.



The Ion Resins have been tested and approved by various laboratories and are extensively used by the Power Sector, Fertilizer and Chemical Complexes, Refineries, Textile, Paper, Pharmaceuticals Units, Breweries, Dairies and several others all over the country and abroad, for their requirement of high quality treated water.

### Typical Specification For WCC ION Exchange Resins

Strong Acid Cation Exchange Resin					
WCC GRADE	WCC-ION-80	WCC-ION-100	WCC-ION-100	WCC-ION-100MB	WCC-ION-100SP
Supply Form	Na+	Na+	Na+	Na+	Na+
Functional Group	RSO <sub>3</sub> Na+	RSO <sub>3</sub> Na+	RSO <sub>3</sub> Na+	RSO <sub>3</sub> Na+	RSO <sub>3</sub> Na+
Screen Size BSS	-14+52	-14+52	-14+52	-14+36	-14+44
Water Retention%	48-53	50-53	43-47	50-53	42-44
Swelling Na <sup>+</sup> ->H <sup>+</sup>	8	7	7	7	7
Dry Capacity (Meg/Gm)	4.4-4.8	4.8-5.0	4.4-4.6	4.8-5.0	4.4-4.6
Volume Capacity (Meg/Gm)	1.7-1.9	1.8-2.0	1.9-2.0	1.8-2.0	2.0-2.2
Bulk Density #(Gms/Lit)	750-800	780-830	820-870	790-840	790-840
Effective Size mm	0.5-0.55	0.5-0.55	0.5-0.55	0.5-0.55	0.5-0.55
Uniform Coeff max	1.7	1.7	1.7	1.7	1.7
Voids Volume%	35-40	35-40	35-40	35-40	35-40

Strong Base Anion Exchange Resin				
WCC GRADE	WCC-ION-400	WCC-ION-600MP	WCC-ION-410	WCC-ION-610MP
Supply Form	Cl-	Cl-	Cl-	Cl-
Functional Group	RN(CH <sub>3</sub> ) <sub>3</sub> <sup>+</sup>	RN(CH <sub>3</sub> ) <sub>3</sub> <sup>+</sup>	RN(CH <sub>3</sub> ) <sub>2</sub> C <sub>2</sub> H <sub>4</sub> OH <sup>+</sup>	RN(CH <sub>3</sub> ) <sub>2</sub> C <sub>2</sub> H <sub>4</sub> OH <sup>+</sup>
Screen Size BSS	-14+52	-14+52	-14+52	-14+
Volume Capacity (Meq/ML)(Min)	1.2	1.2	1.3	1.3
Bulk Density #(Gms/Lit)	700-720	690-720	700-730	690-720
Effective Size mm	0.45-0.55	0.45-0.55	0.45-0.55	0.45-0.55
Uniform Coeff max	1.7	1.7	1.7	1.7
Voids Volume%	35-40	35-40	35-40	35-40

Weak Base Anion Exchange Resin			Weak Acid Cation Exchange Resin
WCC GRADE	WCC-ION-650MP	WCC-ION-850MP	WCC-ION-50
Supply Form	FREE BASE	FREE BASE	HYDROGEN
Functional Group	RNH <sub>2</sub> /RNH <sub>3</sub> <sup>+</sup>	RNH <sub>2</sub>	RCOOH
Screen Size BSS	-14 +52	-14 +52	-14 +52
Volume Capacity (Meq/ML)(Min)	1.5	1.8	4.0
Bulk Density #(Gms/Lit)	650-700	650-700	800-850
Effective Size mm	0.45-0.55	0.45-0.55	0.45-0.55
Uniform Coeff max	1.7	1.7	1.7
Voids Volume%	35-40	35-40	35-40

Ready To Use Mixed Beds - Supercharged Resins				
WCC GRADE	WCC-ION-1101	WCC-ION-1151	WCC-ION-1152	WCC-ION-1201
Component Description	50% strong acid cation gel & 50% strong base anion gel type-I	40% strong acid cation gel & 60% strong base anion gel type-I	40% strong acid cation gel & 60% strong base anion gel type-II	33% strong acid cation gel & 67% strong base anion gel type-I

## Manganese Dioxide

We are one of the prominent manufacturers, suppliers and exporters of Manganese Dioxide in India catering to worldwide demands. Our comprehensive range of Manganese Dioxide is available in contamination free constitution without any additives.

