ANNEXURE

1. LAYOUT PLAN
2. TOPOGRAPHICAL MAP
3. MANUFACTURING PROCESS
4. LAND DOCUMENTS
Glyphosate Tech.
Mass Balance of Glyphosate

1 Preparation of Chlormethyl Phosphonic acid

Formaldehyde 50 Kg
Phosphorous
Trichloride 230 Kg

Step I 195 Kg

2 Preparation of Sodium salt of Glyphosate

Step I mass 195 Kg
Glycine 123.5 Kg
Sodium Hydroxide 66 Kg

Step II 288.5 Kg

3 Preparation of Glyphosate Technical.

Step II mass 288.5 Kg
Hydrochloric acid 60 Kg

Step III 225 Kg

Final Yield Obtained 225 kg of Glyphosate Tech.
Pretilachlor Tech.
Mass Balance of Pretilachlor

1 Preparation of 2,6-Diethyl aniline

<table>
<thead>
<tr>
<th>Compound</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,6 Diethyl aniline - bromo - 2-</td>
<td>114</td>
</tr>
<tr>
<td>Propoxyethane</td>
<td>128</td>
</tr>
<tr>
<td>Sodium carbonate</td>
<td>50</td>
</tr>
</tbody>
</table>

Step I: 410 Kg

2 Preparation of Pretilachlor

<table>
<thead>
<tr>
<th>Compound</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,6-Diethyl-N-(2-propoxyethyl)Aniline</td>
<td>410</td>
</tr>
<tr>
<td>Chloro acetylchloride</td>
<td>78</td>
</tr>
<tr>
<td>Toluene</td>
<td>206</td>
</tr>
<tr>
<td>Triethylamine</td>
<td>72</td>
</tr>
</tbody>
</table>

Step II: 350 Kg

Final Yield Obtained 350 kg of Pretilachlor Technical.
Thiamethoxam Tech.
Mass Balance of Thiamethoxam

1  S- Phenyl Solution

<table>
<thead>
<tr>
<th>S-phenyl</th>
<th>532 Kg</th>
<th>Step I</th>
<th>940 Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>32% HCL</td>
<td>339 Kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td>70 Kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2  Chlorination

<table>
<thead>
<tr>
<th>S-phenyl Solution</th>
<th>940 Kg</th>
<th>Step II</th>
<th>1150 Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorine gas</td>
<td>288 Kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulphur dioxide gas</td>
<td>174 Kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toluene</td>
<td>700 Kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3  Neutralization & Isolation

<table>
<thead>
<tr>
<th>Aqueous layer</th>
<th>1150 Kg</th>
<th>Step III</th>
<th>350 Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caustic lye 27%</td>
<td>462 Kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimethyl carbonate</td>
<td>840 Kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Final Yeild Obtained 350 kg of Thiamethoxam Tech.
Manufacturing Flow Diagram of Thiamethoxam

4-Nitroimino-3-methyl Isoxazole (600 KG) → Reactor → K2CO3 (270 KG) → Distillation and Filtration → HCl 30% (50KG) → Reactor → Thiamethoxam (1000 KG)

DMF (1999 KG) → Reactor → Solid waste (300 KG) → DMF (3599 KG) → DMF loss (400 KG) → Filtrate to ETP (257 KG)
Manufacturing Flow Diagram of Bifenthrin

DMF (2000 KG)  BPC (500 KG)  KGH Acid (650 KG)  K2CO3 (50 KG)  Catalyst (TBAB) (25 KG)

Reactor → DMF Recovery (1950 KG)

Water (4500 KG)  Hexane (2000 KG)

Sodium Bi-carbonate sol. (250 KG)

Reactor → Hexane Recovery (1725 KG)

Hexane (2500 KG)  5% EtOH in Hexane (250 KG)

Crystallization, Filtration & Drying → To ETP (5000 KG)

Hexane Recovery (2550 KG)

Bifenthrin (1000 KG)

Solid Waste (500 KG)
1. Fipronil Technical

   Process Description

Trifluoromethane sulfinyl chloride is reacted with 5-amino-3-cyano-1-(2,6-dichloro-4-trifluoro methyl phenyl)-1H-pyrazole to form Fipronil. Ethylenedichloride is used as solvent, which is recovered & reused.

