

Your partner in progress

HANIL CHEMICAL

We promise to meet our customer needs with continuous research & development and high-quality products.



- **PART I . Company Introduction**

Company profile

History and Key accounts

- **PART II. Product information**

Zinc Oxide Manufacturing Process chart

Particle Morphology based on the manufacturing methods, Production Capacity

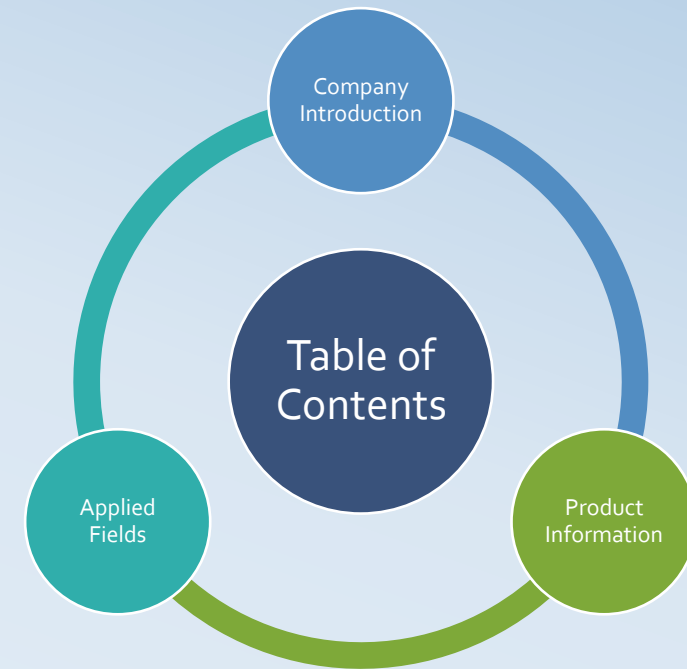
Product Specification

HBC–23 Manufacturing Process chart

HBC-23 Product Specification

- **PART III. Applied Fields**

Applicable fields of Zinc Oxide – Rubber, Electronic Materials, Cosmetics, and Antibacterial



PART I . Company Introduction



COMPANY PROFILE

COMPANY

HANIL CHEMICAL IND. CO., LTD

FOUNDING YEAR

1961.

MAIN PRODUCT

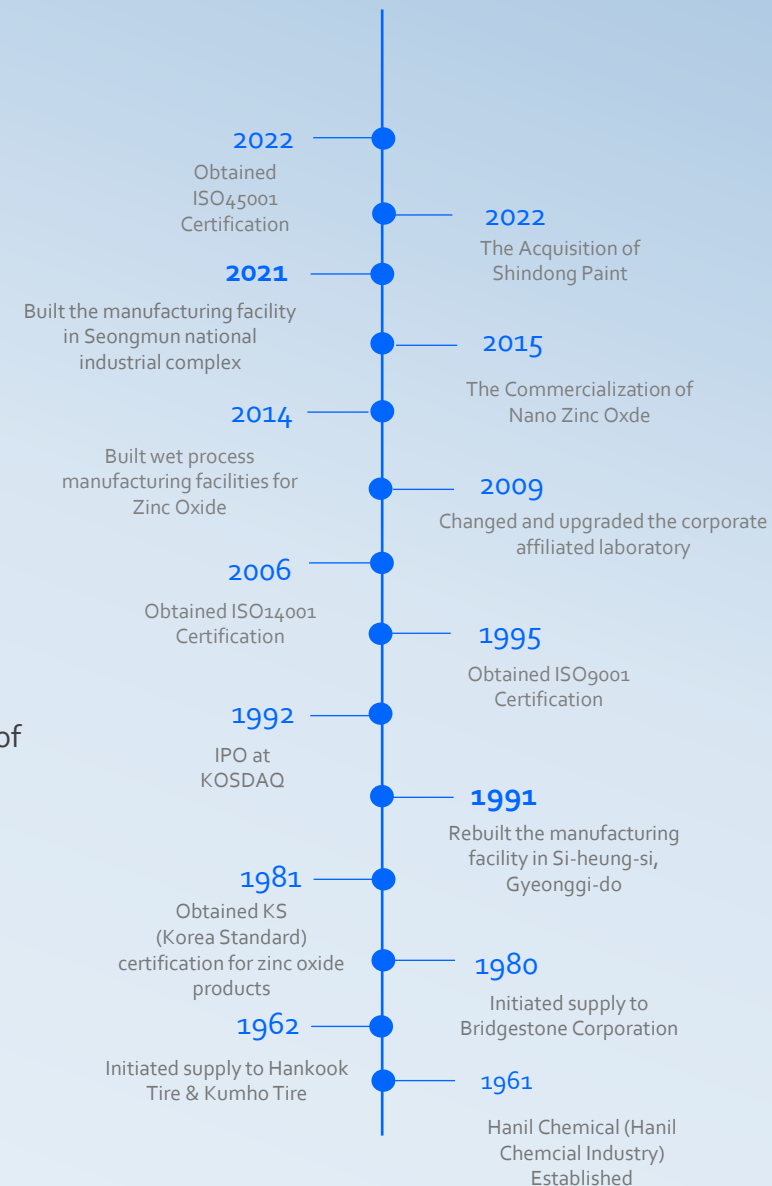
ZINC OXIDE (ZnO)

