

MoO₃

MEA

MDEA

BAT

CH₄

CH₃OH

NO

NO₂

HNO₃

Pt

Rd

Mono-A.P

Di-A.P

Ca(NO₃)₂

CaCO₃

NH₂COONH₄

NH₂CONH₂

NO_x

SO_x

TDS

BOD

COD

pH

S.S

TDS

(Pollution Prevention)

P2

(Compliance Action Plan)

CAP

(Environmental Impact Assessment)

EIA

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(EPAP)

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GIM (EPAP2002)

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.P₂O₅%

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. N₂%

. K₂O

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(Steam reforming)

(Fixed bed)

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(Adsorbent)	
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(NH ₃)	-
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(N₂ %

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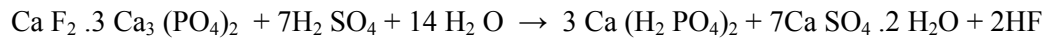
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.(Grab=bucket crane)

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admixtures

.(N₂)

(HF)

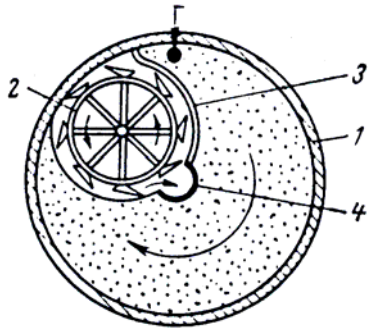
(SiF₄)

(Sodium Flue Silicate)

(-)

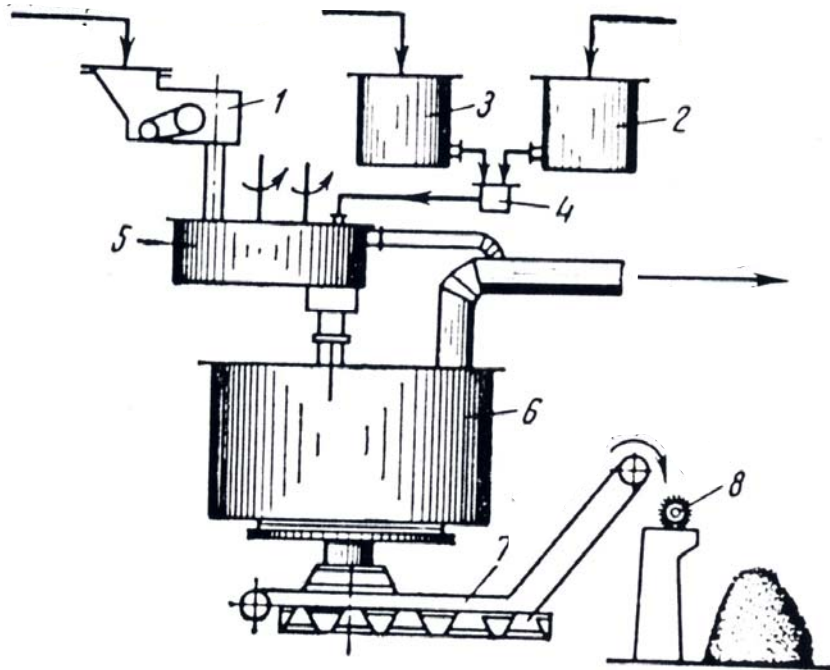
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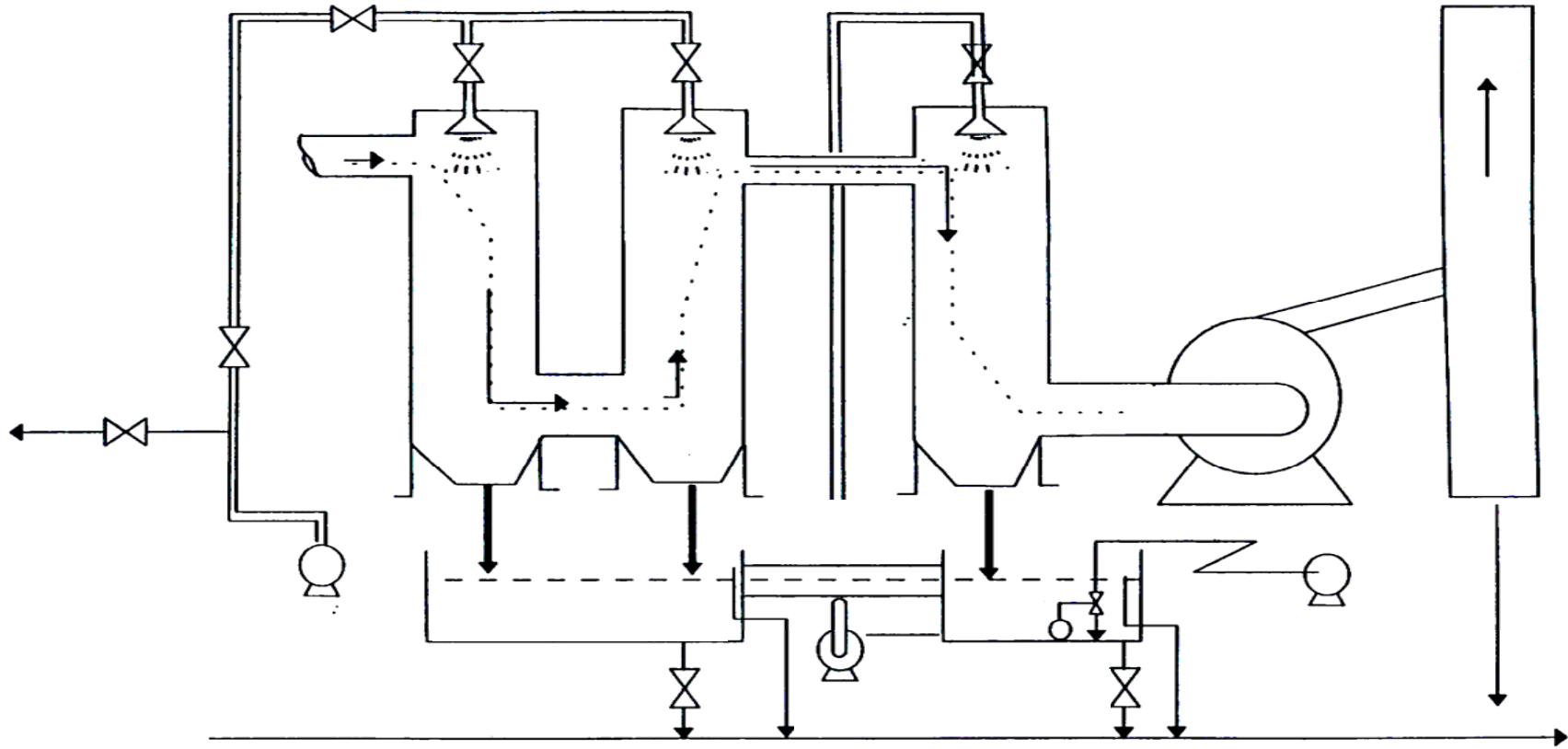
(-)

