

# 2004 Worldwide Refining Survey

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Survey Editor

All figures are  
as of January 1, 2005

All figures in barrels per calendar day (b/cd)

## LEGEND

Numbers identify processes in table

### Coking

1. Fluid coking
2. Delayed coking
3. Other

### Thermal process

1. Thermal cracking
2. Visbreaking

### Catalytic cracking

1. Fluid
2. Other

### Catalytic reforming

1. Semiregenerative
2. Cyclic
3. Continuous regen.
4. Other

### Catalytic hydrocracking

1. Distillate upgrading
2. Residual upgrading
3. Lube oil manufacturing
4. Other
- c. Conventional (high pressure) hydrocracking: (>100 barg or 1,450 psig)
- m. Mild to moderate hydrocracking (<100 barg or 1,450 psig)

### Catalytic hydrotreating

1. Pretreatment of cat reformer feeds
2. Other naphtha desulfurization
3. Naphtha aromatics saturation
4. Kerosine/jet desulfurization
5. Diesel desulfurization
6. Distillate aromatics saturation
7. Other distillates
8. Pretreatment of cat cracker feeds
9. Other heavy gas oil hydrotreating
10. Resid hydrotreating
11. Lube oil polishing
12. Post hydrotreating of FCC naphtha
13. Other

### Alkylation

1. Sulfuric acid
2. Hydrofluoric acid

### Polymerization/Dimerization

1. Polymerization
2. Dimerization

### Aromatics

1. BTX
2. Hydrodealkylation
3. Cyclohexane
4. Cumene

### Isomerization

1. C<sub>4</sub> feed
2. C<sub>5</sub> feed
3. C<sub>5</sub> and C<sub>6</sub> feed

### Oxygenates

1. MTBE
2. ETBE
3. TAME
4. Other

### Hydrogen

- Production:
1. Steam methane reforming
  2. Steam naphtha reforming
  3. Partial oxidation
- Recovery:
- a. Third-party plant
  4. Pressure swing adsorption
  5. Cryogenic
  6. Membrane
  7. Other

## NOTES

- A Formerly listed as Sidanco  
B Formerly listed as Rafineria Gdanska SA  
C Formerly listed as Motiva Enterprises LLC  
D Formerly listed as Petrola Hellas  
E Formerly listed as Okta Crude Oil Refinery

- F Formerly listed as Tyumen Oil Co.  
G Formerly listed as Shell Co. of Thailand Ltd.  
H Formerly listed as Coastal Aruba Refining Co. NV  
I Formerly listed as Refineria de Petroleo Concon SA  
J Formerly listed as Veba Oel AG  
K Formerly listed as Farmland Industries  
L Formerly listed as Petrox SA

- M Formerly listed as Williams Alaska Petroleum Inc.  
N Formerly listed as Petrogal  
O Formerly listed as BP Lubes Services GMBH  
P Formerly listed as Oil Refineries Administration  
Q Formerly listed as Skandinaviska Raffinaderi AB  
R Formerly listed as Coastal Eagle Point Oil Co.  
S Formerly listed as Coastal ExxonMobil Refining Co.

### Capacity definitions:

Capacity expressed in barrels per calendar day (b/cd) is the maximum number of barrels of input that can be processed during a 24-hour period, after making allowances for the following: (a) Types and grades of inputs to be processed, (b) Types and grades of products to be manufactured, (c) Environmental constraints associated with refinery operations, (d) Scheduled downtime such as mechanical problems, repairs, and slowdown. Capacity expressed in barrels per stream day (b/sd) is the amount a unit can process when running at full capacity under optimal feedstock and product slate conditions. An asterisk (\*) beside a refinery location indicates that the number has been converted from b/sd to b/cd using the conversion factor 0.95 for crude and vacuum distillation units and 0.9 for all downstream cracking and conversion units.

### Hydrogen:

Hydrogen volumes presented here represent either generation or upgrading to 90+% purity.

### Catalytic reforming:

1. Semiregenerative reforming is characterized by shutdown of the reforming unit at specified intervals, or at the operators's convenience, for in situ catalyst regeneration.
2. Cyclic regeneration reforming is characterized by continuous or continual regeneration of catalyst in situ in any one of several reactors that can be isolated from and returned to the reforming operation. This is accomplished without changing feed rate or octane.
3. Continuous regeneration reforming is characterized by the continuous addition of this regenerated catalyst to the reactor.
4. "Other" includes nonregenerative reforming (catalyst is replaced by fresh catalyst) and moving-bed catalyst systems.

## REFINERY REMOVALS

Name	Location	Country	Crude b/cd	Reason
Batumi Oil Refinery	Batumi	Georgia, FSU	106,436	Shutdown.
ChevronTexaco Corp.	Las Minas	Panama	60,000	Refining operations were discontinued, operating as an oil terminal.
ChevronTexaco Corp.	Escuintla	Guatemala	16,000	Refining operations were discontinued, operating as an oil terminal.
Cyprus Petroleum Refinery Ltd	Larnaca	Cyprus	27,000	Shutdown April 18, 2004.
Gazprom	Astrakhan	Russia	66,000	Operates as gas condensate plant.
Gazprom	Surgut	Russia	88,000	Operates as gas condensate plant.
Gazprom	Urengoy	Russia	9,000	Operates as gas condensate plant.
Japan Energy Co.	Chita, Aichi	Russia	0	Not treating crude. Treats naphtha to produce BTX.
Repso YPF SA	Sucre	Bolivia	3,000	Shutdown.
Sinopec	39 Refineries	China	...	Shutdown.

## NEW REFINERIES

Name	Location	Country	Crude b/cd
Interoil	Port Moresby	Papua New Guinea	32,500