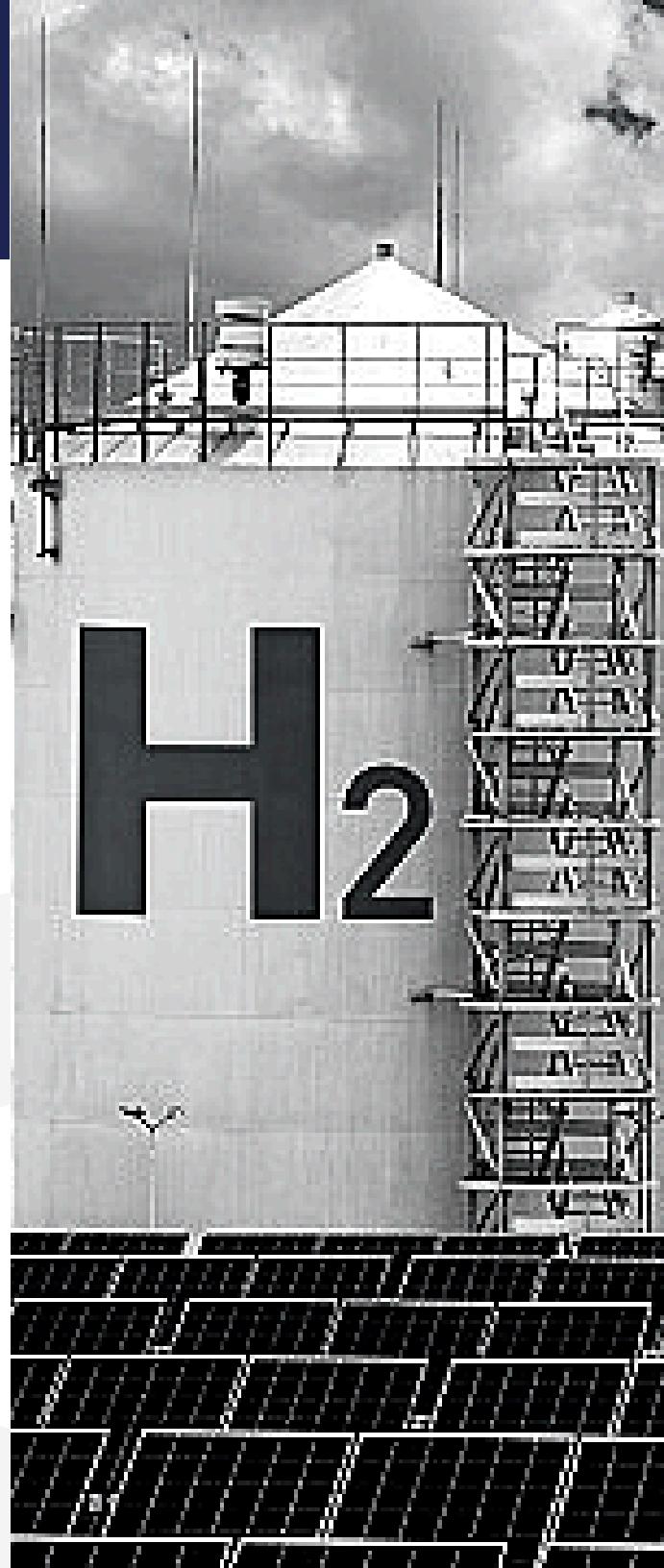


About Us

INSANIA ENERGI serve you to increase your performance as well as to create a long term relationship with you to help you stay ahead at the competition. To do so, we provide a variety of structured consultancy programmers in combination with implementation skills in all relevant areas.

We see our key strengths not only in the development of innovative technologies, which help improve product quality and performance but also in provide service as supervision unloading, loading, start-up process, troubleshooting, evaluate performance and our commitment to close customer relationships. With sales offices two branch in java area, INSANIA ENERGI can meet market requirements for speciality chemical and equipment wherever that market may be. Therefore we are very appreciate your interest in our product and look forward to serving your needs.