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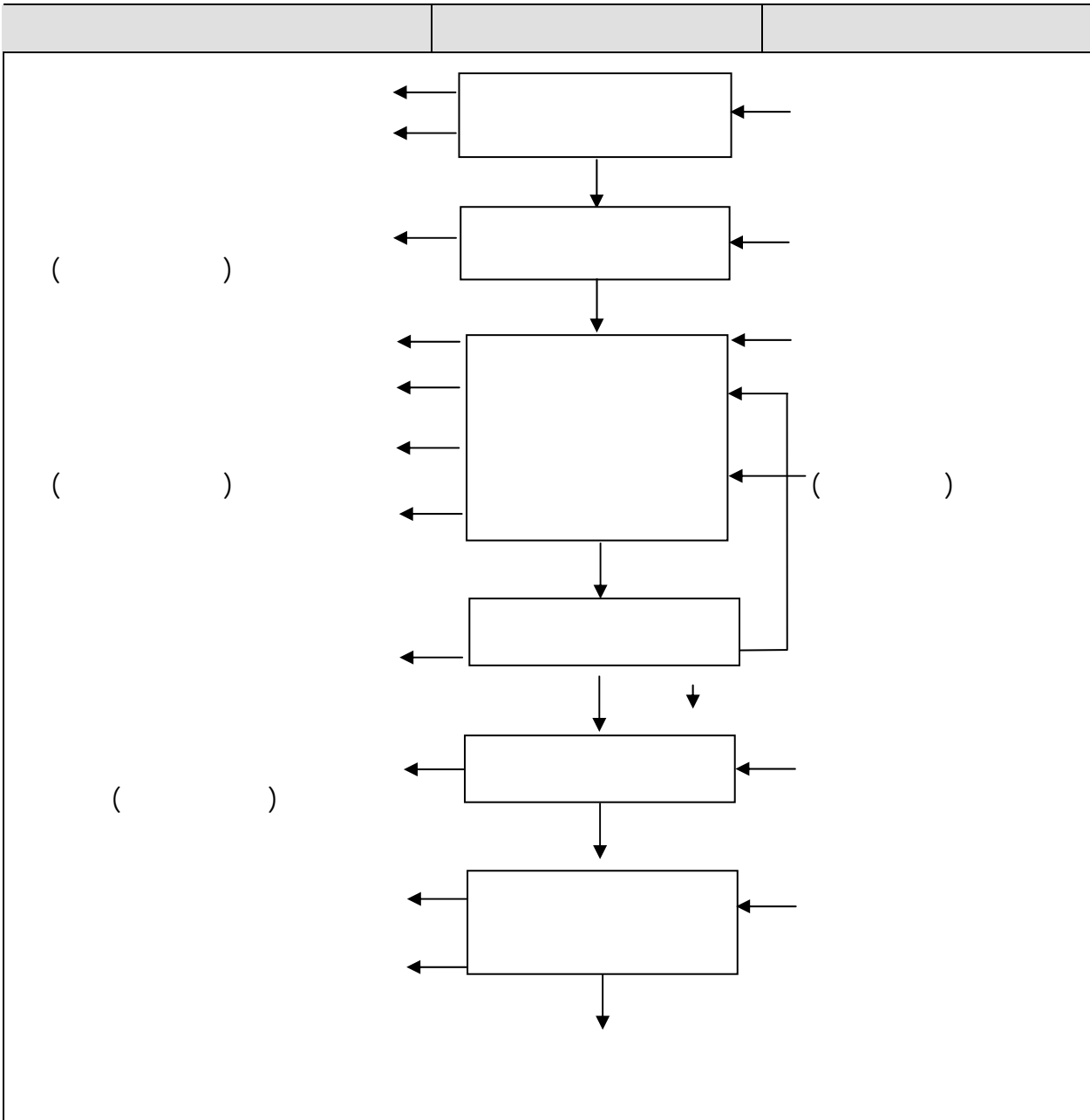


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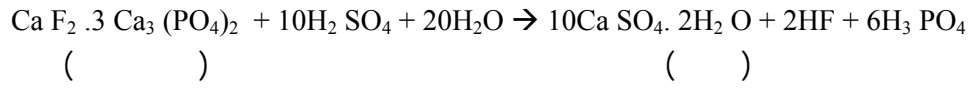
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(H₃PO₄)

(Chute)

(retention)

(Tilting pan filter)

(Filter Cake)

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iso- - n-butanol

(-) n-heptanol (-) butanol

(:)

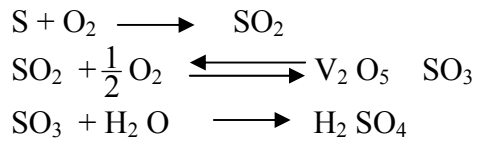
() (Contact process)

(P₂ O₅)

(SO₂)

(SO₃)

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(WHB)

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(SO₂)

%ñð ñ

(SO₃)

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(Economizer)

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(SO₃)

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(SO₃)