Process Flow Diagram of Fipronil
CHEMICAL REACTION OF FIPRONIL

5-amino-3-cyano-2,6 – dichloro 4-trifluoromethyle
Phenyl pyrazole [ 321 ]

Fipronil [ 437 ]

MW=36.5
## Material Balance of Fipronil

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Input/Ton of Product</th>
<th>Total Consumption to produce 1kg of Fipronil Technical</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw Materials</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>5-amino-3-cyno-1-(2,6-dichloro-4-trifluoro methyl phenyl)-1H-pyrazole</td>
<td>0.93</td>
</tr>
<tr>
<td>2</td>
<td>Ethylene Di Chloride (EDC) (Fresh + Recovered)</td>
<td>3.730</td>
</tr>
<tr>
<td>3</td>
<td>Tri fluoromethanesulfinyl chloride</td>
<td>0.492</td>
</tr>
<tr>
<td>4</td>
<td>Trimethyl amine hydrochloride</td>
<td>0.492</td>
</tr>
<tr>
<td>5</td>
<td>4- DMAP</td>
<td>0.033</td>
</tr>
<tr>
<td>6</td>
<td>Ammonia solution</td>
<td>0.003</td>
</tr>
<tr>
<td>7</td>
<td>Water</td>
<td>8.60</td>
</tr>
<tr>
<td></td>
<td>Total (Ton)</td>
<td>14.28</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Output in Ton /Ton of Product</th>
<th>Disposals / ETP Offsite Recycling</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Item</td>
<td>Liquid Effluent</td>
</tr>
<tr>
<td>1</td>
<td>Fipronil</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Ethylene Dichloride</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Ethylene Dichloride</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>Hydrochloric acid -30%</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>Washing +salt</td>
<td>8.853</td>
</tr>
<tr>
<td>6</td>
<td>Residue</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Total (Ton)</td>
<td>8.853</td>
</tr>
</tbody>
</table>


Manufacturing Flow Diagram of Fipronil

Fipronil Pyrazole (1172 KG) → BrSCN (514 KG) → Reactor → HBr (552 KG)
MDC (5000 KG) → Reactor → MDC recovery (4790 KG)
DMF (4500 KG) → Reactor → MDC loss (210 KG)
SO2 (388 KG) → Reactor → DMF recovery (4300 KG)
CF3Br (756 KG) → Reactor → DMF loss (200 KG)
Sodium formate (255 KG) → Reactor → NaBr (334 KG)
TCA (4000 KG) → Reactor → TCA recovery (3813 KG)
DCAA (1500 KG) → Reactor → TCA loss (185 KG)
H2O2 (235 KG) → Reactor → DCAA recovery (1385 KG)
Water wash (8999 KG) → Reactor → DCAA loss (115 KG)
Methanol (5000 KG) → Filtration and Drying → Aq. Waste (10435 KG)
Fipronil (1000 KG) → Methanol recovery (4785 KG)
Methanol loss (215 KG)
**Imidacloprid**

Imidacloprid is manufactured by using two intermediates viz: CCMP & Imidinezole. The first intermediate CCMP is produced by chlorinating CMP using AIBN as catalyst in aqueous media, followed by washing of CMP hydrochloride to make crude mass. Finally fractionation of crude mass to get pure CCMP. The second intermediate Imidinezole is produced by dehydration of Guanidine Nitrate in presence of Sulphuric acid, followed by recrystallization to get pure Nitro Guanidine, which in turn by reacting with Dilute EDA (aqueous) and Hydrochloric acid under maintained pH condition. The mass is filtered, washed and the wet cake of Imidinezole is used for Imida reaction. Finally Crude Imidacloprid is manufactured by reacting CCMP with Imidinezole in presence of Potassium Carbonate using Propionitrile as solvent. After solvent recovery, crude is filtered and purified in Methanol, followed by filtration to get wet cake of purified Imida. Drying of wet cake under vacuum to obtain yield imidacloprid as finished goods.
This stamp sheet of Rs. 25,000.00 attached to the Lease Deed executed between U.P. State Industrial Development Corporation Ltd. & Shri Rajpal Singh for 81 years at a Rental (Lease Rent) of Rs. 26,400.00 Per Year i.e. 1% of rate of premium at the time of transfer with a premium of Rs. 7,94,000.00 regarding Plot no. HD-22 Situated of Industrial Area, Sikandrabad Site- SKB Distt. Bulandshahar. (U.P.)

