**Company:** BCG  
**CEO:** Abhinaba Mukherjee  
**Report Authors:** Shivansh Maheshwari, Akshat Jain  
**Chemical Formula:** MgCl2/TiCl4/Al(C2H5)3  
**Chemical Name:** Ziegler-Natta Catalyst  
**Use case:**

1. Ziegler-Natta catalyst is used as a catalyst in the production of polyolefins, such as polyethylene and polypropylene.
2. Some alternatives to Ziegler-Natta catalyst are metallocene catalysts and single-site catalysts.­­­
3. Ziegler-Natta catalyst is superior to its alternatives in terms of its cost-effectiveness and ability to produce a wide range of polyolefin products with different properties.
4. Yes, Ziegler-Natta catalyst is imported in India. The magnitude of imports is approximately 100 metric tons per year.

**Economic feasibility:**

1. The input raw materials needed for the synthesis of Ziegler-Natta catalyst are vanadium pentoxide (V2O5), tungsten trioxide (WO3), zirconium oxide (ZrO2), ethanol (EtOH), and water (H2O).
2. Vanadium pentoxide – Rs 516 per kg  
   Tungsten trioxide – Rs 1467 per kg  
   Ethanol – Rs 37 per kg  
   Zirconium oxide – Rs 1406 per kg  
   Ziegler-Natta catalyst – Rs 5091 per kg

**References:**   
<https://www.britannica.com/technology/Ziegler-Natta-catalyst>  
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<https://www.zauba.com/import-tungsten-trioxide-hs-code.html>   
<https://www.zauba.com/import-ethyl-alcohol-hs-code.html>   
<https://www.zauba.com/import-zirconium-oxide-hs-code.html>  
<https://www.zauba.com/import-ziegler-natta-catalyst-hs-code.html>

**List the contributions of each author:**

**Sign the pdf and upload.**

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