MAIN FACTORY

47, Sandan 3-ro 6-gil, Seongmun-myeon,
Dangjin-si, Chungcheongnam-do, Republic of
Korea

SEOUL OFFICE

612, Seolleung-ro, Gangnam-gu, Seoul,
Republic of Korea



Hanil Chemical Ind. Co., LTD – Dangjin Factory profile



Construction
Completion Date

April 9th, 2021

Total Site Area

82,863m²

Building Area

41,430.80m²

Building Coverage

13,934.53m²

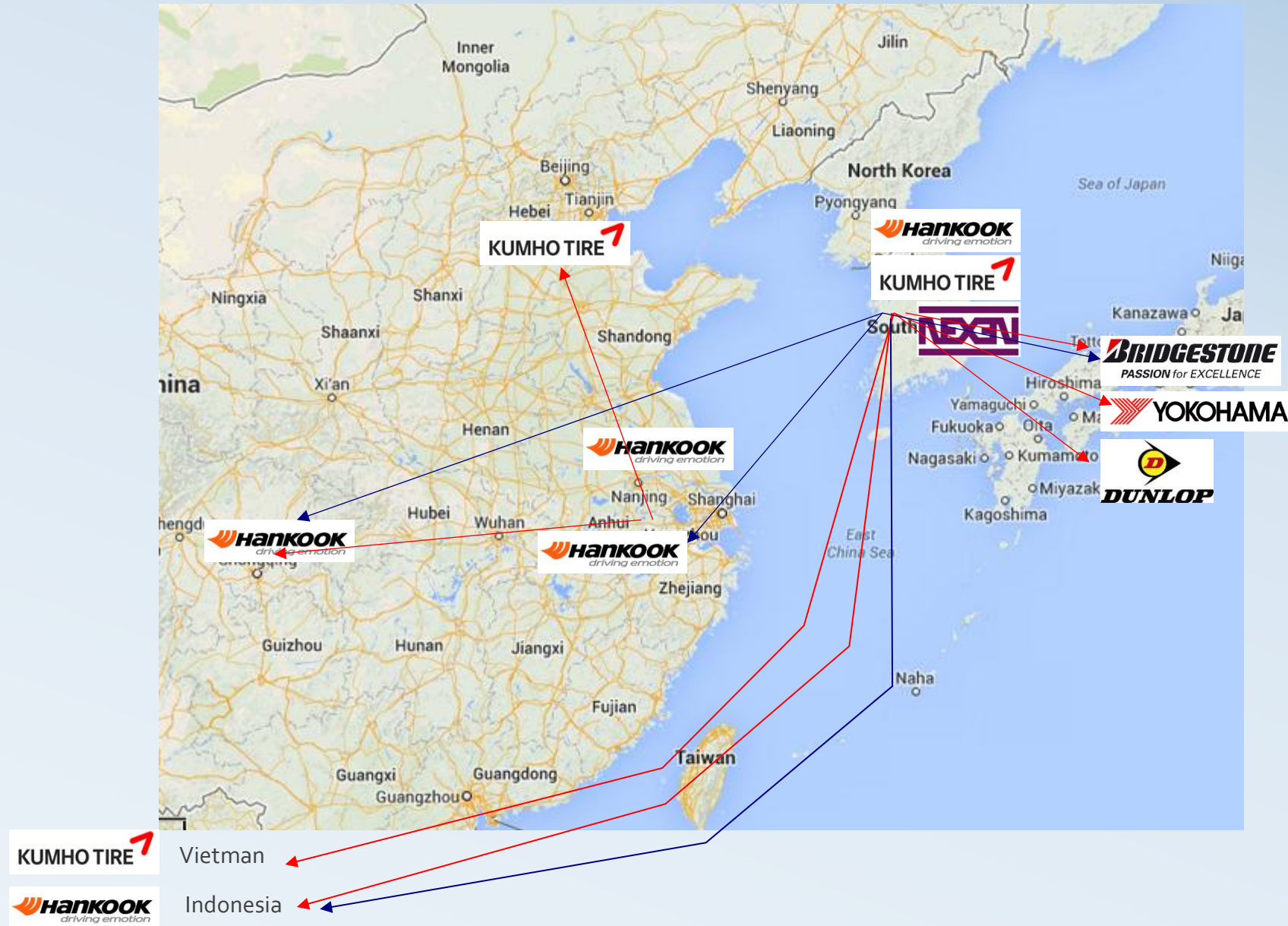
Gross Floor Area