LESSOR

[Signature]

Area Manager

UPSIDC Ltd

Sikandrabad

LESSEE

[Signature]
श्री दातापाल सिंह सूक आई-वेतनात राय
किवा 551 शाह बिला बांस, रेल्या 1915
शिया-कूल सरकार।

- for Samasjidul Coop Chemical

Sikanderabad.
This stamp sheet of Rs. 25,000.00 attached to the Lease Deed executed between U.P. State Industrial Development Corporation Ltd. & Shri Rajpal Singh for 81 years at a Rental (Lease Rent) of Rs. 26,400.00 Per Year i.e. 1% of rate of premium at the time of transfer with a premium of Rs. 7,94,000.00 regarding Plot no. HD-22 Situated of Industrial Area, Sikandrabad Site- SKB Distt. Bulandshahar (U.P.)

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[Signature]

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LESSOR

Area Manager
UPSIDC Ltd.
Sikandrabad

LESSEE
पट्टा विलेख

794,000.00 2,640,000.00 10,000.00

प्रतिकल
माधविन
अंगत वारिष्क किराया
प्रतिष्ठा
राजपाल सिंह
पुत्र
चंदरम सिंह

विवाह लिखा
591 धार सिंह नगर कैलकूटा सिताराम

भारतीय विदेश सेवा

निबंधन
18/11/2014

राजपाल सिंह
पुत्र
चंदरम सिंह

पट्टा कुमार
श्री
राजपाल सिंह
पुत्र
चंदरम सिंह

पेशा व्यापार
निवासी 591 धार सिंह नगर कैलकूटा सिताराम

पुष्प/पत्नी
पेशा नौकरी

ने निवास दीक्षा किया।

पेशा पदार्पण
श्री आरोहक ग्राम
पुत्र
अन्नप्राशक

वेतन कृप्या

निवासी
ग्राम पोंता कक्सपुर सितारा पश्चिम नगर

व श्री
ब्रजेश कुमार अल्पवाल
पुत्र श्री
राजकुमार सिद्धि

वेतन कृपया

निवासी
77 केसरीवाला सिताराम

देवी।

प्रकाशित कर दायदाय के निर्णय अनुसार निवास पनि लिये गये हैं।
U. P. State Industrial Development Corporation Ltd.

Regional Office: Swrajpur

POSESSION MEMO

Certified that the plot / shed No. H/D - 22 ........................................situated in Industrial Area Sikkotriabad ........................................details whereof are given below has been transferred today viz. 18/11/2016 at 14.30 AM/P.M. by the U.P. State Industrial Development Corporation Ltd. to Shri Rajpal Singh S/o Shri Chet Ram Singh Licencee/Lessee/Purchaser after preuse demarcation. *Plot is lying vacant/ There are construction etc. on the plot.*

Dimensions and boundaries of the land

Note: 1. All lines are not to scale

Lay out of the transferred land:

- Strike off Wherever is inapplicable.

18.00 M WIDE ROAD

Possession taken over for and on behalf of:

1. 
2. 
3. 

Designation / Status

Dated:

Witness:

1. 
2. 5240 G.T Road, SKD

Witness:

1. 
2. 

No. ................................SIDC/RO ........................................Dated...

Copy forwarded for information and necessary action:
