



DE SMET
AGRO

FERTILIZERS - CAPABILITY STATEMENT

FERTILIZERS

Capability Statement

Engineering Solutions for the Fertilizer Industry

Our fertilizer experience covers the full spectrum of services, for the production of intermediate products to granulated fertilizers and derivative products.

De Smet Agro has completed hundreds of mandates, ranging from studies to full implementation, in fertilizer industry facilities around the world with focus on Phosphoric Acid, AN / CAN granulation plants and Clean air solutions.

We combine the world's best technologies and global know-how to deliver complete customized sustainable solutions and to improve the capacity and efficiency of our clients' existing operations.





Customized solutions

For fertilizer base chemicals to downstream fertilizers production plants

Phosphoric acid

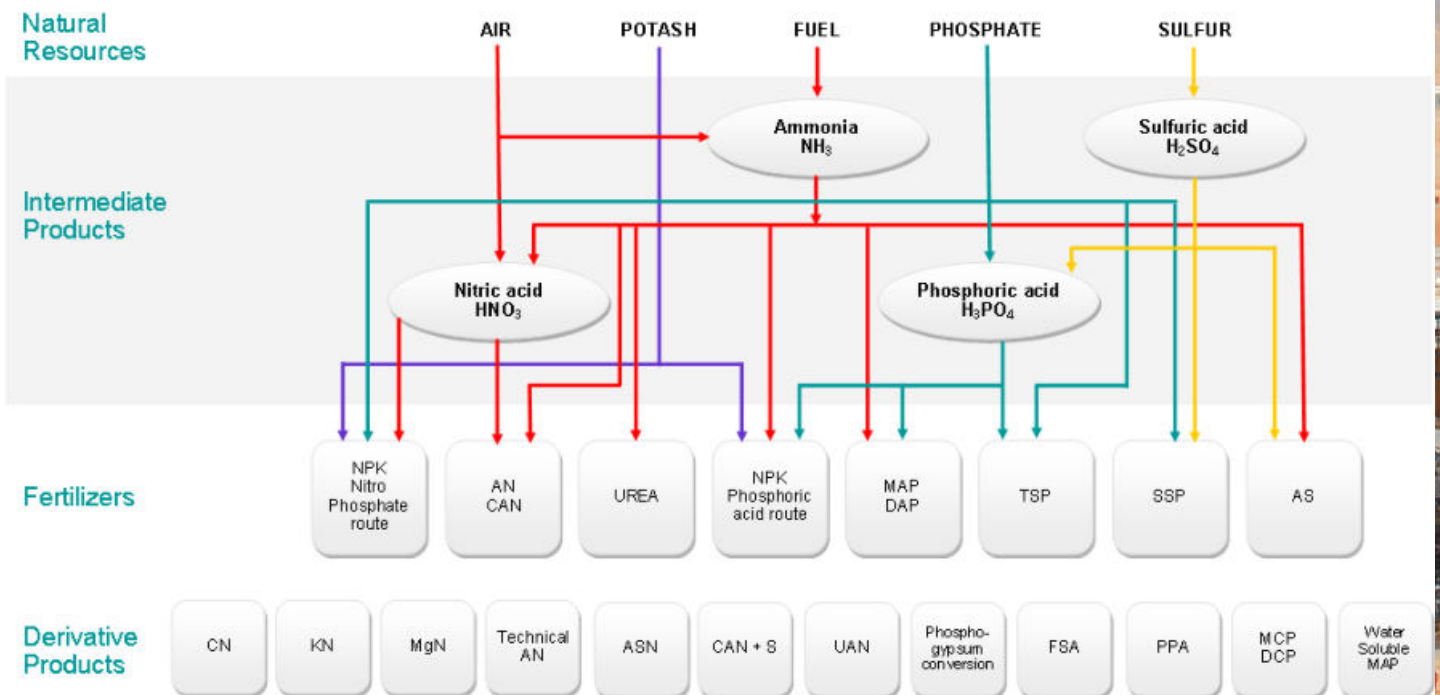
With highly qualified expert teams, we have supported customers worldwide in the design and construction of fertilizer and merchant grade phosphoric acid plants, in upgrading facilities, and in developing optimal solutions for their operations.

- > Single and double crystallization processes
- > Fluosilicic acid recovery
- > Gypsum valorization
- > Fluorine gas scrubbing
- > Acidic cooling tower design
- > Phosphoric acid concentration and purification technologies
- > Environmental design with zero liquid effluent

Granulation, prilling and crystallization

Decades of experience designing and building synthesis, evaporation and granulation units, crystallization plants, and prilling towers have contributed to our high-level in-house expertise appreciated by clients worldwide.