15,680.44m²

Number of Building
Floors

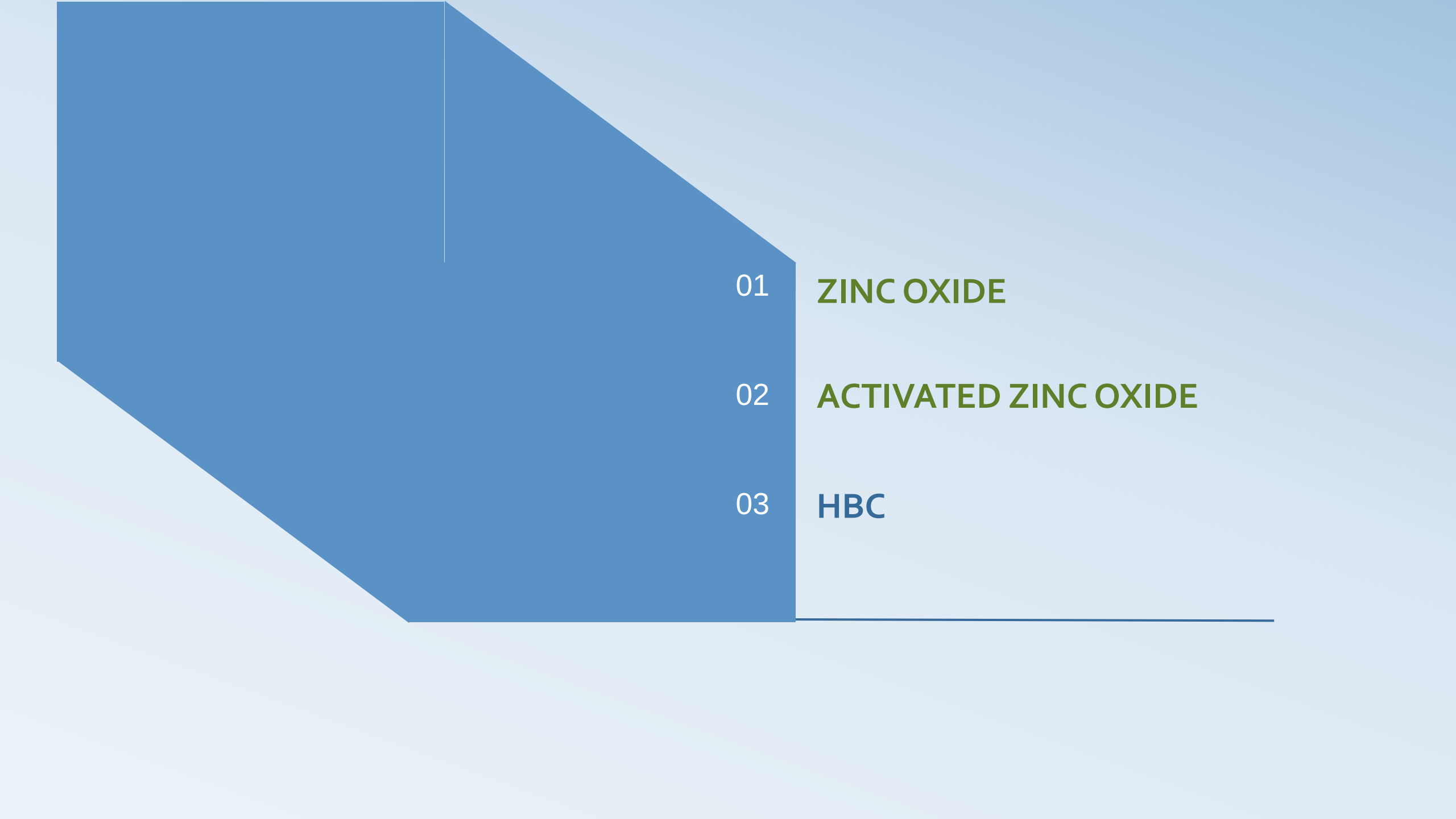
1 ~ 2 floors

Key Accounts



PART II. Product Information





01

ZINC OXIDE

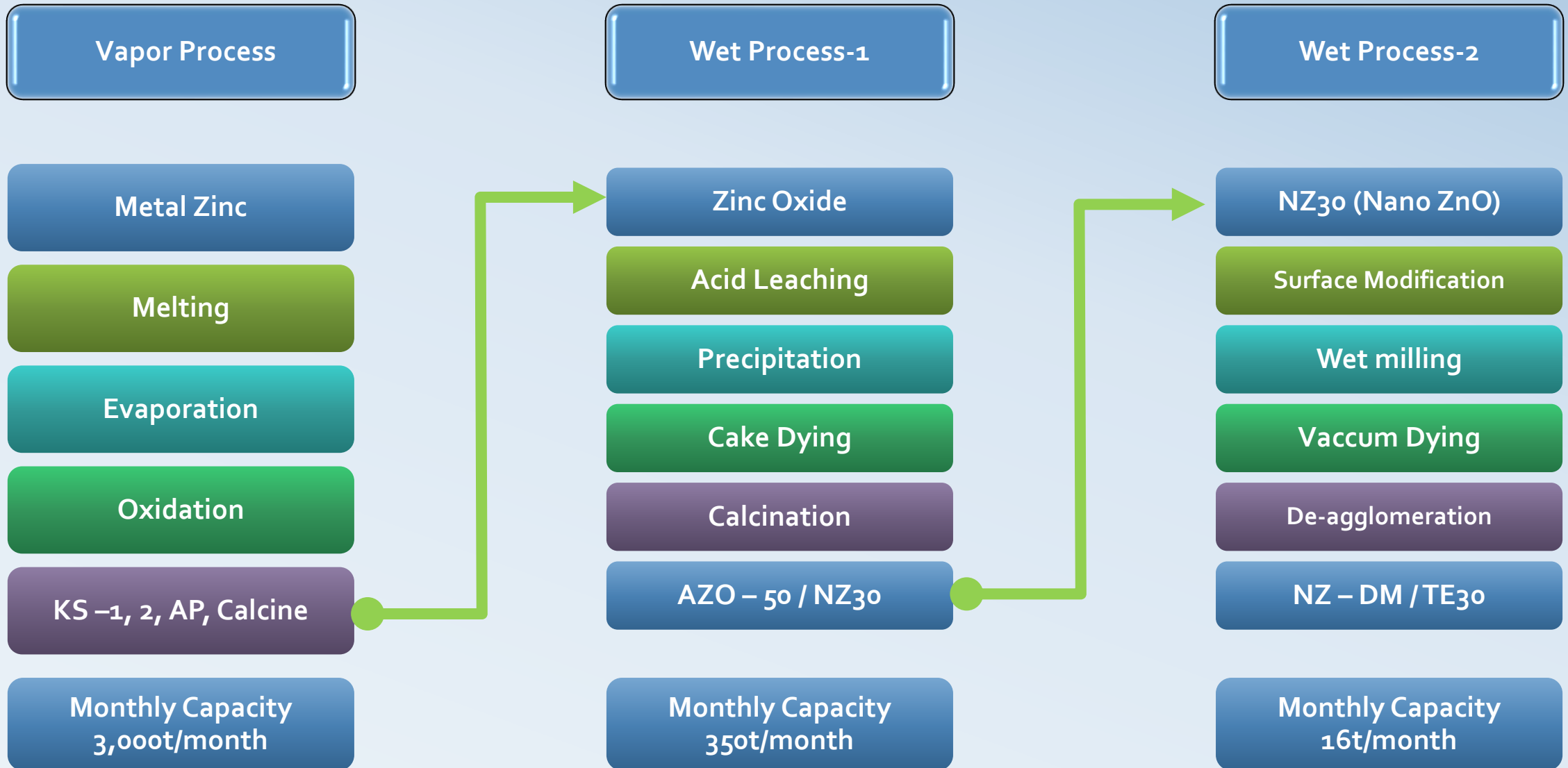
02