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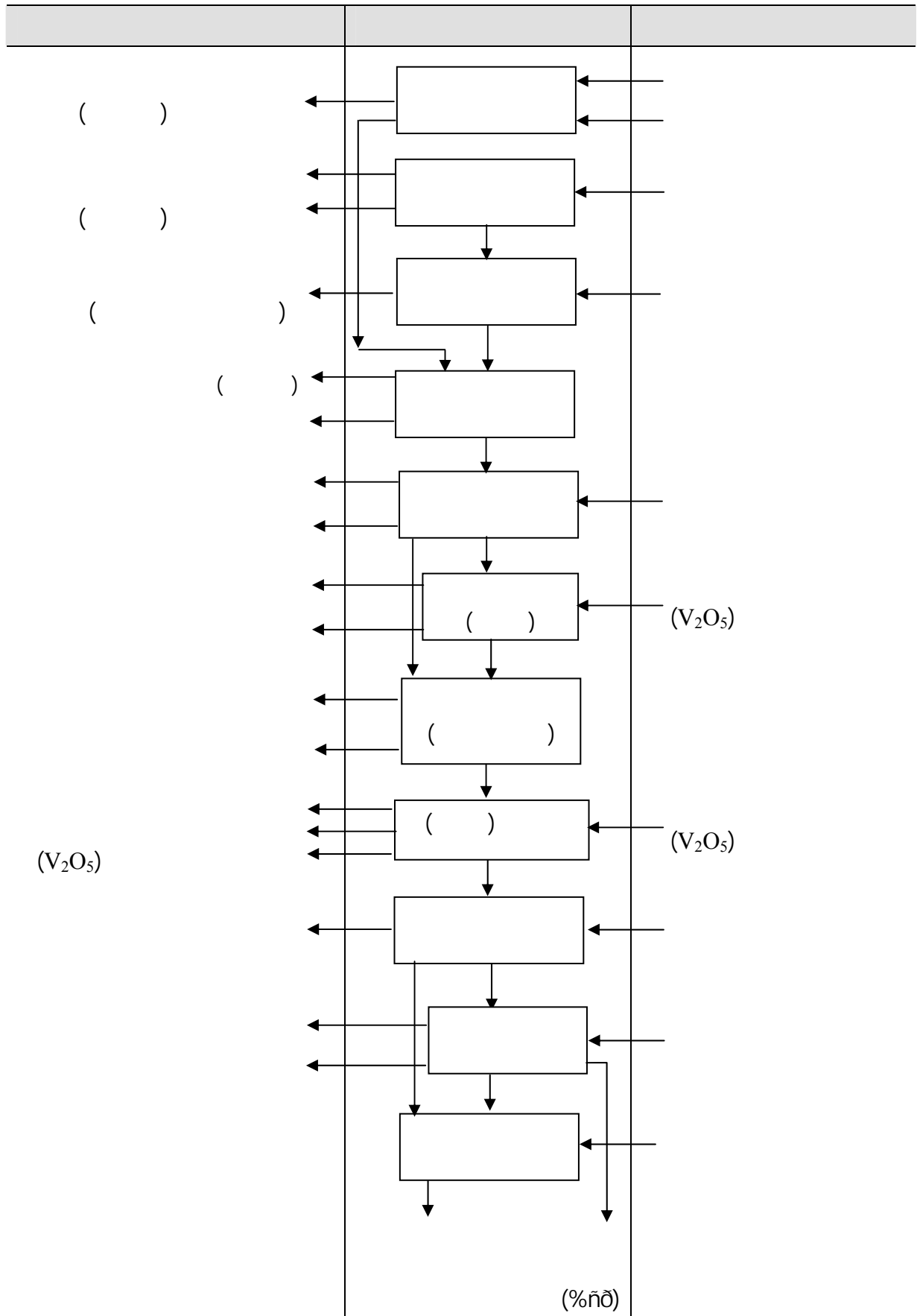
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(i)



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(Fuel oil)

(NH3)

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: (Catalytic steam reforming)

(H2S)

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(adsorbent)

(adsorbent)

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H2

(CoO & MoO3)

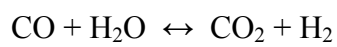
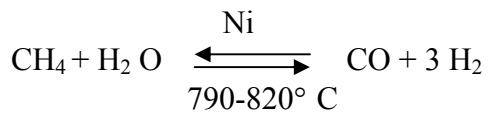
S

(Catalytic Steam Reforming)

(-)

(Ni)

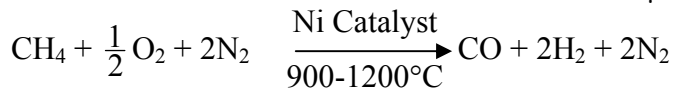
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(H₂, N₂, CO, CO₂ and H₂O)
(WHB)



(Converter)

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Carbon dioxide Removal

(MDEA)

(MEA)

MEA

(BAT)

.BAT

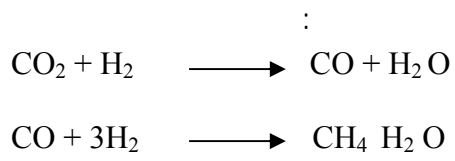
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(Methanation)

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(Synthesis gas)

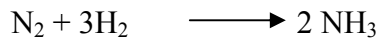
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(Ammonia Synthesis)

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(Liquid vapor separator)

. (Let-down separator)

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(Let-down separator)

(Scrubbed)

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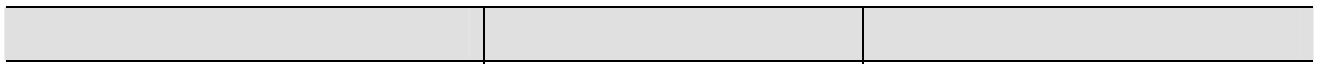
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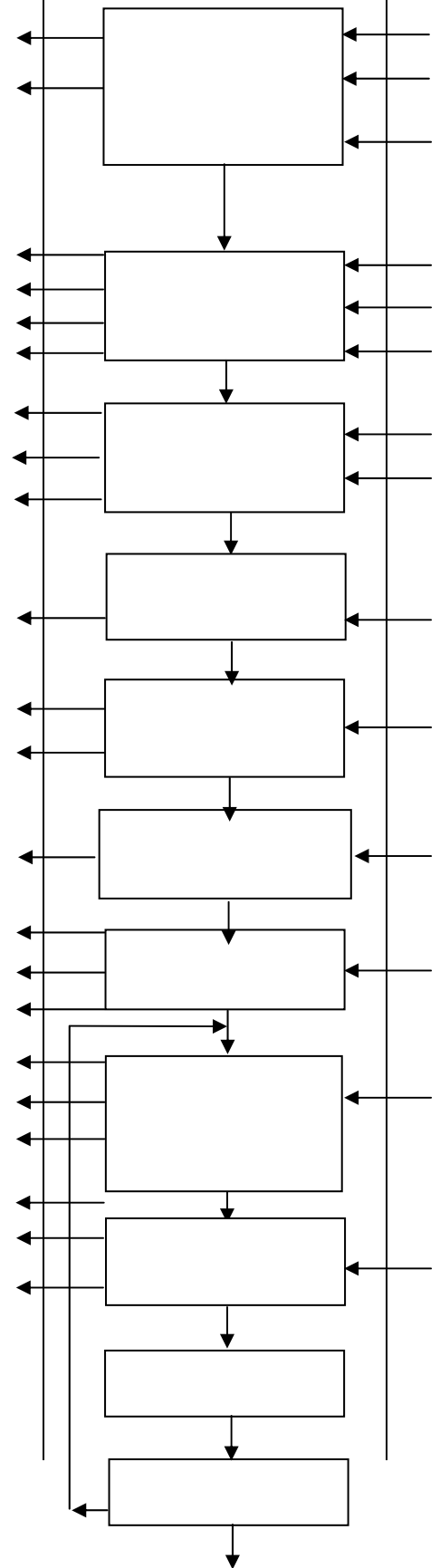
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(i)