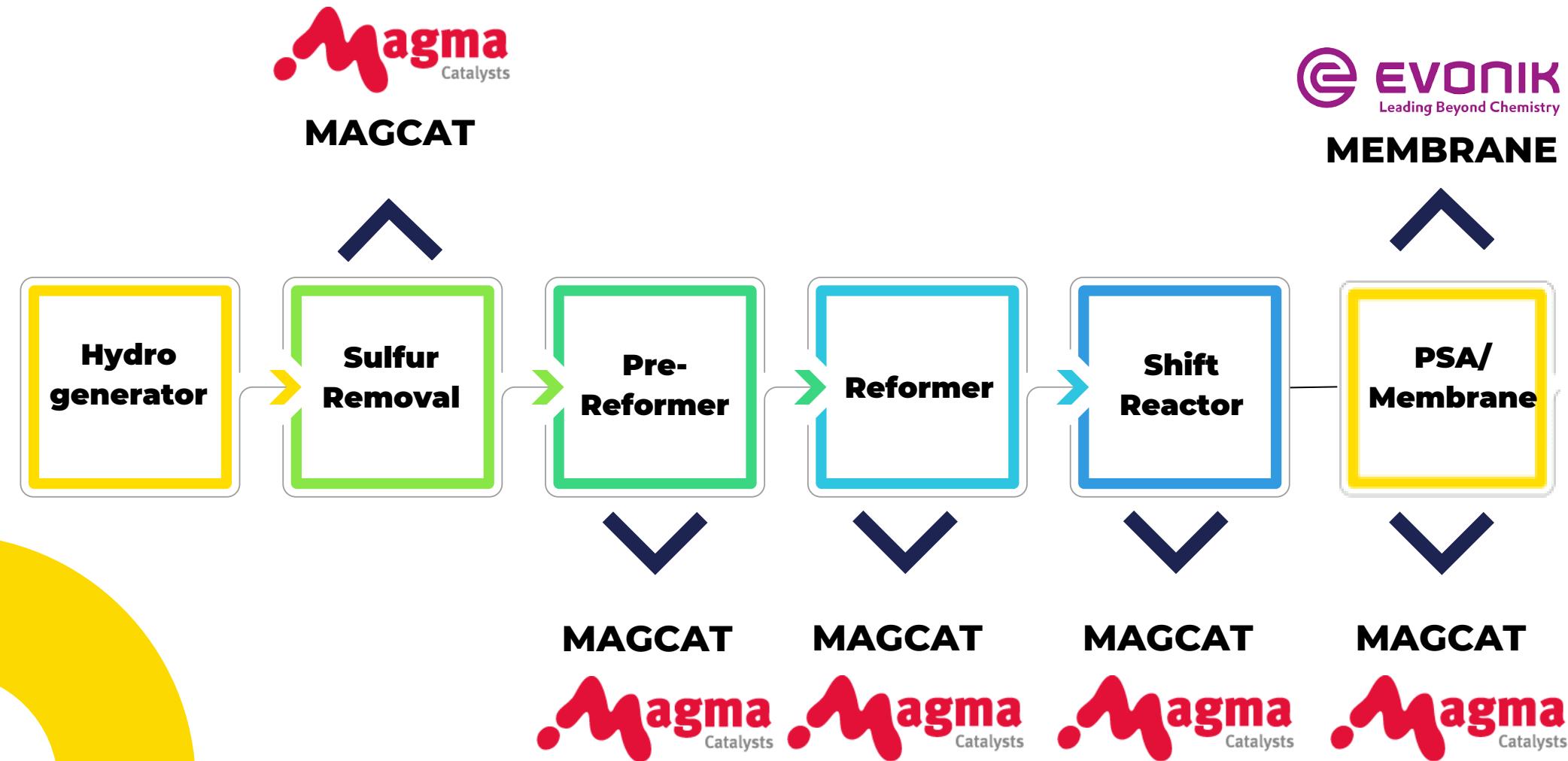


HYDROGEN, METHANOL, AMMONIA AND FERTILIZER PLANT

**Provide Solution
For Your Business**

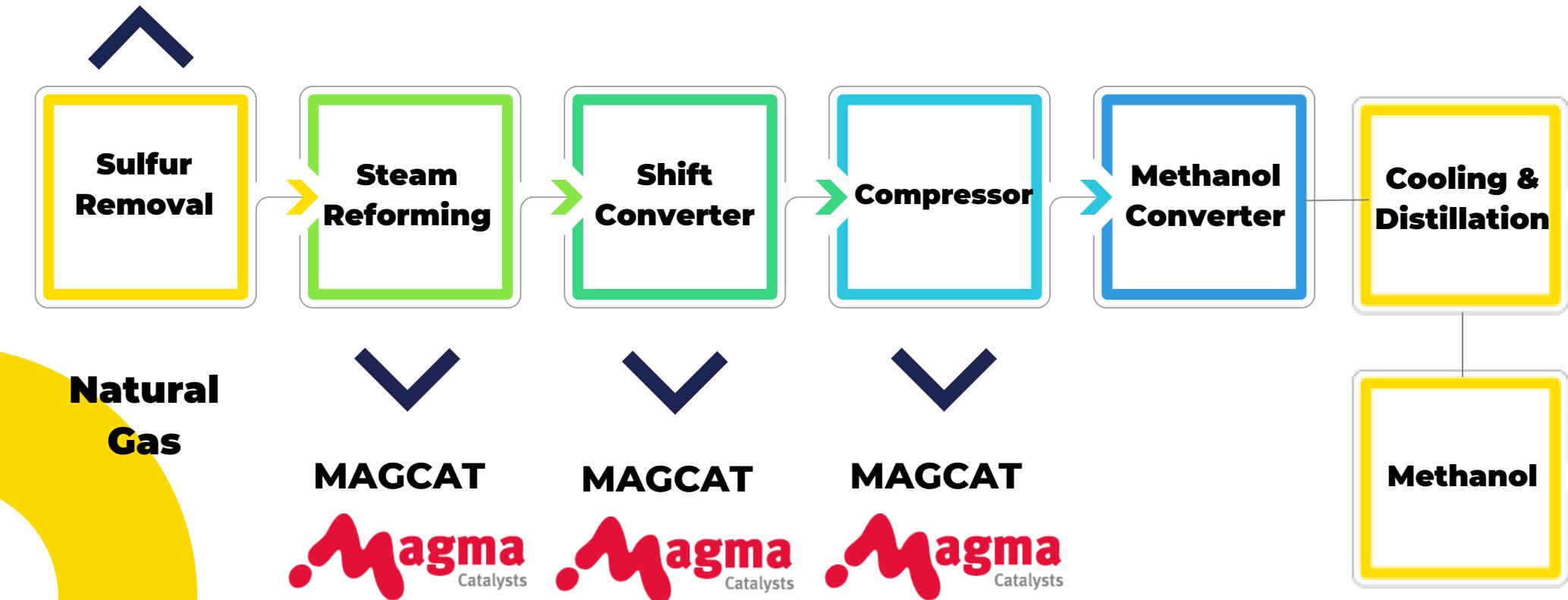


HYDROGEN PLANT



METHANOL PLANT

MAGCAT