ACTIVATED ZINC OXIDE

03

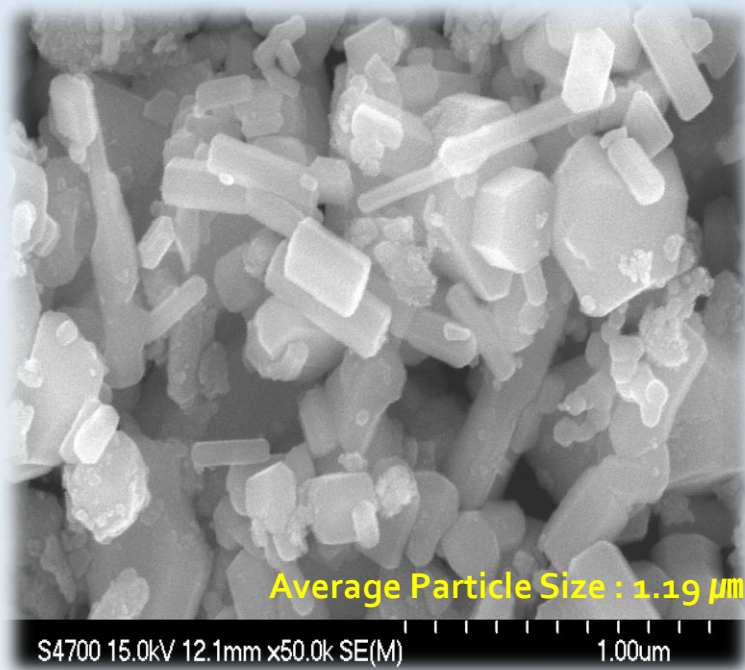
HBC

Zinc Oxide Manufacturing Process Chart



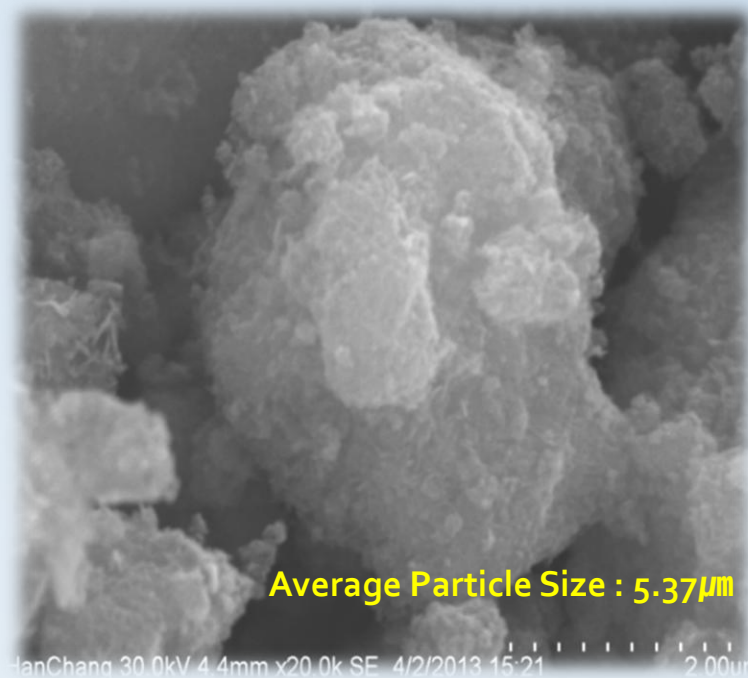
Particle Morphology based on the Manufacturing Methods