(CO, CO₂, H₂, CH₄)

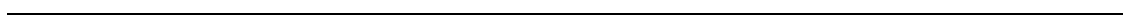
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(Tail gas)

(expander)

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(Primary air filtration)

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candle filter () (

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(Air preheating)

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(fledges)

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(Ammonia evaporation and filtration)

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(Mixed Filters)

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(Ammonia oxidation)

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(Ammonia oxidation

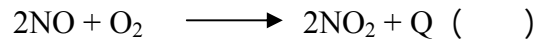
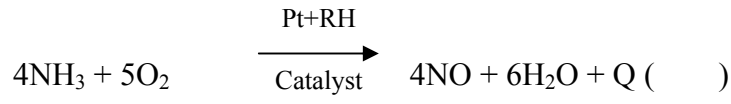
(°ð) (°)

converter)

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(WHB)

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.(Absorption column)

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.Tail gas (

o -

(Cooling)

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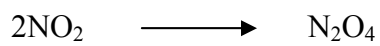
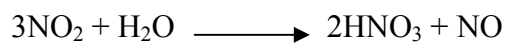
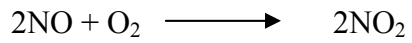
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(%)

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(Counter Current flow)



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(Sieve plate)

(bubble cap)

(Purging)

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(Tail gases)

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.Packed towers

(Bleaching)

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NO₂

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(counter- current)

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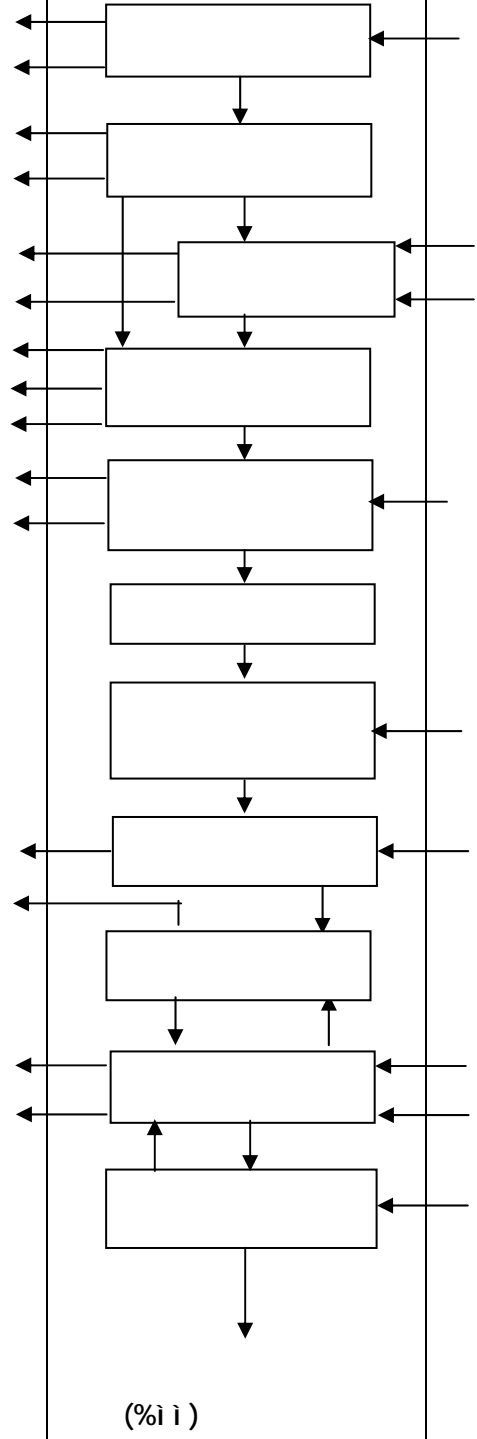
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(austenitic)

(i)



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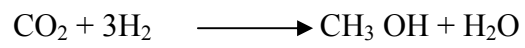
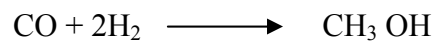


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(Methanol Production)

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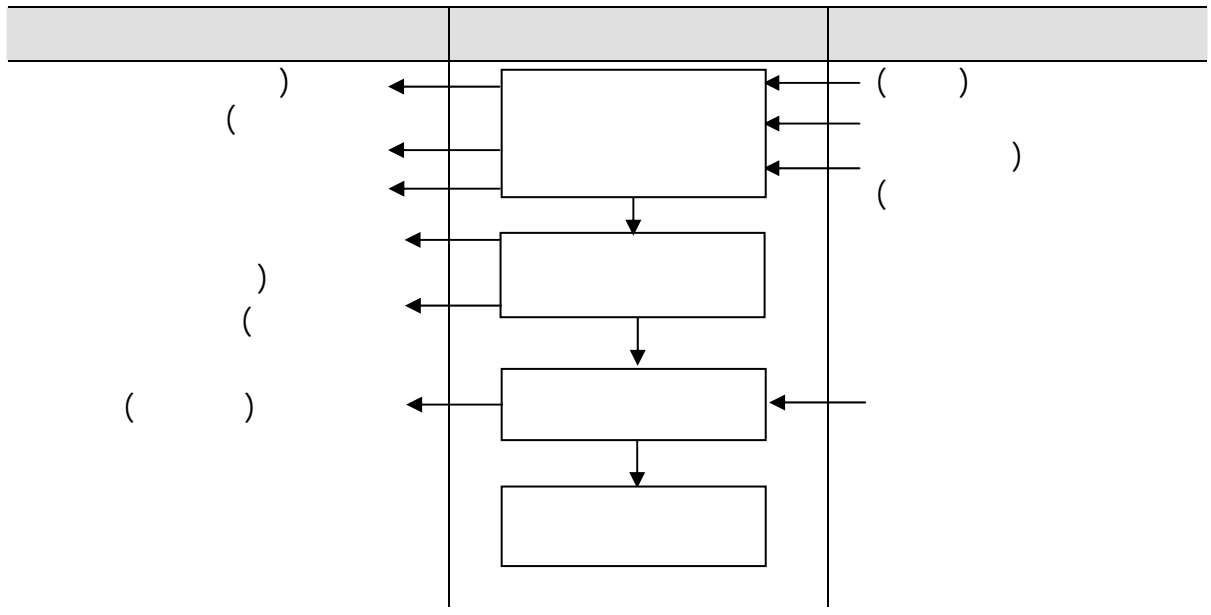