### Features:

- High catalytic activity
- Inert and non-toxic

### Applications:

Highly suitable for purification and filtration processes for removal of iron and manganese from potable water.



### Specifications of Manganese Dioxide

PROPERTIES		Standard	
MnO <sub>2</sub> Content	%min	30 - 40	65
Appearance		Black Granular	
Particle Size	mm	As required	
Moisture	%max	10	
Ash Content	%max	3	
Bulk Density	kg/m <sup>3</sup>	1700	





## Garnet

As a naturally occurring silicate mineral deposit, we procure our high-grade Abrasive Garnet from some of the top-rated Garnet deposits in India. We offer a wide range of different grades of Abrasive Garnet that is safe, versatile, semi-reusable, long lasting and cost effective. Apart from Abrasive Garnet we also offer various grades of river and Bengal Bay garnet.

### Features:

- Extreme hardness
- Low dust production
- Inert and non-toxic

### Applications:

Highly suitable for blast cleaning, cleaning of aluminium and fibreglass structures, and closed confined spaces that necessitate high precaution against water contamination, water jet cutting and water filtration.



### Specifications of Garnet

PROPERTIES		WCC-GARNET 20-40 MESH	WCC-GARNET 30-60 MESH	WCC-GARNET 80 MESH	WCC-GARNET 120 MESH
Appearance		Red-Pink Sub Angular			
SiO <sub>2</sub>	%max	39	39	39	39
Al <sub>2</sub> O <sub>3</sub>	%max	39	39	39	39
Fe <sub>2</sub> O <sub>3</sub>	%max	35	35	35	35
CaO	%max	3	3	3	3
MgO	%max	5	5	5	5
TiO <sub>2</sub>	%max	0.4	0.4	0.4	0.4
Specific Gravity		4	4	4	4
Bulk Density	g/cc	3	3	3	3
Chloride	%max	0.1	0.1	0.1	0.1
Hardness	Moh Scale	6-8	6-8	6-8	6-8
Typical Conductivity		60	60	60	60

## Activated Alumina balls

Keeping in tune with our commitment to innovation and upgradation we expanded our portfolio of filtration and purification products to include Activated Alumina Balls. W.C.C's Activated Alumina Balls are an efficient solution for numerous adsorbent and catalyst applications. They are long lasting and thus prove to be cost-effective for our customers.

### Features:

- High water adsorption
- Enhanced surface area
- Available in acidic, basic and neutral grades

### Applications:

Highly suitable for oil filtration, compressed air & gas drying processes in petrochemical plants and for fluoride removal from aqueous solutions.



### Specifications of Activated Alumina Balls

PROPERTIES		WCC- Activated Alumina Balls
Appearance		White Spherical Beads
Size	mm	1-3,2-5,3-5,5-8,8-10
Bulk Density	g/1	0.7-0.8
BET Surface Area	m <sup>2</sup> / g	300-425
Pore Volume	g / cc	0.40-0.50
Adsorption Capacity(60% RH)		20-26
Attrition loss	%	0.2
Na <sub>2</sub> O <sub>3</sub>		0.1-0.3
Fe <sub>2</sub> O <sub>3</sub>		0.02-0.12
SiO <sub>2</sub>		0.1-0.5
Crushing Strength(kgf/cm <sup>2</sup> )		8-12
LOI (300 °C-1000 °C)		6-8
Al <sub>2</sub> O <sub>3</sub>		92-95