Vapor Process



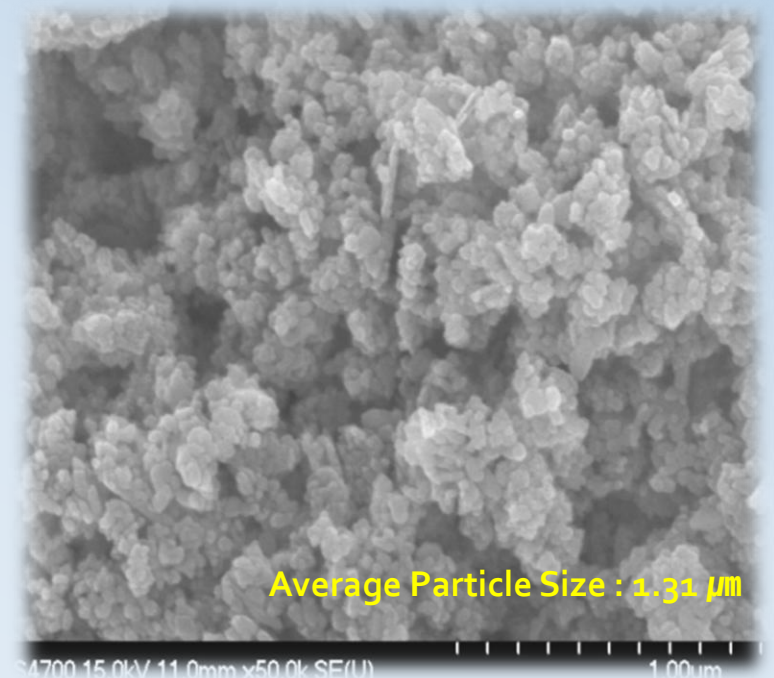
KS – 1, KS – 2

Wet Process -1



AZO – 50, NZ30

Wet Process - 2



NZ – TE30, NZ – DM30

Production Capacity /Month

3000



KS-2

450



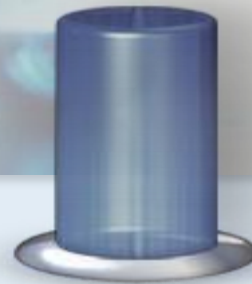
KS-1

250



AP-1

100



Calcine

350



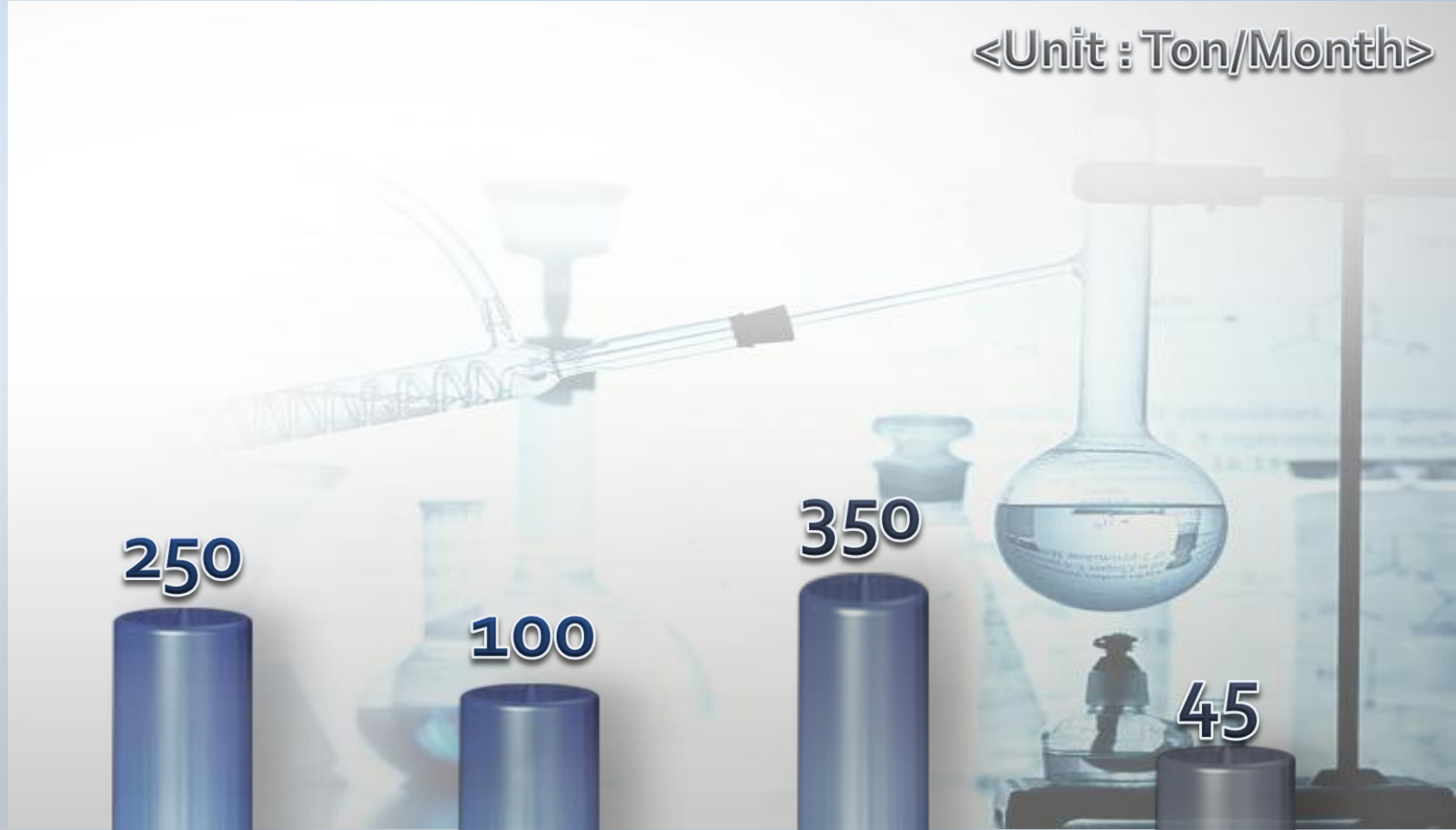
AZO-50

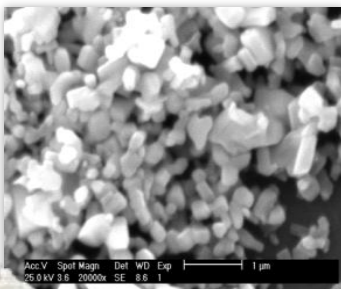
45



HBC-23

<Unit : Ton/Month>





KS-1 / KS-2

Molecular Formula & Reaction Formula

Molecular Formula ZnO

Reaction Formula $\text{Zn[Vapor]} + \frac{1}{2}\text{O}_2 \rightarrow \text{ZnO}$

Specification

Item	Unit	KS-1 (SP)		KS-1		KS-2	
		spec	Typical	spec	Typical	spec	Typical
Purity	wt%	99.5 min	99.80	99.5 min	99.8	99.0 min	99.25
Pb	wt%	0.005 max	0.0030	0.030 max	0.0100	0.30 max	0.0800