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(d)



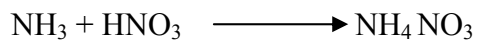
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(Neutralization)

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(Evaporation)

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(multi effect)
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(Mixing the filling material)

% ë, %ë
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(Prilling or Granulation)

Fluidized)
(.. Drum Granule bed
(prill tower)

(Drying & Screening)

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(Final Cooling)

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. H₂O N₂O
.. NO₂ NO N₂

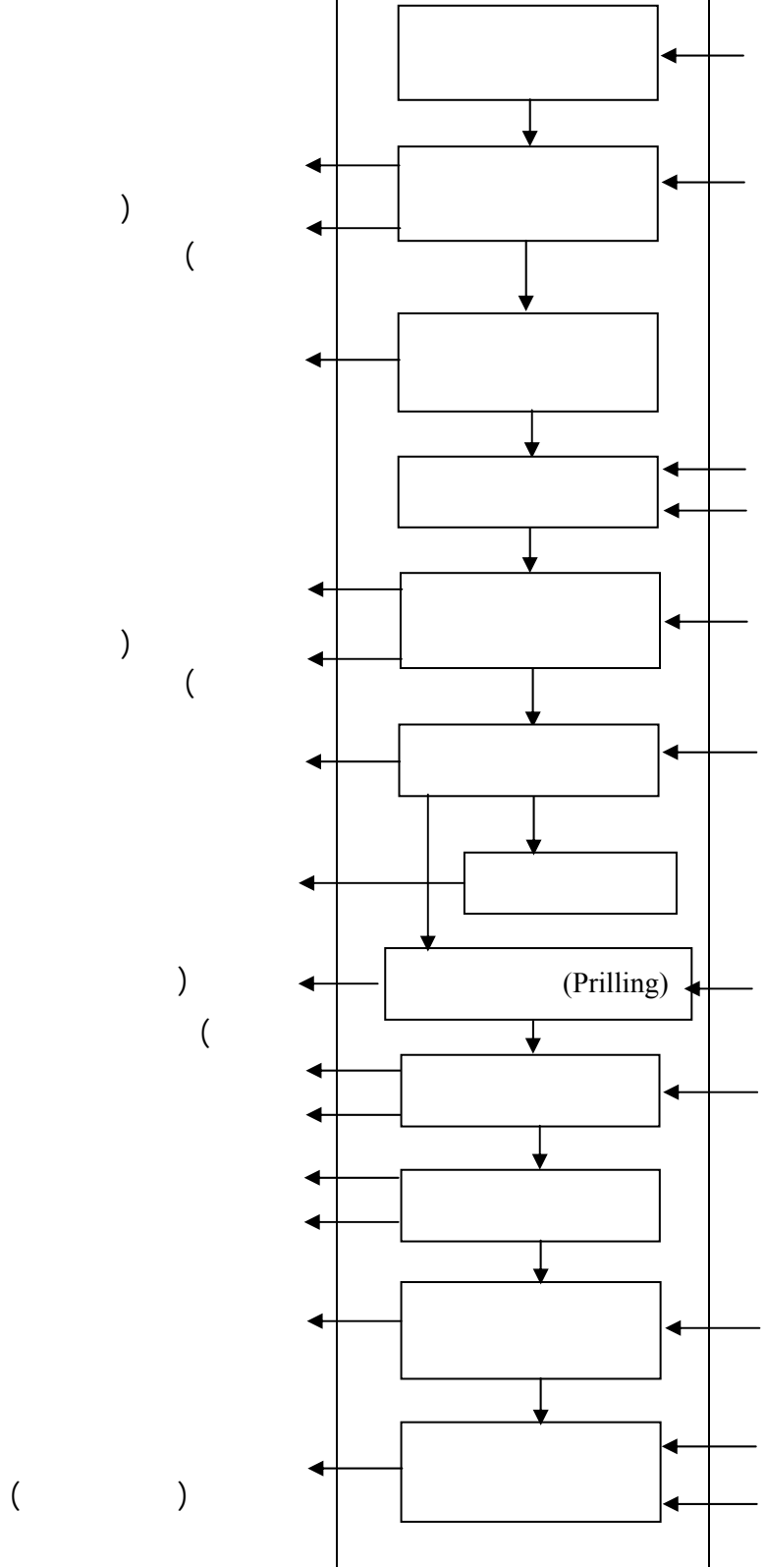
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(Reaction of Ammonia and Sulphuric Acid)

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(Crystallization)

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(mother liquor)

(Drying)

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(rotary

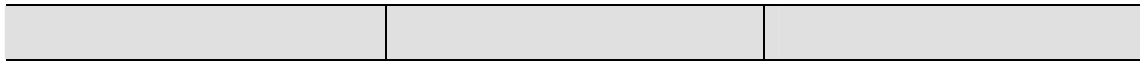
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dryer)

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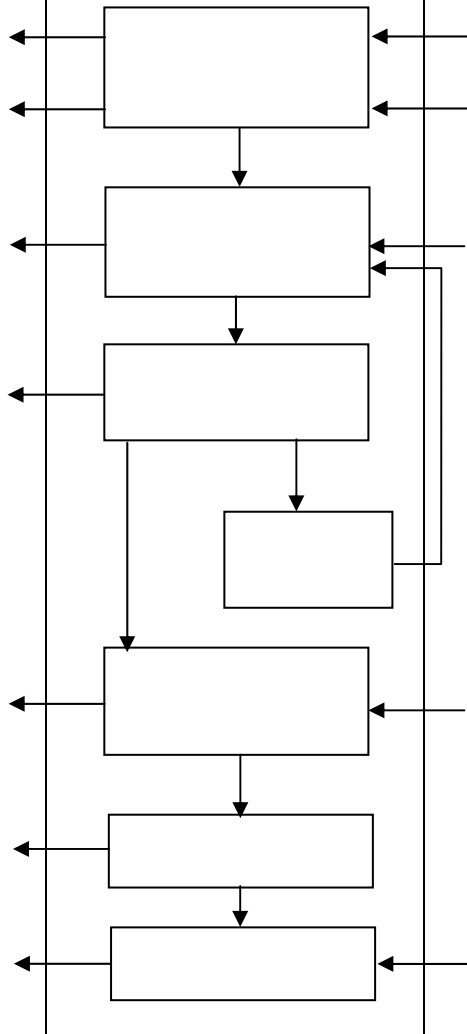
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(mono-A.P)

