

September 15, 2021

Dear Customers, Dear Colleagues,

With a background of years of exclusive services for the Fertilizers industry, we may offer:

- **Before your projects implementation:**
  - erection of call for bids documentation,
  - assistance in choosing processes or contractors,
  - assistance in negotiations,
  
- **During your projects implementation:**
  - Assistance in Project Management,
  - Assistance in follow-up of process studies,
  - Consultant in HAZOP meetings,
  - Assistance / performance of Procurement Services,
  
- **During Processes Developments**
  - Participation in erection of piloting strategy,
  - assistance in follow-up of tests and analysis of results,,

and any other services relevant to our expertise in Fertilizers Productions, Projects and Companies management.

These services may be implemented from our Company in France or our Company in Russia.

Looking forward to a fruitful collaboration, I stay at your disposal for any assistance you would need.

My best regards,



Gerard MALARD

## **GERARD MALARD - CHEMICAL ENGINEER**

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### **A PROFESSIONAL LIFE IN FERTILIZERS INDUSTRY**

<i>Since January 2020</i>	CEAM-CONSULT
<i>1998 - 2020</i>	CEAMAG SAS
<i>1978 – 1998</i>	KREBS (nowadays subsidiary of TECHNIP)
<i>1974 – 1978</i>	COFAZ (nowadays YARA)

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#### **AS EXECUTIVE OFFICER**

Founder and General Director of Company CEAMAG SAS (since 1998): Process, Engineering, Procurement Services exclusively dedicated to Fertilizers industry.

#### **AS PROJECT TEAMS MANAGER**

Numerous works in new plants projects or revamping for Ammonia, Nitric Acid, Ammonium Nitrate, AN Based Granulated Compounds, NP, NPK, MAP, DAP.

Business Development Manager for several major Fertilizers project around the world.

#### **AS PROCESS ENGINEER**

Process Documentation, Basic Studies for Ammonia, Nitric Acid, Ammonium Nitrate, AN based compounds, small ammonia plants (50-400 mtpd).

Commissioning Manager for Sulphuric Acid plant, Phosphoric Acid plant, Nitric Acid Plant, AN plant, AN based compounds plant, granulation plants.

#### **AS PROCESS DEVELOPER**

Piloting of phosphoric Acid double crystallization process (semi-industrial),  
Piloting of photo-chlorination processes for chlorinated compounds (semi-industrial),  
Piloting of micronized Sulphur polymers (Laboratory scale, Semi-industrial, Industrial),  
Development of Computer Models for Nitric Acid Processes Flowsheeting.

#### **AS PRODUCTION PLANT SHIFT MANAGER**

MAP, Sulphuric Acid, Phosphoric Acid, Nitric Acid.

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## GERARD MALARD - CHEMICAL ENGINEER

### A PROFESSIONAL LIFE IN FERTILIZERS INDUSTRY

#### REFERENCES

##### AMMONIA

###### Since 1998: with CEAMAG SAS

Process developer, support and Project teams assistance in CEAMAG field of interests and references:

- Revamping of existing Front End Plants and Synthesis loops:
  - . Optimization of energy consumption,
  - . Capacity increase,
  - . Compliance with EFMA-BAT pollution control.
- Complete design of small size plants: from 50 tpd till 400 tpd.

###### 1974 – 1998: With KREBS Engineering (Nowadays TECHNIP)

**1997 : Romania – Turnu Magurele - Ammonia plant revamping project – Proposal / Process studies**

**1996 : Romania – Dolchim - Ammonia plant revamping project – Proposal / Process studies**

**1995 : -Romania – Craiova – Ammonia plant revamping project – Proposal / Process studies.**

**1992 : Bulgaria - Devnia – Process Humphreys and Glasgow - Proposal / Process Manager for full plant revamping.**

##### UREA

###### 1974 – 1998: With KREBS Engineering (Nowadays TECHNIP)

**1996 : Uzbekistan – Chirchik – Uzkhimprom – Stamicarbon granulated Urea - Proposal / process studies**

**1995 : China Yunnan Zhanyi - Stamicarbon Synthesis – Proposal / Process Studies**

**1995 : China – Guangxi Hechi – Stamicarbon Synthesis – Proposal / Process Studies**

**1994 : Pakistan – Port Qasim – Stamicarbon Synthesis + HFT Granulation – Proposal / Process Studies**

**1992 : Russia – Novomoskovsk – PEC Engineering – Granulation Urea in spherodizer – process studies.**

**1992 : Russia – PERM (Permnefteorgsintez) – UTI - revamping study Stamicarbon Synthesis**

##### NITRIC ACID

###### Since 1998: with CEAMAG SAS

Process Developer, support and Project teams assistance in CEAMAG field of interests and references:

- Dual Pressure Process
  - . Production till 1500 tpd.
  - . N.A. Concentration 58% - 68%
  - . Compliance with pollution controls
- mono pressure process
  - . for plants till 1000 tpd. Optimization of CAPEX.