Cd	wt%	0.002 max	0.0002	0.002 max	0.0010	0.10 max	0.0060
Fe	wt%	0.002 max	0.0002	0.002 max	0.0010	0.05 max	0.0050
Moisture	wt%	0.3 max	0.10	0.3 max	0.10	0.3 max	0.10
Retention	wt%	0.1 max	0.01	0.1 max	0.01	0.1 max	0.02
Water soluble	wt%	0.1 max	0.04	0.1 max	0.04	0.5 max	0.04
Type		Powder		Powder		Powder and Granule	
Process		French		French		French	
Remark		JIS-1		JIS-2, BA01-05(I)*		JIS-3, BA01-05(Ⅱ)**	
Packing unit		20kg, 500kg, 800kg					
		Craft paper bag & PP bag, Any size customer needs					

※ Keyword) BA01-05*,** based on GB T3185-92 of Chinese Standards



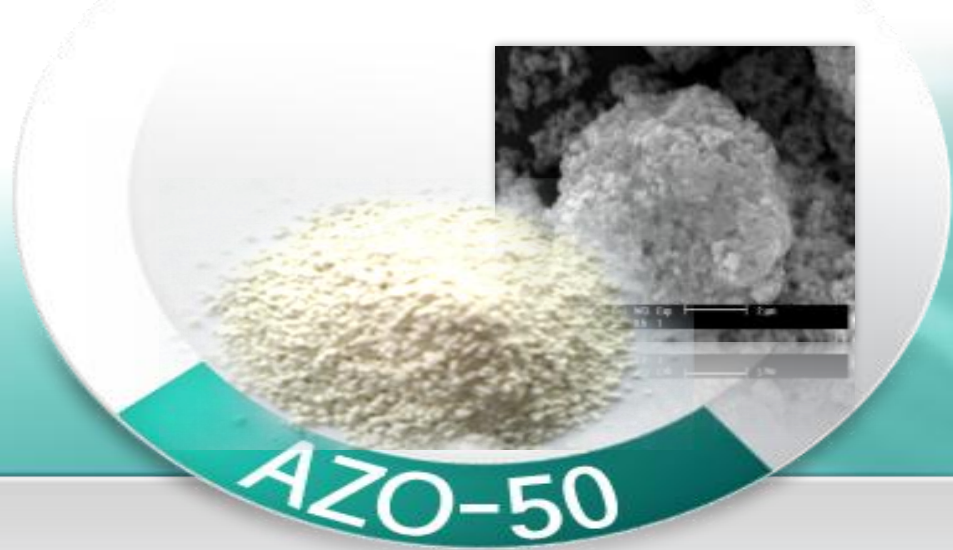
Molecular Formula & Reaction Formula

Molecular Formula ZnO

Reaction Formula $\text{Zn}[\text{Vapor}] + \frac{1}{2}\text{O}_2 \rightarrow \text{ZnO}$

