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# Service bulletin

# Industrial Chemicals and Synthetic Resins

August 2006

## Highlights

- Between July 2006 and August 2006, production of polyethylene in Canada increased 1.8% to 308,675 metric tonnes.
- Monthly production of ammonia increased 15.7% in August compared to the previous month, reaching 420,504 metric tonnes. However, this represented a marginal decline of 0.6% compared to August 2005.
- Monthly production of ethylene at 422,268 metric tonnes remained quite stable in August compared to July as well as August 2005.
- Monthly production of sulphuric acid rose significantly 35.5% between July 2006 and August 2006 to 340,810 metric tonnes.

## Statistical tables

**Table 1**

**Production of new virgin resin (excluding compounding or colouring ingredients), by product, monthly**

| Product | SCG [1] Code | August 2005 | July 2006 | August 2006 | Change August 2006 to July 2006 | Change August 2006 to August 2005 |
|---|---|---|---|---|---|---|
| | | metric tonnes | | | % | |
| **Synthetic resins** | | | | | | |
| Polyethylene, low and linear low density | 3901.10, 3901.90.10 | 184,794 r | x | x | x | x |
| Polyethylene, high density | 3901.20 | 114,505 r | x | x | x | x |
| **Polyethylene, total** | | 299,299 r | 303,126 | 308,675 | 1.8 | 3.1 |
| Polystyrene and acrylonitrile-butadiene-styrene (abs) | 3903.1, 3903.30 | 16,453 | 17,649 | 18,854 | 6.8 | 14.6 |
| Polyvinyl chloride | 3904.10 | x | x | x | x | x |
| Polyesters, unsaturated | 3907.91 | 6,957 | 5,689 | 6,066 | 6.6 | -12.8 |

x suppressed to meet the confidentiality requirements of the *Statistics Act*

1. SCG:Standard Classification of Goods.

## Table 2
## Production of industrial chemicals, by product, monthly

| Product | SCG [1] Code | August 2005 | July 2006 | August 2006 | Change August 2006 to July 2006 | Change August 2006 to August 2005 |
|---|---|---|---|---|---|---|
| | | metric tonnes | | | % | |
| **Acids** | | | | | | |
| Hydrochloric (muriatic) acid, 100% | 2806.10.20 | 10,728 | 13,265 | 12,025 | -9.3 | 12.1 |
| Nitric acid, 100 % | 2808.00.10 | 103,748 | 90,047 | 108,779 | 20.8 | 4.8 |
| Phosphoric acid, wet process | 2809.20 | x | x | x | x | x |
| Sulphuric acid, all grades, including oleum, as 100% | 2807 | 296,434 | 251,578 | 340,810 | 35.5 | 15.0 |
| **Other Industrial Chemical Products** | | | | | | |
| Aluminum sulphate (alum) | 2833.22 | 15,915 | 14,420 | 15,555 | 7.9 | -2.3 |
| Ammonia, anhydrous, 100% | 2814.10 | 422,963 | 363,298 | 420,504 | 15.7 | -0.6 |
| Ammonium nitrate, all grades | 3102.30 | 115,841 | 87,803 | 109,535 | 24.8 | -5.4 |
| Ammonium phosphate, all grades | 3105.30 | x | x | x | x | x |
| Butadiene | 2901.24.10 | 20,204 | 21,358 | 24,697 | 15.6 | 22.2 |
| Butylene | 2901.23 | 22,670 | 20,774 | 24,270 | 16.8 | 7.1 |
| Carbon black | 2803 | 20,843 | 17,537 | 19,798 | 12.9 | -5.0 |
| Chlorine | 2801.10 | 83,857 | 81,707 | 86,278 | 5.6 | 2.9 |
| Ethylene | 2901.21 | x | 421,024 | 422,268 | 0.3 | x |
| Formaldehyde, 100% solids basis | 2912.11 | 20,254 | 19,790 | 20,814 | 5.2 | 2.8 |
| Hydrogen peroxide, 100% | 2847.00 | 21,424 | 20,779 | 20,850 | 0.3 | -2.7 |
| Methyl alcohol (methanol) | 2905.11 | x | x | x | x | x |
| Propylene, as propylene in all grades | 2901.22 | 74,574 | 74,309 | 79,013 | 6.3 | 6.0 |
| Sodium chlorate | 2829.11 | 94,933 | 90,623 | 95,437 | 5.3 | 0.5 |
| Sodium hydroxide (caustic soda), as 100% NaOH | 2815.1 | 94,498 | 87,918 | 93,188 | 6.0 | -1.4 |
| Urea, all grades | 3102.10 | 286,267 | 301,686 | 317,435 | 5.2 | 10.9 |
| Benzene | 2902.20 | 65,124 | 69,321 | 73,074 | 5.4 | 12.2 |
| Toluene | 2902.30 | 13,553 | 24,220 | 34,937 | 44.2 | 157.8 |
| Xylene | 2902.4 | 13,917 | 25,478 | 36,368 | 42.7 | 161.3 |
| Zinc oxide | 2817.00.1 | x | x | x | x | x |

x suppressed to meet the confidentiality requirements of the *Statistics Act*
1. SCG:Standard Classification of Goods.

