



## Service bulletin

# Industrial Chemicals and Synthetic Resins

December 2007



### Highlights

- The total production of polyethylene decreased 2.3% to 320,324 metric tonnes, between November and December 2007.
- In December 2007, ethylene production rose 8.5% to 446,783 metric tonnes.
- Monthly anhydrous ammonia production climbed 7.5% to 413,158 metric tonnes.
- Production of urea increased 5.6% to 340,052 metric tonnes in December 2007. Compared with the December 2006, production edged up 0.4%.
- In December 2007, the production of sulphuric acid rose 8.8% to 373,278 metric tonnes but compared with the same month last year, production climbed 12.1%.

### Statistical tables

Table 1

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

Product	SCG <sup>1</sup> Code	December 2006	November 2007	December 2007	Change	
					December 2007 to November 2007	December 2007 to December 2006
		metric tonnes			percent	
<b>Synthetic resins</b>						
Polyethylene, low and linear low density	3901.10, 3901.90.10	x <sup>r</sup>	173,807	174,717	0.5	x
Polyethylene, high density	3901.20	x <sup>r</sup>	153,981	145,607	-5.4	x
<b>Polyethylene, total</b>		296,264 <sup>r</sup>	327,788	320,324	-2.3	8.1
Polystyrene and acrylonitrile-butadiene-styrene (abs)	3903.1, 3903.30	10,635	7,941	4,686	-41.0	-55.9
Polyvinyl chloride	3904.10	x	x	x	x	x
Polyesters, unsaturated	3907.91	5,435	4,702	3,961	-15.8	-27.1

1. SCG: Standard Classification of Goods.

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

Product	SCG <sup>1</sup> Code	December 2006	November 2007	December 2007	Change December 2007 to November 2007	Change December 2007 to December 2006
<b>Acids</b>						
Hydrochloric (muriatic) acid, 100%	2806.10.20	13,406	11,796	12,239	3.8	-8.7
Nitric acid, 100 %	2808.00.10	102,590	78,735	84,206	6.9	-17.9
Phosphoric acid, wet process	2809.20	x	x	x	x	x
Sulphuric acid, all grades, including oleum, as 100%	2807	332,848	343,070	373,278	8.8	12.1
<b>Other Industrial Chemical Products</b>						
Aluminum sulphate (alum)	2833.22	13,095	16,604	17,108	3.0	30.6
Ammonia, anhydrous, 100%	2814.10	404,339	384,461	413,158	7.5	2.2
Ammonium nitrate, all grades	3102.30	99,398	100,959	106,005	5.0	6.6
Ammonium phosphate, all grades	3105.30	x	x	x	x	x
Butadiene	2901.24.10	21,098	17,609	15,629	-11.2	-25.9
Butylene	2901.23	16,260	18,054	16,958	-6.1	4.3
Carbon black	2803	19,530	18,768	18,673	-0.5	-4.4
Chlorine	2801.10	60,733	49,333	50,771	2.9	-16.4
Ethylene	2901.21	x	411,737	446,783	8.5	x
Formaldehyde, 100% solids basis	2912.11	16,718	17,723	13,782	-22.2	-17.6
Hydrogen peroxide, 100%	2847.00	19,306	14,728	21,099	43.3	9.3
Methyl alcohol (methanol)	2905.11	x	x	x	x	x
Propylene, as propylene in all grades	2901.22	75,770	74,929	73,460	-2.0	-3.0
Sodium chlorate	2829.11	91,023	90,197	92,834	2.9	2.0
Sodium hydroxide (caustic soda), as 100% NaOH	2815.1	67,458	55,587	57,133	2.8	-15.3
Urea, all grades	3102.10	338,650	322,149	340,052	5.6	0.4
Benzene	2902.20	65,851	69,855	70,015	0.2	6.3
Toluene	2902.30	26,240	21,183	16,805	-20.7	-36.0
Xylene	2902.4	32,888	26,500	28,453	7.4	-13.5
Zinc oxide	2817.00.1	x	x	x	x	x

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 <sup>1</sup> Code	Year-to-date December 2006	Year-to-date December 2007	Change year-to-date 2007 over 2006
<b>Synthetic resins</b>				
Polyethylene, low and linear low density	3901.10, 3901.90.10	x	x	x
Polyethylene, high density	3901.20	x	x	x
<b>Polyethylene, total</b>		3,594,075	3,736,469	4.0
Polystyrene and acrylonitrile-butadiene-styrene (abs)	3903.1, 3903.30	195,131	83,484	-57.2
Polyvinyl chloride	3904.10	x	x	x
Polyesters, unsaturated	3907.91	80,842	61,967	-23.3

1. SCG: Standard Classification of Goods.

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

Product	SCG <sup>1</sup> Code	Year-to-date December 2006	Year-to-date December 2007	Change year-to-date 2007 over 2006
		metric tonnes		percent
<b>Acids</b>				
Hydrochloric (muriatic) acid, 100%	2806.10.20	155,103	138,438	-10.7
Nitric acid, 100 %	2808.00.10	1,180,042	1,131,764	-4.1
Phosphoric acid, wet process	2809.20	x	x	x
Sulphuric acid, all grades, including oleum, as 100%	2807	3,822,560	3,832,716	0.3
<b>Other industrial chemical products</b>				
Aluminum sulphate (alum)	2833.22	163,859	198,860	21.4
Ammonia, anhydrous, 100%	2814.10	4,622,949	4,410,734	-4.6
Ammonium nitrate, all grades	3102.30	1,181,268	1,187,515	0.5
Ammonium phosphate, all grades	3105.30	x	x	x
Butadiene	2901.24.10	261,524	233,958	-10.5
Butylene	2901.23	212,276	248,477	17.1
Carbon black	2803	225,258	x	x
Chlorine	2801.10	928,842	600,659	-35.3
Ethylene	2901.21	x	5,055,405	x
Formaldehyde, 100% solids basis	2912.11	236,214	195,440	-17.3
Hydrogen peroxide, 100%	2847.00	x	235,931	x
Methyl alcohol (methanol)	2905.11	x	x	x
Propylene, as propylene in all grades	2901.22	832,667	916,977	10.1
Sodium chlorate	2829.11	1,110,756	1,072,525	-3.4
Sodium hydroxide (caustic soda), as 100% NaOH	2815.1	1,012,264	676,154	-33.2
Urea, all grades	3102.10	x	3,574,009	x
Benzene	2902.20	743,371	793,816	6.8
Toluene	2902.30	252,689	210,650	-16.6
Xylene	2902.4	x	x	x
Zinc oxide	2817.00.1	x	x	x

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 manufacturers in Canada of selected industrial chemicals and synthetic resins as defined in the Standard Classification of Goods (SCG), that report these products to the Annual 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 0T6 (Telephone: 1-866-873-8789 or 613-951-9497; Fax line: 613-951-9499; Internet: [manufact@statcan.ca](mailto:manufact@statcan.ca)).

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### Symbols

The following standard symbols are used in Statistics Canada publications:

.	not available for any reference period
..	not available for a specific reference period
...	not applicable
0	true zero or a value rounded to zero
0 <sup>s</sup>	value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
P	preliminary
r	revised
x	suppressed to meet the confidentiality requirements of the <i>Statistics Act</i>
E	use with caution
F	too unreliable to be published

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