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.(Di-A.P)

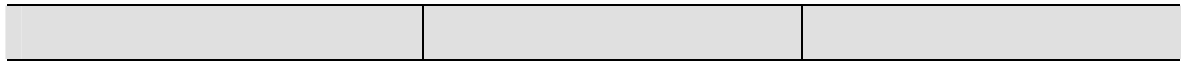
. (rotary dryer)

(two-stage reactor)

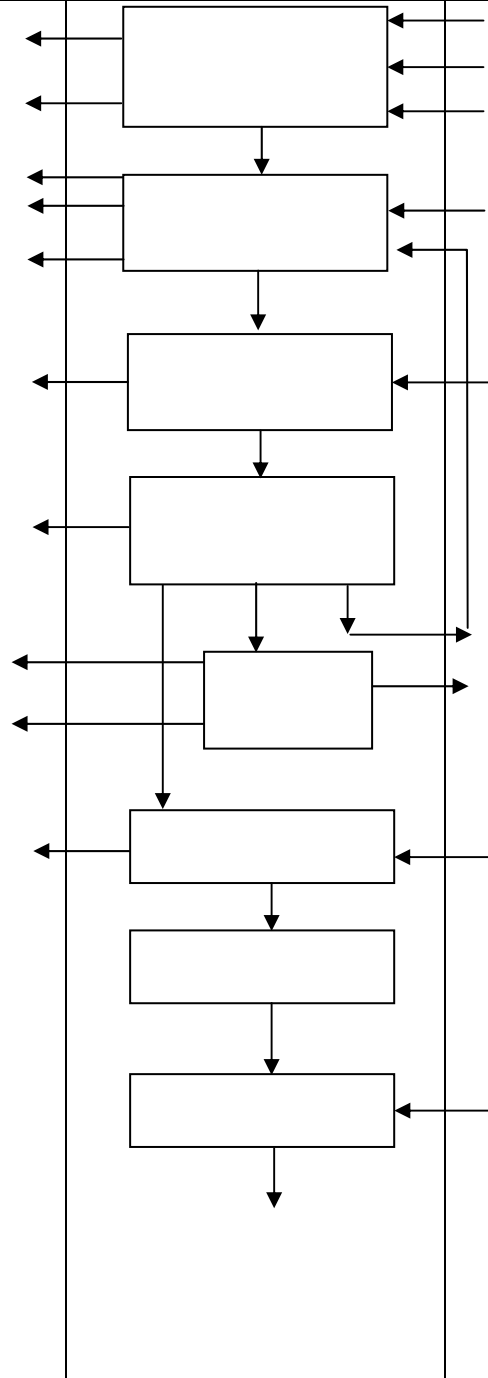
(Prilling)
(granulator)

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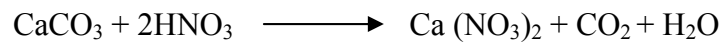
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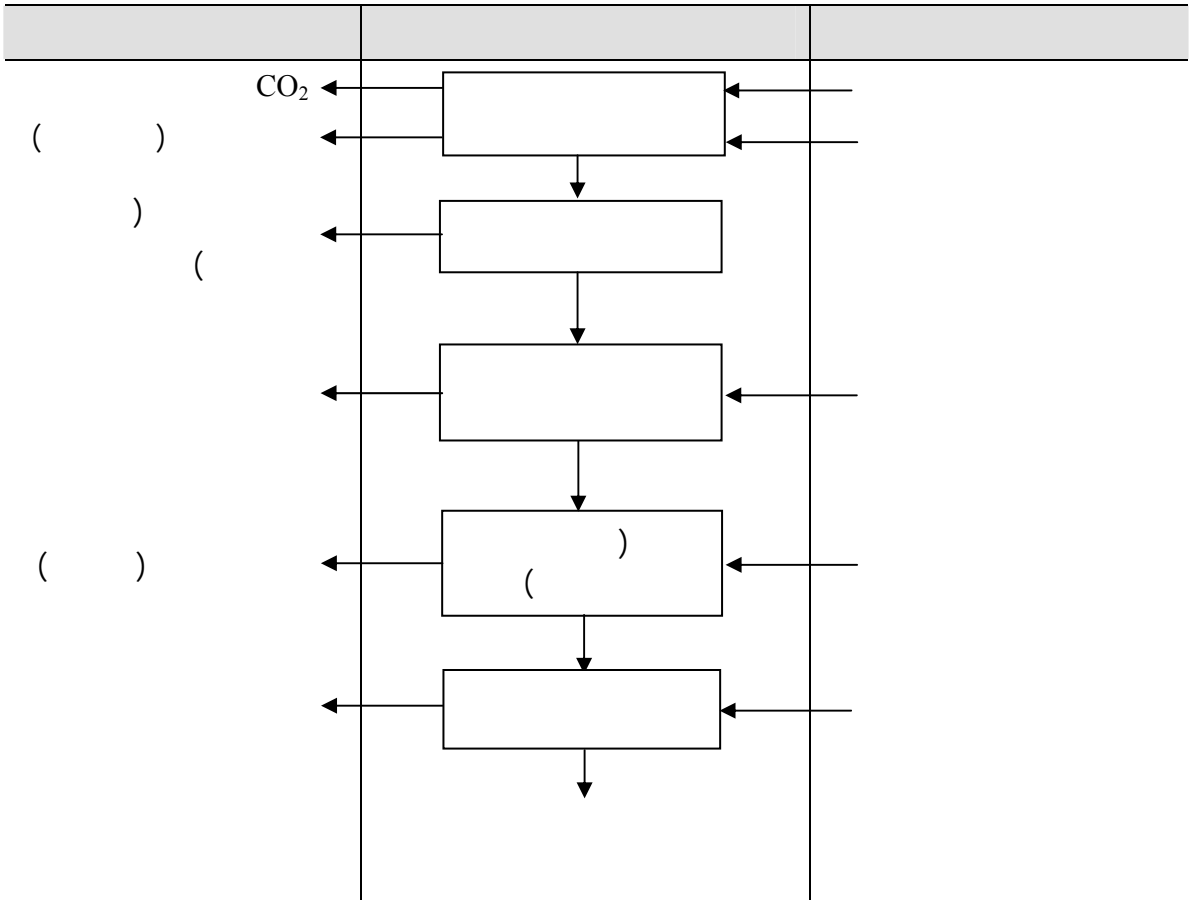
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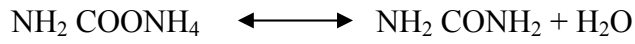
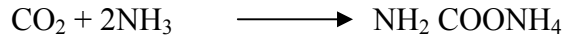
(Carbamide)