## Table 3
## Production of new virgin resin (excluding compounding or colouring ingredients), by product, year-to-date

| Product | SCG [1] Code | Year-to-date August 2005 | Year-to-date August 2006 | Change year-to-date 2006 over 2005 |
|---|---|---|---|---|
| | | metric tonnes | | % |
| **Synthetic resins** | | | | |
| Polyethylene, low and linear low density | 3901.10, 3901.90.10 | x | x | x |
| Polyethylene, high density | 3901.20 | x | x | x |
| **Polyethylene, total** | | 2,260,199 | 2,411,253 | 6.7 |
| Polystyrene and acrylonitrile-butadiene-styrene (abs) | 3903.1, 3903.30 | 136,321 | 130,893 | -4.0 |
| Polyvinyl chloride | 3904.10 | x | x | x |
| Polyesters, unsaturated | 3907.91 | 60,001 | 55,541 | -7.4 |

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1. SCG:Standard Classification of Goods.

**Table 4**
**Production of industrial chemicals, by product, year-to-date**

| Product | SCG [1] Code | Year-to-date August 2005 | Year-to-date August 2006 | Change year-to-date 2006 over 2005 |
|---|---|---|---|---|
| | | metric tonnes | | % |
| **Acids** | | | | |
| Hydrochloric (muriatic) acid, 100% | 2806.10.20 | 90,866 | 105,009 | 15.6 |
| Nitric acid, 100 % | 2808.00.10 | 803,618 | 795,383 | -1.0 |
| Phosphoric acid, wet process | 2809.20 | x | x | x |
| Sulphuric acid, all grades, including oleum, as 100% | 2807 | 2,457,131 | 2,549,487 | 3.8 |
| **Other industrial chemical products** | | | | |
| Aluminum sulphate (alum) | 2833.22 | 118,934 | 110,904 | -6.8 |
| Ammonia, anhydrous, 100% | 2814.10 | 3,188,595 | 3,072,059 | -3.7 |
| Ammonium nitrate, all grades | 3102.30 | 834,336 | 798,272 | -4.3 |
| Ammonium phosphate, all grades | 3105.30 | x | x | x |
| Butadiene | 2901.24.10 | 173,998 | 176,217 | 1.3 |
| Butylene | 2901.23 | 163,607 | 152,718 | -6.7 |
| Carbon black | 2803 | 156,220 | 150,881 | -3.4 |
| Chlorine | 2801.10 | 676,764 | 658,741 | -2.7 |
| Ethylene | 2901.21 | x | x | x |
| Formaldehyde, 100% solids basis | 2912.11 | x | 162,660 | x |
| Hydrogen peroxide, 100% | 2847.00 | 165,942 | x | x |
| Methyl alcohol (methanol) | 2905.11 | x | x | x |
| Propylene, as propylene in all grades | 2901.22 | 558,511 | 544,173 | -2.6 |
| Sodium chlorate | 2829.11 | 779,912 | 747,853 | -4.1 |
| Sodium hydroxide (caustic soda), as 100% NaOH | 2815.1 | 753,912 | 717,784 | -4.8 |
| Urea, all grades | 3102.10 | 2,378,368 | 2,404,696 | 1.1 |
| Benzene | 2902.20 | 590,458 | 516,504 | -12.5 |
| Toluene | 2902.30 | 140,909 | 178,464 | 26.7 |
| Xylene | 2902.4 | 206,869 | x | x |
| Zinc oxide | 2817.00.1 | x | x | x |

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1. SCG:Standard Classification of Goods.