### Specifications of Activated Alumina Balls

PROPERTIES		WCC- Activated Alumina Balls
Appearance		White Spherical Beads
Size	mm	1-3,2-5,4-8
Uniformity Coefficient	min	1.6
Total Capacity for Fluoride Pickup	Min mg/g	2.85 media @ equal
pH		5.5
Apparent Bulk Density	Kg/m <sup>3</sup>	720-800
Porosity	%max	65
Pore Volume	cm <sup>3</sup> / g	0.42-0.49
Crushing Strength-Newton	max	120N
Loss on Ignition LOI		6-10% @ 300 °C
BET Surface Area	m <sup>2</sup> / g	300-425
Al <sub>2</sub> O <sub>3</sub>		92-95
Na <sub>2</sub> O		0.1-0.3
Fe <sub>2</sub> O <sub>3</sub>		0.02-0.12



## Ceramic Balls

Ceramic Balls are one of the latest additions to our extensive portfolio of qualitative products and solutions. Made from a variety of ceramic materials, our comprehensive range of Ceramic Balls are spherical rolling elements that are available in various dimensions and provide superior mechanical, thermal, magnetic, chemical, and insulation characteristics.

### Features:

- Enhance corrosion resistance
- Low thermal expansion
- Light weight
- Enhanced electrical resistance

### Applications:

Highly suitable as catalyst support in a variety of applications in refineries, synthesis gas and other petrochemical processes.



## Specifications of Ceramic Balls

PROPERTIES		WCC-Ceramic Balls 25	WCC-Ceramic Balls 50	WCC-Ceramic Balls 95
Appearance		White Spherical Beads		
Al <sub>2</sub> O <sub>3</sub>	%	20-26	45-52	99
SiO <sub>2</sub>	%	65-72	45-55	0.20
SiO <sub>2</sub> + Al <sub>2</sub> O <sub>3</sub>	% max	92	-	-
K <sub>2</sub> O	%	2-3	2-3	
Na <sub>2</sub> O	%	1.3-1.8	0.5-1.5	0.40
CaO	%	0.5-1.1	0.5-1.5	-
MgO	%	0.5-1.2	0.5-1.5	-
Fe <sub>2</sub> O <sub>3</sub>	%	0.4-0.8	1	0.10
TiO <sub>2</sub>	%	0.4-0.8	-	-
Leachable Iron	% min	0.1	-	-
Apparent Porosity (By volume)	% max	1	1	1
Water Absorption (By weight)	% max	0.4	0.4	0.4
Particle Density (Material piece density)	g/cc	2.2-2.4	2.4-2.6	3-3.5
Working Temp		1000 °C	1450 °C	1800 °C
Roundness	dmax/dmin mm	1.25	1.25	1.25
Thermal Expansion Coefficient, 1/K		4.7x10 <sup>-6</sup>	4.9x10 <sup>-6</sup>	6.7x10 <sup>-6</sup>
Spec. Thermal Energy, kj/(kg x k)		~ 0.84	~ 0.94	~ 1.1
Thermal Conductivity, kj/(m x h x k)		~ 6.3	~ 7.0	~ 14.6

## Crushing Strength (Point Load): Kgs/lbs/n

SIZE	SIZE RANGE	Kgs			Lbs			n		
		kgs	lbs	n	kgs	lbs	n	kgs	lbs	n
1/8"-3mm	2 to 5 mm	>25	55	245	>57	126	558	>75	165	735
1/4"-6mm	5 to 8 mm	>65	143	637	>113	249	1108	>150	331	1471
1/2"-12mm	11 to 14 mm	>180	397	1765	>230	507	2256	>300	661	2942
3/4"-19mm	17 to 21 mm	>430	948	4217	>480	1058	4707	>600	1323	5884
1"-25mm	23 to 27 mm	>650	1433	6374	>700	1543	6865	>800	1764	7845
1½"---38mm	34 to 40 mm	>910	2006	8924	>1000	2205	9807	>1100	2425	10787
2"---50mm	47 to 53mm	>1100	2425	10787	>1200	2645	11768	>1500	3307	14710

## Average Ball Value

SIZE	SIZE RANGE	Void Space, %		Void Fraction	Surface Area
		Min	Max	%	%
1/8"-3mm	2 to 5 mm	42	45	0.425	1250
1/4"-6mm	5 to 8 mm	42	45	0.425	500
1/2"-12mm	11 to 14 mm	42	45	0.425	280
3/4"-19mm	17 to 21 mm	42	45	0.425	170
1"-25mm	23 to 27 mm	42	45	0.425	125
1½"---38mm	34 to 40 mm	42	45	0.425	85
2"---50mm	47 to 53mm	42	45	0.425	45