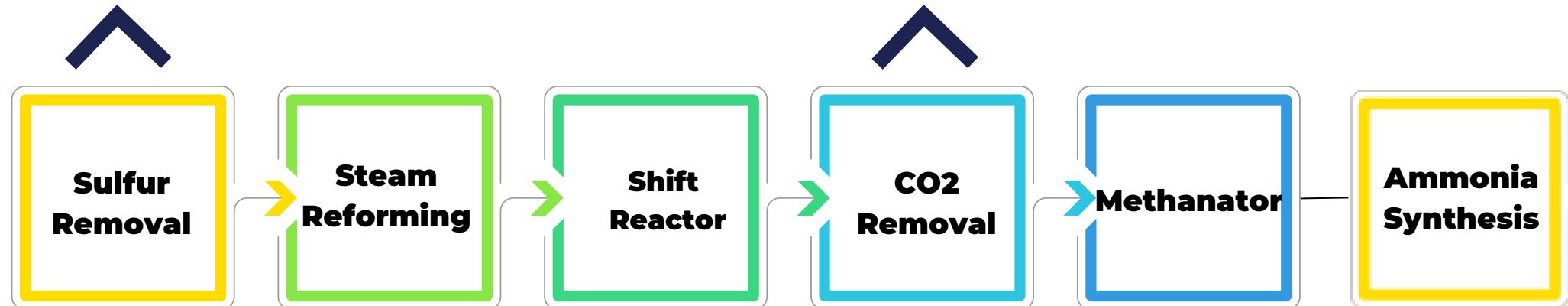


AMMONIA PLANT

MAGCAT



MEMBRANE



Natural
Gas



MAGCAT



MAGCAT



MAGCAT



MAGCAT

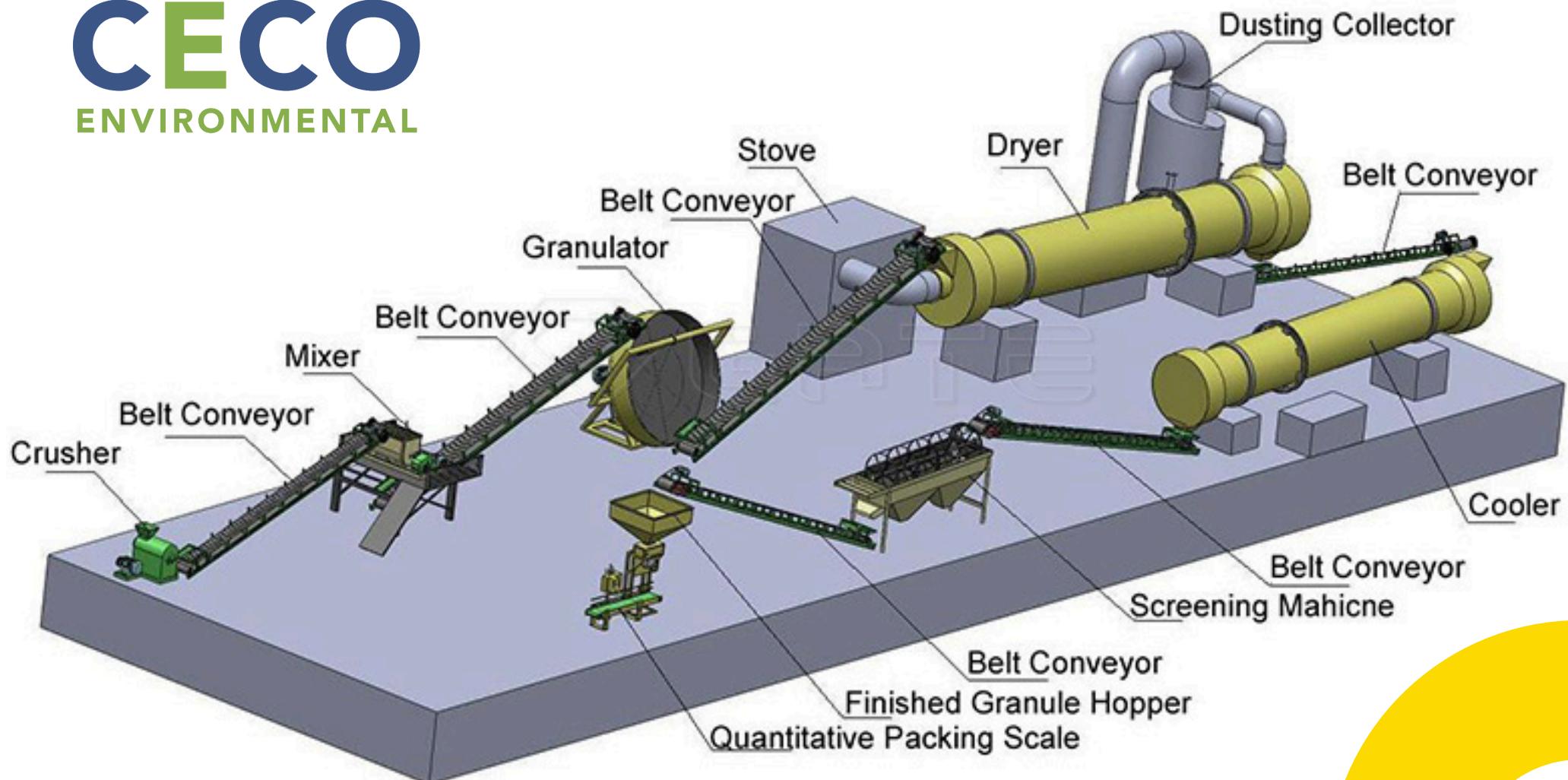


MAGCAT



FERTILIZER PLANT

CECO
ENVIRONMENTAL



SEPURAN® NOBLE MEMBRANES



Evonik's SEPURAN® Noble membrane has been especially developed for hydrogen recovery and purification enabling highly pure hydrogen to be efficiently produced even when inlet concentrations of hydrogen are very low.