- > Ammonium nitrate and derivatives (AN)
- > Calcium ammonium nitrate (CAN)
- > Calcium nitrate (CN)
- > Technical ammonium nitrate (TAN)
- > MAP/DAP/NPK
- > SSP/TSP
- > Ammonium sulfate (AS)
- > Ammonium sulfo-nitrate (ASN)



IN-HOUSE TECHNOLOGIES FOR: AN | CAN | CN | AS | ASN | NPK | MAP | DAP | SSP | TSP

LICENSEE OF LEADING TECHNOLOGY PROVIDER FOR PHOSPHORIC ACID: PRAYON TECHNOLOGIES

FULL ACCESS TO ALL LEADING TECHNOLOGY PROVIDERS FOR AMMONIA, UREA, NITRIC ACID, SULFURIC ACID

AN	Ammonium Nitrate and derivatives	DAP	Diammonium Phosphate	MgN	Magnesium Nitrate
AS	Ammonium Sulphate	DCP	Dicalcium Phosphate	PPA	Purified phosphoric acid
ASN	Ammonium Sulfo-Nitrate	FSA	Fluosilicic acid	SSP	Single super Phosphate
CAN	Calcium Ammonium Nitrate	KN	Potassium Nitrate	TSP	Triple super Phosphate
CN	Calcium Nitrate	MAP	Monoammonium Phosphate	UAN	Urea Ammonium Nitrate

Fertilizer industry

We have a long-standing history in the design and management of urea and nitrogen based fertilizers production facilities. We also work extensively in the gaseous effluents treatment where we have been involved in numerous projects.

- > Prilling towers gaseous effluents cleaning
- > Flue gas scrubbing applied to fertilizer industry
- > Ammonia
- > Urea
- > Nitric acid
- > Sulfuric acid



ACTIVE FOR OVER

60 

YEARS IN THE
FERTILIZER INDUSTRY



Services to Clients

With a **Process-oriented** multi-disciplinary engineering team, De Smet Agro cover various activities:

- > Technical audits
- > Pre-feasibility / feasibility studies
- > CAPEX estimate + financial study
- > Basic engineering / FEED
- > Detail engineering
- > Procurement services
- > Construction management
- > Operator training
- > Commissioning and start-up activities

For all types of projects:

New plant

- > Greenfield plant
- > Brownfield plant
- > On-site and off-site facilities

Existing plant

- > Modernization
- > Revamping
- > Capacity increase



CONTACT DETAILS

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Selected References

Phosphoric Acid production plant revamping

Client: OCP group

Location: Jorf Lasfar, Morocco

Services: EPCM

Highlights

- > Adaptation of existing phosphoric acid lines to process phosphate slurry instead of dry phosphate rock
- > 4 phosphoric acid lines based on Nissan technology were revamped into 4 phosphoric acid units on DH Prayon's technology with capacity increase up to 1350 MTPD

Sulfuric and Phosphoric Acid production plants

Client: JIFCO

Location: Eshidiya, Jordan

Services: EPCM

Highlights

- > Greenfield 1-train double absorption sulphur burning sulfuric acid plant producing 4500 MTPD (100% H₂SO₄ basis) and phosphoric acid plant with 4 concentration lines producing 1500 MTPD (100% H₃PO₄)
- > Storage tanks, utilities, and on-site / off-site infrastructure
- > Efficient workshare brought the best of our sulphuric and phosphoric expertise to the client and a one-stop-shop solution for the complex, from raw material handling to truck loading of final product

Calcium Ammonium Nitrate granulation plant

Client: Sasol Nitro

Location: Secunda, South Africa

Services: EPCM

Highlights

- > Greenfield evaporation and granulation plant to produce 1333 MTPD of Calcium Ammonium Nitrate (CAN)
- > De Smet Agro's in-house Fluidized Drum Granulation (FDG) technology affords high granulation efficiency and enables easy adjustment of granule size
- > Supply of proprietary and critical equipment.

Year	Country	Project	Client	Services
Ongoing	Saudi Arabia	FSA recovery	Maaden	FS
Ongoing	Australia	Phosphoric acid plant	Verdant Minerals	DFS
Ongoing	Senegal	Phosphoric acid concentration plant	Indorama—ICS	EP, S&C
Ongoing	Morocco	Purified phosphoric acid plant	Emaphos	EPCM
2022	Romania	AN/CAN fattening unit revamping	Azomures	E
2021	Morocco	Water soluble MAP plant	OCP	EPCM
2021	Belgium	SHMP plant	Prayon	E
2021	Romania	AN/CAN/CN granulation plant	Azomures	E
2020	India	Phosphogypsum conversion unit	Paradeep	FS
2020	Croatia	CAN, NPK, SAP units revamping	Petrokemija	FS
2019	Russia	CN granulation plant	Acron	EP
2018	Romania	NPK prilling flue gas cleaning unit	Azomures	EPCM
2017	Russia	SAP, PAP and NPK granulation plants	Acron	E
2016	Lithuania	AN/CAN/ASN granulation plant	Achema	E
2015	Croatia	NPK plant revamping into AS/ASN granulation	Petrokemija	E
2014	Romania	Flue gas cleaning unit for AN prilling towers	Azomures	EPCM
2014	Turkey	Phosphoric acid plant and Balance of plant	Cengiz Holding	E
2012	Brazil	Phosphoric acid plants	Fosfertil	E
2012	Russia	Ammonium sulfonitrate (ASN) granulation plant	UralChem	EP



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