## Molecular Sieves

Molecular Sieves or Zeolite are normally used in the process of drying gases and liquids. Molecular Sieves are a crystalline composition with uniform pores that is measured in angstroms. This composition makes Molecular Sieve more effective than other types of desiccants. These desiccants are extremely effective in removing water from liquids and gases and are even more effective than silica gel. Because of their crystalline composition they can create virtually water free products. The sieves are very useful in cryogenic operations where liquefaction of gases is required and water must be eliminated to avoid freezing. These sieves are used for drying gas streams within the petroleum industry, they are also used to dry solvent within a laboratory along with an extensive range of catalytic applications. Additionally Molecular Sieves are used in a great many air and liquid filtration scenarios.

### Specifications of Molecular Sieve WCC 3A

Nominal Dia : 3A'1A' = 108 CM							
From : Cylindrical Pellets & Spheres							
	Unit	1.5 mm dia Cylindrical Pellets		3.0 mm dia Cylindrical Pellets		2-4 mm dia Cylindrical Pellets	
		Range	Typical	Range	Typical	Range	Typical
Equilibrium Water Adsorption Capacity at 30°C and 15% RH	%w/w	19-23	21.0	19.0-23.0	21.0	19.0-23.0	21.0
Equilibrium Water Adsorption Capacity at 30°C and 75% RH	%w/w	22-27	23.5	22-27	23.5	22-26	23.5
Thermal stability after 6000 C Equilibrium Water Adsorption, Capacity at 300 C and 15% RH	%w/w	19-23	21.0	19.0-23.0	21.0	19.0-23.0	21.0
Crushing Strength (Active)	Kg	3.0-7.0	5.0	5-12	9.0	3-7	5.0
Attrition Loss on Tumbling	%w/w	0.02-0.15	0.10	0.02-0.3	0.15	0.02-0.25	0.1
Free Moisture (Max.)	%w/w	-	1.5	-	1.5	-	1.5
Bulk Density	gms/cc	0.68-0.78	0.75	0.68-0.78	0.74	0.75-0.85	0.81
Bed Crushing Strength	%w/w	80-90	84	80-90	87.0	80-90	85.0

#### Applications:

Cracked Gas and Olefins drying, liquid or gas Propylene drying, drying of organic liquid like Methanol, Olefins, Ethanol, insulating glass manufacture, drying of CO<sub>2</sub>, Solvents, Reactant Mixtures, Gases and Liquid in the pharmaceuticals, paints, chemicals and allied industries.

### Specifications of Molecular Sieve WCC 4A

	Unit	3.0 mm dia Cylindrical Pellets		2-4 mm dia Spheres	
		Range	Typical	Range	Typical
Equilibrium Water Adsorption Capacity at 30°C and 15% RH	%w/w	18.0-20.0	18.5	18.0-22.0	19.0
Equilibrium Water Adsorption Capacity at 30°C and 75% RH	%w/w	20.0-23.0	21.5	20.0-23.0	22.0
Thermal stability after 6000 C Equilibrium Water Adsorption, Capacity at 300 C and 15% RH	%w/w	18.0-20.0	18.5	18.0-20.0	19.0
Crushing Strength	Kg	6.0-16.0	10.0	4.0-8.0	6.0
Attrition Loss On Tumbling	%w/w	0.02-0.3	0.15	0.02-0.15	0.05
Bulk Density	Kg/Lit	0.60-0.70	0.65	0.75-0.85	0.81
Free Moisture (Max.)	%w/w	1.5	-	1.5	-
Bed Crushing Strength	%	80-90	88	80-90	88

#### Applications:

Moisture removal/drying from associated gas (LPG) down to dew point of around 90 C, Simultaneous removal of moisture and co<sub>2</sub> from Gaseous streams, organic liquid drying, removal of moisture and CO<sub>2</sub> from feed air to Cryogenic plants, Air drying for dew point to less than 60C.