## Concepts, methodology and data quality

This publication presents the results of the survey, Industrial Chemicals and Synthetic Resins. This survey measures, on a monthly basis, the quantities of selected industrial chemicals and new virgin resins produced by Canadian manufacturers. The target population for this survey includes all manufacturers in Canada of industrial chemicals and synthetic resins as defined in the Standard Classification of Goods (SCG), that report these products to the . The businesses included in these 4 surveys are selected from respondents to the AnAnnual Survey of Manufactures and Logging or ASML (Survey ID 2103). This means that estimates from this monthly survey do not cover the entire universe of industrial chemicals and synthetic resins producers in Canada, because the ASML does not survey all businesses. Instead, the ASML uses administrative data to cover the small and medium-sized establishments. These manufacturers are not part of this survey.

### General methodology

Data are collected each month from survey respondents using a mail-out / mail-back process. Data capture and preliminary editing are performed simultaneously to ensure validity of the data. Businesses from whom no response has been received or whose data may contain errors are followed-up by telephone or fax.

Missing data for the current month are imputed automatically by applying to the previous month's value, the month-to-month change observed for the same period in the previous year, for the unit in question. However, an option exists for analysts to manually override this imputation with a better estimate based on pertinent knowledge about the industry or the business.

Various confidentiality rules are applied to all data before they are released to prevent the publication or disclosure of any information deemed confidential. If necessary, data are suppressed to prevent direct or residual disclosure of identifiable data.

Direct disclosure could occur when the value in a tabulation cell is composed of a few respondents or when the cell is dominated by a few companies. Residual disclosure could occur when confidential information can be derived indirectly by piecing together information from different sources or data series.

Under normal circumstances, data are collected, captured, edited, tabulated and published within 6 to 7 weeks after the reference month.

### Revisions

Data may be revised to include amended information or reports from respondents that are received after the end of a collection cycle. Revisions are disseminated in subsequent periods and reflected in the CANSIM series and in the tables of this publication.

### Data accuracy

The methodology for this survey has been designed to promote data accuracy. Since data are collected from all Canadian producers of industrial chemicals and synthetic resins within the target population, the resulting estimates are not subject to sampling error. However, the results are still subject to non-sampling errors associated with coverage, non-response, inaccurate reporting, and processing. Errors relating to coverage and non-response can be measured. All attempts are made to control inaccurate reporting and processing errors.

Moreover, survey results are analyzed to ensure comparability with patterns observed in the historical data series and the economic condition of the industry. Information available from other sources such as the media, other government organizations and industry association are also used in the validation process.

### Coverage error

There is a degree of under coverage (referred to as coverage error) in the survey results as there is generally a lag between the time a new business comes into existence and when it is included in the universe of this sub-annual survey. This occurs because the list of businesses surveyed is derived from the latest available survey results for the ASML which are not available until 15 months after the reference period.

This error is kept at a minimum by also using advance information from the ASML, and other sources such as the Canadian Chemicals Producers' Association, trade journals and newspaper articles to identify new survey units.

Based on the ASML 2004 (latest available survey results), the coverage error for the Industrial Chemicals and Synthetic Resins survey was 3%.

### Non-response error

Some respondents may be unable to provide data for numerous reasons (i.e. fire, theft, strike, economic hardship, etc.), while others may be too late in responding. To minimize non-response, delinquent respondents are followed up rigorously by phone or fax. Data for the non-responding units are imputed using industry trend and other related information. Data are revised at a later date, if completed questionnaires are received after the end of a collection cycle.

The average non-response error for the Industrial Chemicals and Synthetic Resins survey was estimated at less than 1% for 2005 (the last completed cycle).

### Inaccurate response

Inaccuracy may result from poor questionnaire design or an inability on the part of respondents to provide the requested information or from misinterpretation of the survey questions. To reduce such errors, the format and wording in the questionnaire are reviewed from time to time and modified based on feedback from survey respondents and data users. Respondents are also reminded of the importance of their contribution and of the need for accurate reporting.

### Processing errors

These errors may occur at various stages in the processing of survey data such as data entry, verification, editing and tabulation. Data are examined for such errors using automated edits along with an analytical review by subject matter experts. Several checks are performed on the collected data to verify internal consistency and comparability over time.

## Definitions

**Production:** production refers to the quantity of products manufactured in Canada during a reference period including intermediate products. The final products may be shipped or retained in inventory.

More detailed data are available from the Annual Survey of Manufactures and Logging, CANSIM Table 301-0003. Specific enquiries should be directed to: The marketing and dissemination section, manufacturing, construction and energy division, Statistics Canada, Ottawa, Ontario, K1A OT6 (Telephone: 1-866-873-8789 or 613-951-9497; Fax line: 613-951-9499; Internet: *manufact@statcan.ca*).

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**Note of appreciation**

Canada owes the success of its statistical system to a long standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.