Molecular hydrogen can be produced by steam reforming and subsequently by a water gas shift reaction or it occurs as a by-product of different reactions. The largest consumers of hydrogen are refineries as well as ammonia and methanol production facilities.



MagCat FOR REFORMER CATALYST



- Designed polymer matrix-based ceramic catalyst carrier (4 yr dev. program)
- Back to first principles to achieve high strength with **higher porosity carrier**
- Optimised failure mode – MagCat fractures rather than crush or erode. Only large segments. Low pD increase
- Higher crush strength than current market catalyst, commercial reference tested >50% improvement in strength versus original charge (**Independent laboratory test as customer could not break MagCat in their lab!**)
- MagCat > 300 kgf strength



PRESSURE SWING ADSORPTION SYSTEM

Pressure swing adsorption (PSA) is a well-established gas separation technique in hydrogen purification, air separation and/or gas drying systems.

The Adsorbent materials selected and employed in the PSA process as well as a proper process engineering are extremely important in the improvement of the PSA unit's performance. We offer a premium range of absorbents and a deep technical understanding in PSA engineering systems to lead our customer to the best PSA performance possible.

In a standard gas stream, there is a significant number of contaminants which must be removed. Different layers of absorbents are commonly used to remove one or more targeted contaminants. We offer multiple versions of molecular sieve, activated carbon, silica gel, and activated alumina.



OUR CHEMICAL SUPPORT

The Rest-O-Cat® inert ceramic balls

Catalyst bed support
media



The Rest-O-Cat® inert ceramic balls have become a standard in the refinery and petrochemical industry due to their excellent quality and wide versatility. For severe operating conditions or special mechanical requirements, MTE developed higher grades of inert support balls. MTE products are also widely used in amongst other fertilizer, natural gas and industrial gas production plants.

Rest-O-Cat® inert alumina balls

Catalyst bed support
media



MTE has developed the Rest-O-Cat® 99 high alumina balls, when due to chemical composition, temperature resistance or mechanical strength the standard high silica content spheres are not suitable. The standard MTE specification can be used in most of these applications and provides the same benefits as the standard silica types.

SYLOBEAD® Molecular Sieves



Zeolite molecular sieves are crystalline, highly porous materials, which belong to the class of aluminosilicates. This structure is formed by tetrahedras of (AlO_4) and (SiO_4) . SYLOBEAD® MS S 624 is a highly porous, binderless crystalline aluminosilicate in beaded form. The pore openings in the crystals have a diameter of approximately 5 Å.

Activated Carbon D 47/3-PSA



Activated carbon has appearance cylindrical extruded pellets with a grain diameter of approx. 3 mm. Activated carbon Type D47/3-PSA is produced by steam activation from de-ashed hard coal. It can be used for separation of hydrogen by pressure swing adsorption (PSA) technology from gases

SYLOBEAD® Activated Alumina



Activated alumina is made from aluminum hydroxide ($\text{Al}_2\text{O}_3 \cdot n\text{H}_2\text{O}$) with dehydroxylating in a way that produces highly porous material. Activated alumina desiccant is a standard high performance, high porosity, high surface area activated alumina in beaded form. It has been specially designed to be used in the removal of water from gas and liquid streams and the removal of other polar compound.

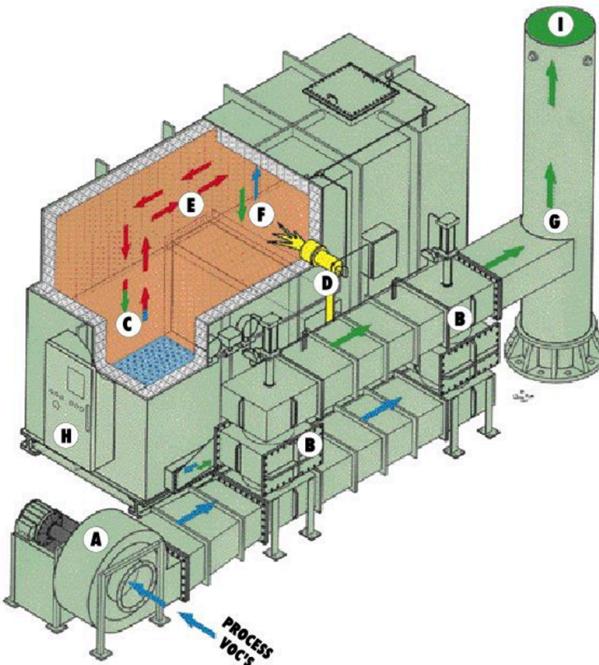
FERTILIZER PLANT

NH3, Urea, Calc. Amm Nit.-CAN)

Adwest (RTO)

- Waste Gas DFTO

Exhaust from multiple processes, Large to mid-size process reactors and storage tank vents



HEE-Duall Scrubbers (FRP, Food)

- Ammonia Scrubber, Recovery Scrubber

Ammonia: Spray type water scrubber to recover Ammonia.

- Droplet Separator

Nitric Acid: spray type water scrubber, with coalescer pack

- Cross Flow Scrubber, Horizontal Flow Scrubber

Ammonium nitrate Emissions control, ammonia removal

- Cross Flow Scrubber, Process Gas Scrubber

Urea Plant; Process gas from Granulator

Ceco Filters (candle filters, acid services)

- Prilling Mist Eliminator

Urea Plant: Production tower, Prill Tower Mist eliminator

- Neutralizer, Mist Eliminator

Ammonia, Nitric Acid Neutralizing

- Evaporator Mist Eliminator

Ammonium Nitrate Reactor

- Multi Stage Mist Elimination Scrubber

AN prill capture, excess Nitric Acid and Ammonia Capture. Removal of sub micron droplets

FERTILIZER PLANT

NP, NK, PK, NPK

Adwest (RTO)

- **Waste Gas DFTO**

Exhaust from multiple processes, Large to mid-size process reactors and storage tank vents



FKI Scrubber

- **Packed Separator**

nitrogen-phosphorus-potassium (NPK) fertilizer dust from agitator tank reactor mixing

- **NPK cyclone/Separator package**

nitrogen-phosphorus-potassium (NPK) fertilizer dust from agitator tank reactor mixing

Ceco Filters (candle filters, acid services)

- **Multi Stage Mist Elimination Scrubber**

AN prill capture, excess Nitric Acid and Ammonia Capture. Removal of sub micron droplets

HEE-Duall Scrubbers (FRP, Food)

- **Multi stage Quencher, Absorber, Venturi Separator**

Acid gas quencher and separator

- **Cross Flow Scrubber**

NPK Tail Gas, Flouring emissions control

- **Cross Flow Scrubber, Horizontal Flow Scrubber**

NPK: Emissions control, ammonia removal

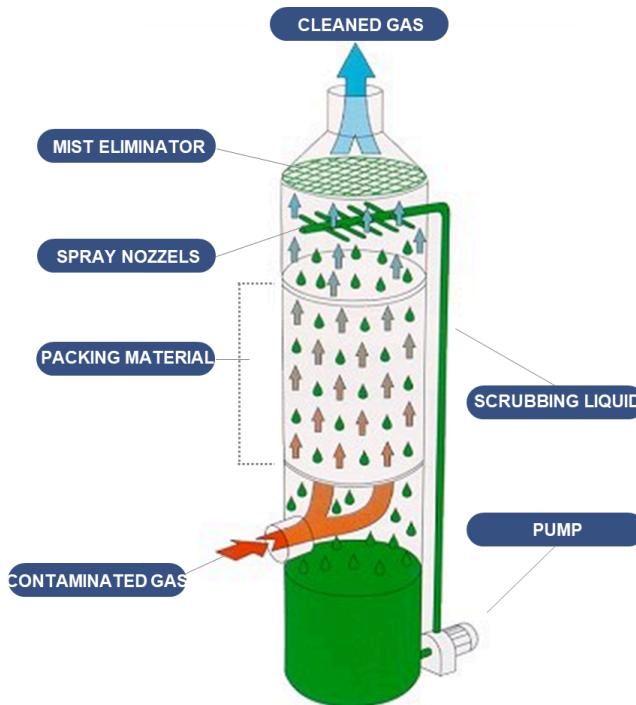
FKI Cyclone

- **Cyclone Separator, NPK cyclone**

nitrogen-phosphorus-potassium (NPK) fertilizer dust

Industrial Scrubbers

Industrial scrubbers are pollution control devices that use liquid to wash unwanted pollutants from a gas stream, or that inject a dry reagent or slurry into a dirty exhaust stream to “wash out” acid gases. Industrial scrubbers are one of the primary devices that control gaseous emissions, especially acid gases.

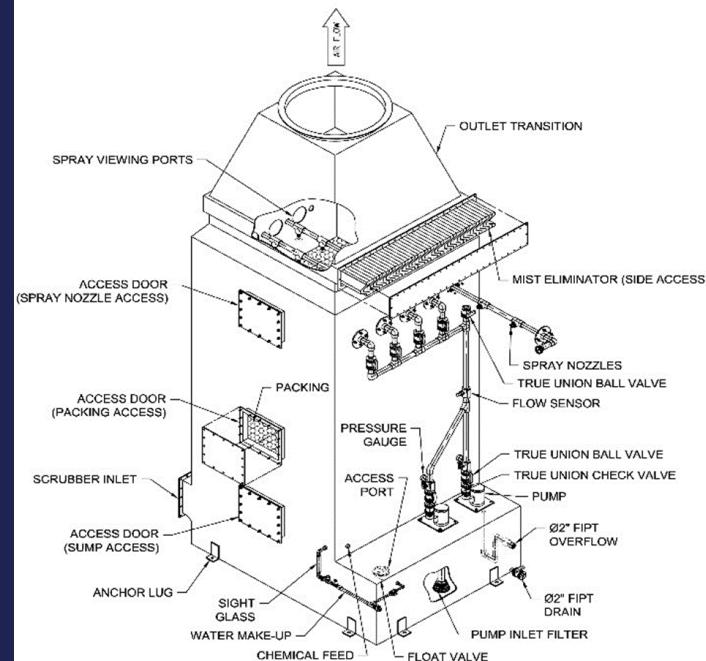


Advantages

- Low-risk processing of incendiary gases
- Ability to handle high-temperature, high-humidity gas streams without temperature limit or condensation problems
- Small space requirements mean lower capital costs and site location flexibility – scrubbers reduce the temperature and volume of unsaturated exhaust streams, permitting vessel sizes, fans and ducts to be more compact. This also enables retro-fitting into existing systems
- No secondary dust sources – once particulate matter is collected, it cannot escape from hoppers or during transport
- Ability to absorb gas and solid particulate matter via a single device
- Ability to neutralize corrosive gases

Product

- **Effluent Scrubber**
- **Cement Kiln Dust (CKD) scrubber**
- **Gas Scrubber**



Ceco Filters (CF)

Candle filters, Acid services

- High temperature – more than 2400°F
- Abrasion Resistant Linings - Extended Equipment life
- Internal or External insulation
- Explosion Venting/Containment
- Design Flexibility - Space and Performance requirements
- Ultra-high Efficiency - product recovery or emission control
- High pressure or vacuum design, ASME "U" stamp
- Corrosion Resistant Alloys

• Main factors for cyclone efficiency
How quickly the particle moves towards the wall or collection area

• Time available for collection: **Residence Time**

• Two main factors describe cyclone performance
Pressure drop
Fractional efficiency curve (FEC)



Advantages

- Low Total Cost of Ownership
- Specifically tailored efficiency to meet your application needs
- Sophisticated computer modeling allows us to offer guaranteed performance when provided with complete operating information
- High reliability
- Long life due to premium quality materials and abrasion resistant linings
- Maximum performance and efficiency

Product

- **Drying Tower (Impaction Candle Filters, Mesh Pad)**
- **Intermediate, Interpass Absorption Tower (Impaction Candle Filters)**
- **Final Absorption Tower (Impaction Candle Filters)**
- **Oleum Production (Impaction Candle Filters)**
- **Acid Mist Elimination (Impaction Candle Filters)**
- **Scrubbing Tower (Impaction Candle Filters)**





**INSANIA
GROUP**



In Collaboration with



www.insaniaenergi.com

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with us**

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