

Note: Key data/information in this sample page is hidden, while in the report it is not.

1 Overview of global glyphosate industry

1.1 Supply (distribution, production, circulation)

Table 1.1-1 Key players of glyphosate technical in the world, 2014

Glyphosate producer	Capacity '14, '000 t/a	Output, '000 t					
		2009	2010	2011	2012	2013	2014
Chinese (about 50 producers)	█	█	█	█	█	█	█
█	█	█	█	█	█	█	█
█	█	█	█	█	█	█	█
█	█	█	█	█	█	█	█
█	█	█	█	█	█	█	█
█	█	█	█	█	█	█	█
█	█	█	█	█	█	█	█
Others	█	█	█	█	█	█	█
Total	█	█	█	█	█	█	█

Source: CCM

1.3 Forecast on global glyphosate industry for 10 years

1.3.1 Factors influencing global glyphosate supply and demand

- Driving forces

Table 1.3.1-2 Production of bioethanol and corresponding corn consumption in the US and Brazil, 2005-2013

Year	the US				Brazil			
	Bioethanol production, billion liters	Corn used for bioethanol, million tonnes	Corn production, million tonnes	Share of corn used for bioethanol, %	Bioethanol production, billion liters	Sugarcane used for bioethanol, million tonnes	Sugarcane production, million tonnes	Share of sugarcane used for bioethanol, %
2005	█	█	282	█	█	█	█	█
2006	█	█	█	█	█	█	█	█
2007	█	█	█	█	█	█	█	█
2008	█	█	█	█	█	█	█	█
2009	█	█	█	█	█	█	█	█
2010	█	█	█	█	█	█	█	█
2011	█	█	█	█	█	█	█	█
2012	█	█	█	█	█	█	█	█
2013	█	█	█	█	█	█	█	█

Source: The United States Department of Agriculture; the Brazilian Sugarcane Industry Association

3 Development trend of glyphosate technical production routes

3.3 Competitiveness analysis of different routes

3.3.2 Influence of stricter environmental protection policies

Table 3.3.2-2 Source and content of glyphosate liquid waste

Pollutant	Glyphosate mother liquid (IDA pathway)	PMIDA mother liquid	Glyphosate mother liquid (Glycine route)
Glyphosate (%)	■	■	■
PMIDA (%)	■	■	■
Formaldehyde (%)	■	■	■
Phosphorous acid (%)	■	■	■
Sodium chloride (%)	■	■	■
Glycine (%)	■	■	■
Other organic substance (%)	■	■	■

Source: Hangzhou Tianchuang Environmental Technology Co., Ltd.

Table 3.3.2-4 Comparison of membrane method and selective transformation and burning method for disposal of glyphosate mother liquid

Item	Membrane method	Selective transformation and burning method
Phosphorus utilization rate	■	■
Salt disposal	■	■
Water consumption	■	■
Solid waste	■	■
Waste gas	■	■
Initial investment	■	■
Operation cost* (USD/t glyphosate)	■	■
Side product	■	■

Note: * Revenue of side products excluded.

Source: CCM & Changjiang Securities

Table 3.3.2-5 Investment of 100,000 t/a wastewater treating project by Zhejiang Wynca

Item	Content	Amount, USD
Pretreatment to concentration	Equipment	■
	Civil work	■
	Installment	■
	Others	■
Burning to deep processing	Equipment	■
	Civil work	■
	Installment & auxiliary	■
	Flow capital	■
	Others	■
Total		■

Source: CCM

3.3.3 Cost of glyphosate technical by route

Table 3.3.3-2 Raw material cost of glycine route for glyphosate technical production in China, Oct. 2014

Raw material	Unit consumption, t/t	Unit price, USD/t	Unit cost, USD/t
Glycine (Industrial grade)	■	■	■
Paraformaldehyde (37%)	■	■	■
Triethylamine (99.5%)	■	■	■
Methanol (95%)	■	■	■
DMP	■	■	■
Hydrochloric acid (30%)	■	■	■
Liquid caustic (32%)	■	■	■
Total			■

Source: CCM

4 Opportunities derived from development of global glyphosate industry—raw materials

4.2 Investment and supply opportunities for key raw materials

4.2.3 Paraformaldehyde

Table 4.2.3-1 Global capacity and output of paraformaldehyde by continent, 2012-2014

Continent	Number of producers, 2014	Total capacity, t/a			Total output, tonne		
		2014	2013	2012	2014	2013	2012
Asia	■	■	■	■	■	■	■
America	■	■	■	■	■	■	■
Europe	■	■	■	■	■	■	■

Source: CCM

Table 4.2.3-2 Key global producers of paraformaldehyde beyond Mainland China

No.	Company	Country/region	Content	Capacity 2014, t/a
1	Ercros S.A.	Spain	89%-98%	■
2	■	■	■	■
3	■	■	■	■
4	■	■	■	■
5	■	■	■	■
6	■	■	■	■
7	■	■	■	■
8	■	■	■	■
9	■	■	■	■
10	■	■	■	■
11	■	■	■	■
12	■	■	■	■

Note: The capacity of paraformaldehyde of LCY Chemical Corp. in Mainland China is excluded.

Source: CCM