II-2 Production technology of Chlorpyrifos in China

In terms of the different synthesis methods TCP, an intermediate of Chlorpyrifos, the production technology of Chlorpyrifos technical can be classified into 2 routes, [redacted]

…….

Table II-2-1The comparison between trichloro-acetyl chloride route and pyridine route in the production of TCP

Item	Route	
	Trichloro-acetyl chloride	Pyridine
Advantages	[redacted]	[redacted]
Disadvantages	[redacted]	[redacted]

Table II-2-2 The raw material, solvent and catalyzer of the 3 synthesis methods of Chlorpyrifos

Item	Organic solvent method	Bi-solvent method	Aqueous phase method
Key raw material	[redacted]		
Solvent	[redacted]	[redacted]	[redacted]
Catalyzer	[redacted]		

Table II-2-3 The cost of raw materials in the production of Chlorpyrifos using trichloro-acetyl chlorid as the starting raw material, by aqueous phase method, as of August 2008

No	Item	Unit consumption (t/t)	Price (RMB/t)	Cost (RMB/t)
1	[redacted]	[redacted]	[redacted]	[redacted]
2	[redacted]	[redacted]	[redacted]	[redacted]
3	[redacted]	[redacted]	[redacted]	[redacted]
4	Others	[redacted]		
5	**Total**	[redacted]		

II-3 Current production situation (capacity, output, species, major producers, growth rate (2003~2007), etc.)

Table-3.1-1 Capacity distribution situation of major active producers of Chlorpyrifos technical in 2008

No.	Capacity (100%, t/a)	Number of producer	Share
1	Over 10,000	[redacted]	[redacted]
2	5,000	[redacted]	[redacted]
3	1,000~3,000	[redacted]	[redacted]

4	Less than 1,000		
Total			

Table II-3.1-3 Capacity and output of major Chlorpyrifos technical producers in China as of Aug. 2008

No.	Abbr.	Status'08	Launch time	Cap. '07 (t/a)	Cap. as of Aug. 08 (t/a)	Output '07 (t)	Output 1HF 2008 (t)	Operation rate '07
VI-01								
VI-02								
VI-03								
VI-04								
VI-05								
VI-06								
VI-07								
VI-08								
VI-09								
VI-10								
VI-11								
VI-12								
VI-13								
VI-14								
VI-15			2008	0	500	0	200	
VI-16								
VI-17								
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								

II-3.2 Summary of Chlorpyrifos formulation production

At present, there are mainly 2 Chlorpyrifos formulations including 40% Chlorpyrifos EC and 480g/L Chlorpyrifos EC in China. In order to reduce the price of Chlorpyrifos formulation and expand the domestic market, many mixed formulations of Chlorpyrifos have been developed. The market share of such formulations has been increasing in China in recent years.

…….

II-4 Supply situation of raw materials in China

Table II-4.1-1 The major TCP producers in China in 2008

No.	Company	Abbr.	Location	Route	Capacity '08 (t)
1	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
2	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
3	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
4	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
5	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
6	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
7	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
8	[redacted]	[redacted]	[redacted]	[redacted]	2,000
Total					[redacted]

Table II-4.1-2 The major trichloro-acetyl chloride producers in China in 2008

No.	Company	Abbr.	Location	Capacity '08
1	[redacted]	[redacted]	[redacted]	[redacted]
2	[redacted]	[redacted]	[redacted]	[redacted]
3	[redacted]	[redacted]	[redacted]	[redacted]
Total				[redacted]

II-8 Import & export situation of Chlorpyrifos in China in 2007

…….

Table II-8.2-1 Export price of Chlorpyrifos in 2007 (Quantity: tonne, Price: USD/kg, Value: USD)

Month	40% EC		480g/L EC		Tech.		Value
	Quantity	Price	Quantity	Price	Quantity	Price	
Jan-07	[redacted]	3.41	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Feb-07	[redacted]	3.68	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Mar-07	[redacted]	3.69	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Apr-07	[redacted]	3.55	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
May-07	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Jun-07	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Jul-07							
Aug-07							
Sep-07							
Oct-07							
Nov-07							
Dec-07		3.69					
Total							

II-9 Demand for Chlorpyrifos in China

At present, Chlorpyrifos has been one of the most widely used insecticides in China. It is mainly applied to rice, fruit tree, vegetable, tea, etc. Chlorpyrifos has also been used in the control of underground pest, ectozoas of domestic animals and public health pests.

…….

Table II-9.1-1 The consumption situation of Chlorpyrifos technical in active producers in China in 2007 (Unit: tonne)

No.	Producer	Used by itself	Export	Sold in domestic market	Total
VI-01					
VI-02					
VI-03					
VI-04		350	17		
VI-05					
VI-06					
VI-07					900
VI-08					
VI-09		300	73		
VI-10		180	3		
VI-11		160	0		
VI-12					
VI-13					
VI-14					
VI-15					
VI-16					
VI-17					