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(Urea synthesis)

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(rectifying)

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(Evaporation)

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(Recovery)

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(Prilling)

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(ammonia)

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Carbamate

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high-pressure scrubber

(Bed)

flash tank

(%D)

(%ñð)

prills

vacuum

prilling tower

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.hydrolyser

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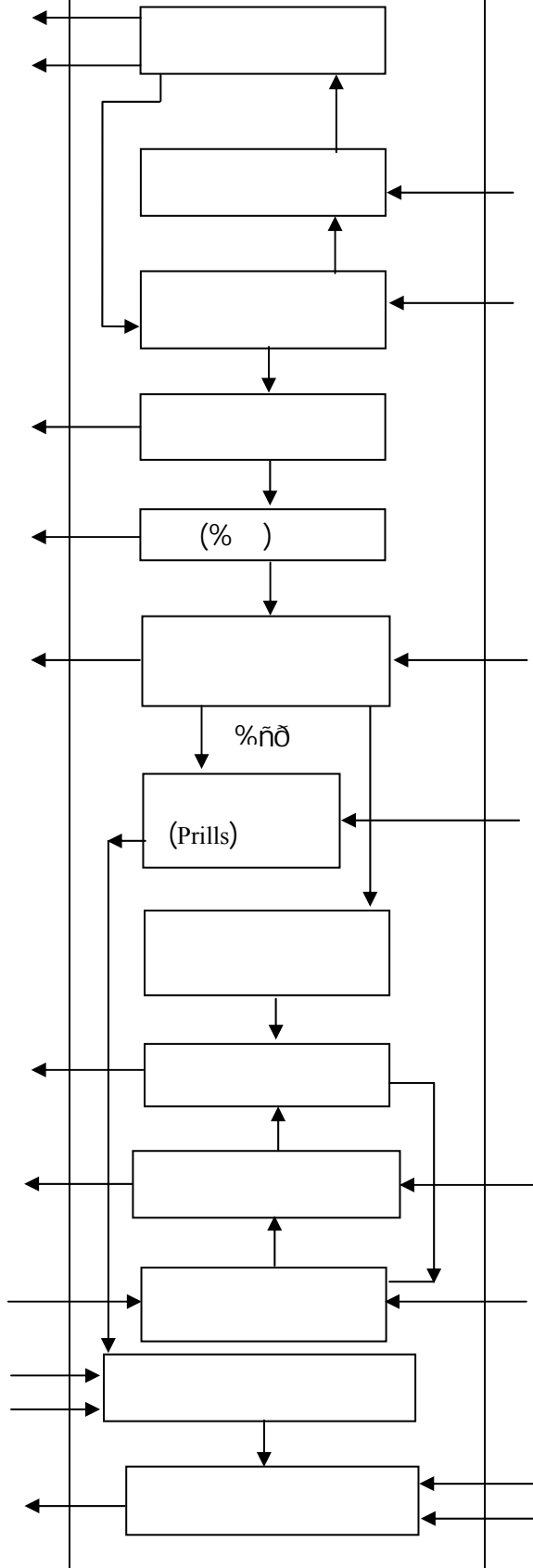
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(Bagging)

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(Scraper)

bucket elevator

Screw conveyor

hammer mill

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(diesel oil) (fuel oil)

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(SO_x NO_x)

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(Scale)

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(softener)

(PPM)

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.(cation exchange)

(lime)

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ppm

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organic poly-electrolytes

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resins

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.(mixed bed)

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.TDS

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piston

(piston)

(cylinder)

.(frequency compressors)

(non-return valve)

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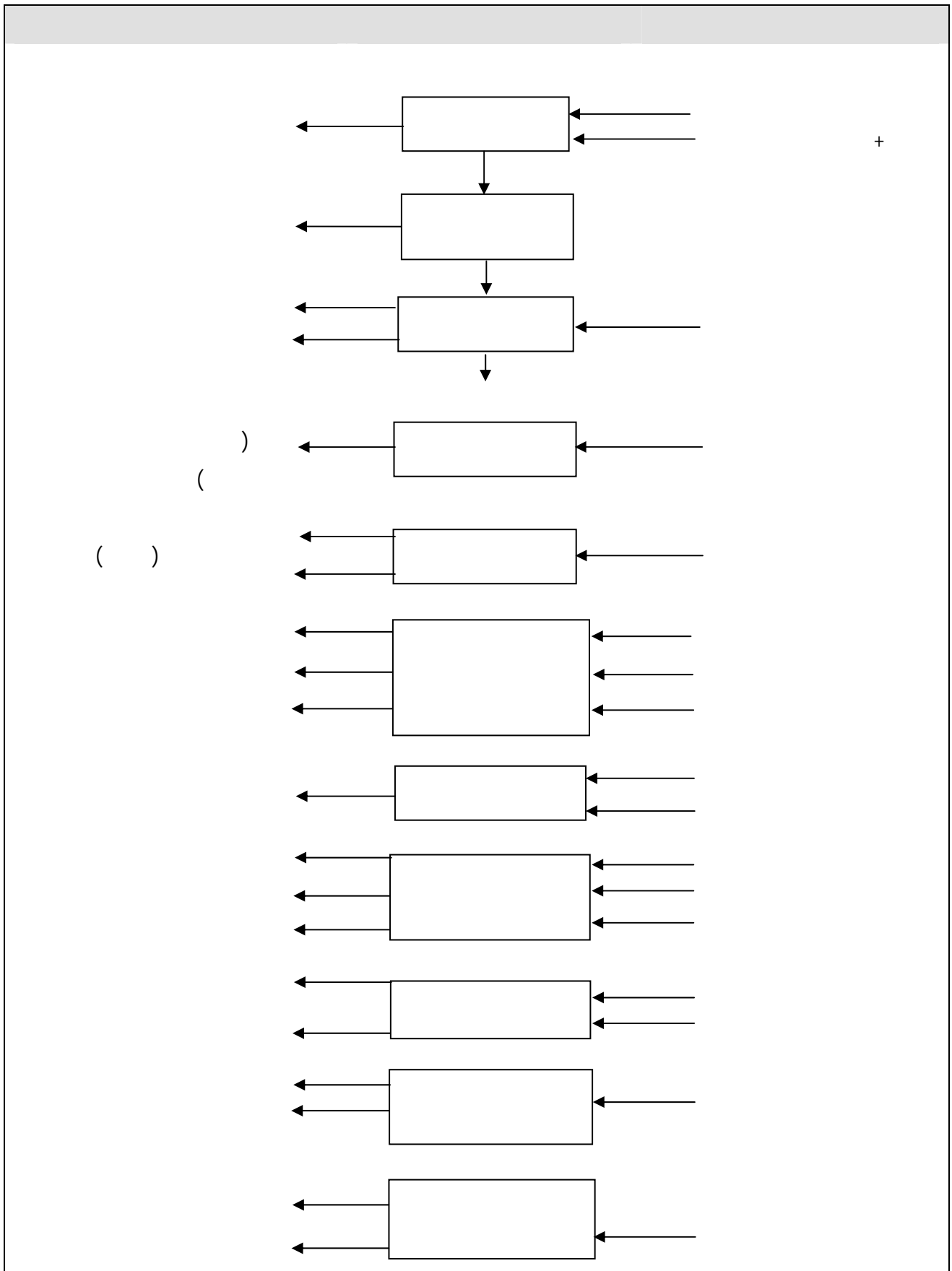
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(retention ponds)

- CaF₂ i è
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 (lime)
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.() scrubbers

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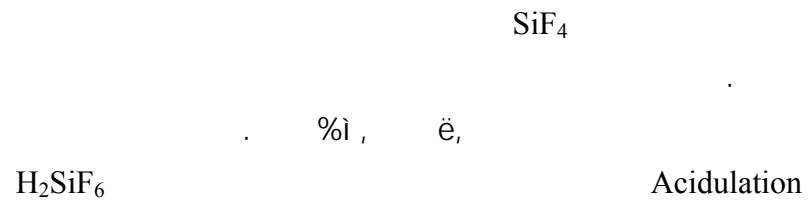
(curing) ()

(HF)

(SiF₄)

(SiF₄)

acidulation



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(tail
(NO_x) (NO_x) gas)

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(gauze)
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N2 ()

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) (prilling)

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.scrubber

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(scrubbers)

(TM)

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(prilling)

(coating)

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(pH)

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NH₃

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(CH₃OH)

(CO₂)

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filter cake

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			SiO ₂		
			SiF ₄ , SiO ₂		
		S.S H ₂ SiF ₆			
SiF ₄ HF					
			SiF ₄		
			SiF ₄		
		S.S , H ₂ SiF ₆			

			SiF ₄ , HF		
HF, SiF ₄			SiF		
		()			
		()			
			SiF ₄		
		H ₂ SO ₄		H ₂ SO ₄	
			SO ₂		
SO ₂ SO ₃			SO ₂ , SO ₃		
SO ₂ , SO ₃			SO ₂ , SO ₃	H ₂ SO ₄	
H ₂ S			H ₂ S		

			SO _x	CoO, HoO ₃	
	(Ni)		CO ₂ , CO CO, CO ₂	()	
	Ni			/ /	
			CO, H ₂ S, SO ₂	(DMEA, ,EA) (
		()	CO ₂ , CO, NH ₃ MEA		
	()			Fe	
					W.H.B
			NO _x		
			NO _x		
			NO _x		
			NH ₃		()

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() (corrosive)

(eutrophication)

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hyponatremia

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(and hypokalemia

(extravasations)

(hydroxyl radical)

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(soil urease)

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(biotic hydrolysis)

(photosynthesis)

(isocyanate)

(ammonium carbamate)

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(corrosive)

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(metalloenzymes)

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(leucopenia)

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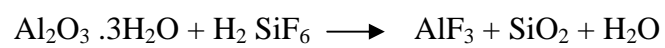
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- Toxnet
- <http://wbln0018.worldbank.org/essd/essd.nsf>
- <http://www.cleanerproduction.com/industries/Fertilizers.htm>
- <http://eippcb.jrc.es/pages/Factivities.htm>
- <http://www.epa.gov/oeca/sector>

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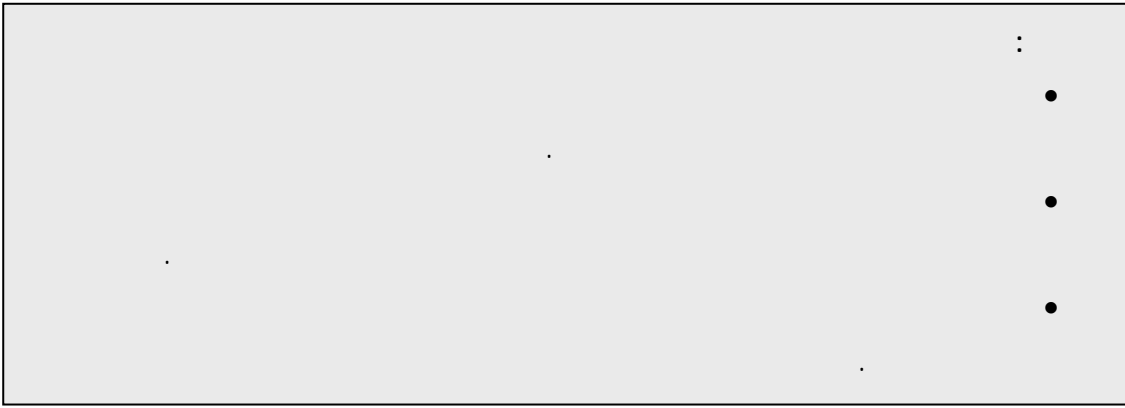
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- 1) SEMMADCO's Environmental Action Plan
 - 2) Pollution Abatement Action Plan for El Nasr Company for Fertilizers and Chemical Industries SEMADCI.
 - 3) Pollution Control of Industrial Effluents In Rosetta Branch Water course (Vol. 1,2)
 - 4) Suez Fertilizer Manufacturing Industrial Wastewater Treatment Plant.
 - 5) Talkha Fertilizer Plant
 - 6) Audit of Kafr El Zayaat for Pesticides and Chemicals Company
 - 7) Concept Evaluation and Comprehensive Pollution Abatement Plant for El Nasr Company of or Fertilizers and Chemicals.
 - 8) Profile of the Agricultural Chemical, Pesticides and Fertilizer Industry, (EPA , Sept. 2000)
 - 9) Best Available Techniques for Producing Large Volume Gaseous and Liquid Inorganic Chemicals, UIC – Union Des Industries Chimiques Jan. 2000.
 - 10) The Environmental Audit of The Abu Zaabal Co. for Fertilizers and Chemicals.
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