**2000-2016 : Russia – UKL & AK 72 plants – several studies for revamping projects.**

**2004 : Lithuania – Jonava – GP Dual Process – Process manager, relocation and upgrading plant project.**

## 1974 – 1998: With KREBS Engineering (Nowadays TECHNIP)

1997 : **Hungaria – Varpalota – Stamicarbon** – Proposal / process Studies  
1996 : **France – Ambes – NSM-L Dual Pressure** – Precommissioning & Commissioning Manager  
1996 : **-Romania – Craiova – A.N. plant revamping project** – Proposal / Process studies.  
1996 : **Slovakia – Duslo Sala – Grande Paroisse** – Proposal / process studies  
1996 : **Germany – Piesteritz – Grande Paroisse mono pressure** - Proposal / process studies  
1992 : **Algeria – Arzew – Voest Alpine mono pressure** – revamping study  
1991 : **Czechoslovakia – Pardubice – Pintsch Bamag** – NA 99% and 56% - revamping study  
1989-1990 : **Greece – Thessaloniki – Grande Paroisse** – revamping study  
1988-1989 : **Algeria – Annaba – Stamicarbon mono pressure (2 plants)-** Process studies / Prescommissioning / training / Commissioning  
1987 : **France - Ambes – NSM-L Dual Pressure** – Process & proposal Manager  
1988 : **France – Ambes – NSM-L** – Process Assistance for procurement services  
1986-1990 : **Process Development – performance of process simulator for Nitric Acid Process.** (Publication)  
1986 : **Turkey – Kutaya – Concentrated N.A. – Hercules** – Process studies  
1980 : **Mexico – Pajaritos - Stamicarbon Dual Pressure** – Commissioning Manager  
1978 : **Algeria – Annaba – Stamicarbon Mono Pressure (2 plants)** – Assistance during construction  
1974 : **France – Le Havre – COFAZ dual pressure process** – Precommissioning & Commissioning

## AMMONIUM NITRATE

### Since 1998: with CEAMAG SAS

Process Developer, support and Project teams assistance in Ceamag field of interests and references:

- Production of AN solution till 99.7%,
  - . Plant efficiency: 99.99%,
  - . Production of pure process condensate for re-use when required.
  - . Optimization of quality of condensate versus Nitric Acid plant process water needs.
- Production of several grades of AN based Fertilizers with N content from 20% till 34.5%.
- Onion skin granulation process: optimization of granules shape and properties.
- Production of Ammonium Sulpho-Nitrate granules, from 4% S till 13% S.
- Production of Urea Ammonium Sulphate granules from 4% till 12%
- Feed stocks: AS crystals or granules, AN solution, Ammonia, Gypsum.
- Original process with AS synthesis from Sulphuric Acid and Ammonia, without Ammonium Sulphate as solid.