Specification

Item	Unit	AP-1		Calcined	
		spec	Typical	spec	Typical
Purity	wt%	94.0 min	95.00	99.0 min	99.20
Pb	wt%	3.0 max	1.0000	0.20 max	0.1000
Cd	wt%	0.1 max	0.0300	0.05 max	0.0060
Fe	wt%	0.1 max	0.0800	0.05 max	0.0500
Moisture	wt%	0.3 max	0.20	0.2 max	0.05
Retention	wt%	0.4 max	0.05	-	-
Type		Powder, Granule		Powder	
Process		American		Calcination	
Packing unit		20kg, 500kg, 800kg			
		Craft paper bag, PP bag			



Molecular Formula & Reaction Formula

Molecular Formula

ZnO

Reaction Formula

$\text{ZnCO}_3 \rightarrow \text{ZnO} + \text{CO}_2 \uparrow$

Specification

Item	Unit	AZO-50	
		spec	Typical
Purity	wt%	87.0 ~ 93.0	90.7
Pb	wt%	0.03 max	0.002
Cd	wt%	0.01 max	0.002
S.S.A	m2/g	45.0 min	72.0
Moisture	wt%	1.8 max	1.00
Retention	wt%	0.3 max	0.20
Type	Granule		
Process	Wet		
Packing unit	20kg, 500kg		
	Craft paper bag, PP bag		



Molecular Formula

Molecular Formula $[C_9H_{19}COOC_{Co}-O-]_3B$

Specification

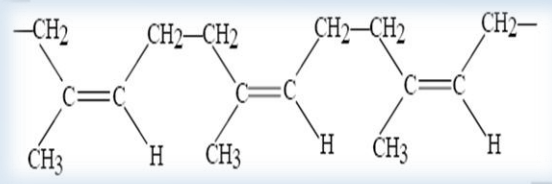
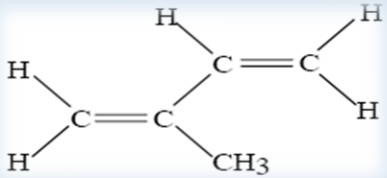
Item	Unit	HBC-23
Specific gravity	g/cc	1.24 ± 0.05
Cobalt content	Wt%	22.0 ± 1.0
Boron content	wt%	1.15 ± 0.15
Insoluble in toluene	wt%	0.5 max
Heat loss (105°C x 2hr)	wt%	1.0 max
Softening point	°C	65 min
Packing unit	Any size of customer needs	
	EVA film	

PART Ⅲ. Applied Fields

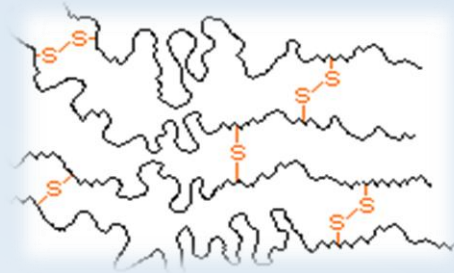
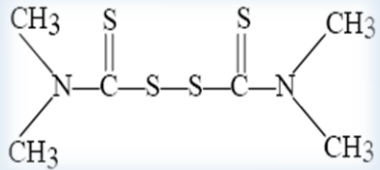


Rubber Application

The function of zinc oxide for rubber products



Vulcanization



Zinc oxide functions as an accelerator in rubber vulcanization.

Raw rubber	100	} activators
Zinc oxide	6.0	
Stearic acid	0.5	
Mercaptobenzthiazole	0.5	accelerator
Sulphur	3.5	

Vulcanization: Adding sulfur or other additives to the rubber to form a crosslinking bond. It improves the elasticity of the rubber and increases tensile strength and wear durability.

Application Market





HANIL CHEMICAL can provide suitable materials
for your system with our technology.

- Particle size & Shape control
- Ultra-high level Purification
- High Dispersibility & Transparency
- Surface Treatment

Thank you very much for your attention!