## Specifications of Molecular Sieve WCC 5A

Nominal Dia : 5A'1A' = 10 <sup>8</sup> CM							
From : Cylindrical Pellets & Spheres							
	Unit	1.5 mm dia Cylindrical Pellets		3.0 mm dia Cylindrical Pellets		2-4 mm dia Spheres	
		Range	Typical	Range	Typical	Range	Typical
Equilibrium Water Adsorption Capacity at 30°C and 15% RH	%w/w	18-22	20.5	18-22	20.5	18-22	20.0
Equilibrium Water Adsorption Capacity at 30°C and 75% RH	%w/w	21-25	23.0	21-25	23.0	21-25	23.0
Thermal stability after 6000 C Equilibrium Water Adsorption, Capacity at 300 C and 15% RH	%w/w	18-22	20.5	18-22	20.5	18-22	20.0
CO2 ads, Capacity 760 mm Hg. At 30°C	%w/w	17-22	20.0	17-22	20.0	17-22	20.0
Crushing Strength (Active)	Kg	3.0-7.0	4.0	8-15	10.0	3.0-8.0	5.0
Attrition Loss on Tumbling	%w/w	0.02-0.2	0.1	0.02-0.3	0.2	0.02-0.3	0.1
Free Moisture (Max.)	%w/w	-	1.5	-	1.5	-	1.5
Bulk Density	gms/cc	0.70-0.80	0.75	0.70-0.80	0.75	0.75-0.85	0.81
Bed Crushing Strength	%w/w	80-90	84.0	80-90	86.0	80-90	85.0

### Applications:

Removal of traces of Methanol and CO<sub>2</sub> from N<sub>2</sub> Stream in Nitrogen wash unit in fertilizer plant, Removal of H<sub>2</sub>O, CO<sub>2</sub>, H<sub>2</sub>S and Mercaptans from Liquefied natural gas, drying and purification of inert gas, Oxygen air enrichment with concentration of O<sub>2</sub> up to 93%, Purification and enrichment of H<sub>2</sub> from 60% to 98% and above.

## Specifications of Molecular Sieve WCC 13X

Nominal Pore Diameter : 1 nm							
From : Cylindrical Pellets & Spheres							
	Unit	1.5 mm dia Cylindrical Pellets		3.0 mm dia Cylindrical Pellets		2-4 mm dia Spheres	
		Range	Typical	Range	Typical	Range	Typical
Equilibrium Water Adsorption Capacity at 30°C and 15% RH	%w/w	20-23	21.0	20-23	21.0	20-23	21.5
Equilibrium Water Adsorption Capacity at 30°C and 75% RH	%w/w	23-27	26.0	23-27	26.0	23-27	26.0
Thermal stability after 6000 C Equilibrium Water Adsorption, Capacity at 300 C and 15% RH	%w/w	20-23	21.0	20-23	21.0	20-23	21.5
CO2 ads, Capacity 760 mm Hg. At 30°C	%w/w	19.0-20.5	19.5	19.0-20.5	19.5	19-20.5	19.5
Crushing Strength (Active)	Kg	2.0-6.0	4.0	5.0-12.0	7.0	3.0-7.0	5.0
Attrition Loss on Tumbling	%w/w	0.02-0.2	0.1	0.02-0.4	0.2	0.02-0.25	0.1
Free Moisture (Max.)	%w/w	1.5	-	1.5	-	1.5	-
Bulk Density	Kg/Lit.	0.55-0.63	0.58	0.55-0.63	0.57	0.60-0.70	0.65
Bed Crushing Strength	%w/w	80-90	87	80-90	90	80-90	85

### Applications:

Simultaneous removal of Moisture and CO<sub>2</sub> from feed air of air Separation / Cryogenic plant, Mercaptans removal from gaseous streams, Process air drying of dew point less than minus 60 C for sulphonation plant. Sweetening of Natural Gas, removal of H<sub>2</sub>S from Gaseous streams



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