## 1974 – 1998: With KREBS Engineering (Nowadays TECHNIP)

1996 : **Romania – Dolchim – Stamicarbon** – revamping CAN - Proposal / process Studies  
1994 : **Iran – Shiraz – SPC – Stamicarbon – TAN plant revamped for CAN** – Proposal / process Studies  
1993 : **Belgium – Tertre – KEMIRA – Kemira process** - basic Engineering for typical AN solution plant.  
1992-1993 : **Bulgaria – Devnia – Norsk Hydro process Fluid Bed Granulation-** Proposal / process studies for new AN Granulation plant..  
1988-1991 : **France – Ambès – Hydro Agri – Synthesis + fluid Bed Granulation** – Process leader - Precommissioning / Commissioning  
1988-1989 : **Algeria – Annaba – Stamicarbon synthesis + prilling (2 plants)-** Prescommissioning / training / Commissioning  
1988 : **Belgium – Brussels – Hydro Fluid Bed Granulation** – Process training by NSM and Porsgrunn.  
1987 : **France – Pierrefitte - COFAZ then Hydro** – piloting for pan granulation.  
1987 : **Belgium Tertre - Kemira – AN project** - Proposal / process studies  
1986 – **Yougoslavia – Subotica – Zorca Azotara – Stamicarbon CAN in NP** – commissioning manager  
1986 : **Bulgaria : Devnia – Chemical Combinat – Stamicarbon prilling** - Proposal / process studies  
1986 : **Mexico – Lazaro Cardenas – Stamicarbon Synthesis + Prilling (GAN/TAN)** Commissioning Manager  
1985 : **Turkey – Kutaya – TUGSAS - Stamicarbon prilling** - Proposal / process studies  
1985 – **Venezuela – Formiconi – Stamicarbon LD process** – Proposal / process studies  
1981 : **Mexico – Pajaritos (Veracruz) - Stamicarbon Synthesis + Prilling (GAN/TAN)** Process Studies  
1981 : **France – mazingarbe – CDF Chimie – Gas treatment prilling tower** – Commissioning Manager  
1978-1979 : **Mexico – Lazaro Cardenas (Michoacan) – Stamicarbon Synthesis + Prilling (GAN/TAN)** Process Studies

## NITROPHOSPHATE

**1974 – 1998: With KREBS Engineering (Nowadays TECHNIP)**

- 1993 : Yugoslavia – Kutina – Stamicarbon – revamping – Process Studies
- 1992 ; India – PDIL for RCF – Stamicarbon – NP+ CAN - Process Studies
- 1989 : Yugoslavia – Subotica – Stamicarbon – Precommissioning / training / Commissioning
- 1992 : Taiwan – Kaohsiung – PEC Engineering – Proposal / process studies
- 1986 : Yougoslavia – Subotica – Zorca Azotara – Stamicarbon NP – commissioning manager

## PHOSPHORIC ACID

**1974 – 1998: With KREBS Engineering (Nowadays TECHNIP)**

- 1995 : Bulgaria – Devnia - SIAPE: proposal / process studies for revamping
- 1993 : China – Wengfu – Hydro Supra – proposal / process studies
- 1983 : Morocco – Jorf Lasfar – Stauffer Chemical + Swenson (Super Phosphoric Acid – SPA) – Proposal Process leader
- 1974-1977 : France – Le Havre – Phosphoric Acid Plant Start-up and operation leader

## NPK/MAP/DAP

**Since 1998: with CEAMAG SAS**

- 2005 : Bulgaria – Devnia – Agropolychim - modification of TSP granulation plant for production of MAP and DAP.
- 2005 : Lithuania – Jonava – Achema – re-engineering of relocated MAP/DAP plants

**1974 – 1998: With KREBS Engineering (Nowadays TECHNIP)**

- 1993-Taiwan – Hualien – NPK by Spherolizer – Proposal / process studies
- 1992 : CEI – (Agrochimprogress / Roznoproimport) – Proposal / Process studies

## OTHERS

- 1994 : Belgium – Brussels – Hydro Agri Licensing – P2O5 DH process Development – Process Studies
- 1994 : Pakistan – Bin Qasim – Grande Paroisse DAP - Process Studies
- 1991 : France – Atochem- Chlorinated Wastes Treatment – Process studies
- 1991 : China – Ybin – PVC with Atochem – Process studies
- 1991 : France – Rouen – Lubrizol – Purification / capacity increase production HCl - Process studies
- 1989 : France – Rouen – Lubrizol - Polybutènes synthesis – Process studies
- 1987 : Algeria – Es-Senia – Sacolin – Polymers project with Atochem – process studies
- 1987 : Australia – Perth – Gallium extraction – process studies
- 1988 : France - Saint Gobain Recherche – Extraction Indium – piloting and process assistance
- 1987 : Coreia – Honam – Atochem – Ethylene Oxyde Plant – Process Studies
- 1987 : France – Pau – SNEAP - Process Studies for Sulphur recovery
- 1985 : Hungaria – Chemcomplex – polystyrene with Atochem – Process studies
- 1983-1987 : France - Marseilles – Synthesis of micronized Sulphur Polymer – Pilot Development Process studies and Industrial plant manager: process studies, commissioning.
- 1982 : Spain – Aragonesas – Chlorinated Compounds – Photochloration - pilot Development – Process studies