

area must be economically significant and publishable. It is anticipated that each country will publish additional categories that comprise sub-divisions of NAICS industries, to present data for activities that are significant nationally.

Other constraints did involve the nature of the industries to be classified. In the case of chemicals, it was essential for NAICS to include Petrochemicals Manufacturing as an industry, due to the significance of this activity in Mexico. This is a major change for the United States and Canada. It involves some extra work for these countries in implementing the classification, since the direct assignment of industry codes from commodity output information (a common technique for most manufacturing industries) cannot be used without modification. Nevertheless, the importance of the activity, and the fact that it is based on a well-defined production process, resulted in its inclusion in NAICS.

A General Outline

The Petroleum and Coal Products Manufacturing subsector is based on the transformation of crude petroleum and coal into usable products. The dominant process is petroleum refining, which involves the separation of crude petroleum into component products through such techniques as cracking and distillation.

The Chemicals Manufacturing subsector is based on the transformation of organic and inorganic raw materials by a chemical process, and the formulation of products. This subsector distinguishes the production of basic chemicals, which comprises the first industry group, from the production of intermediate and end products produced by further processing of basic chemicals, which make up the remaining industry groups.

Concerning Basic Chemicals Manufacturing industries, data users will note that a general distinction has not been made between organic and inorganic basic chemicals. The production of organic and inorganic industrial gases is a single activity. In Mexico, the production of organic and inorganic dyes and pigments commonly takes place in the same establishments.

The industry subsector Rubber and Plastics Products Manufacturing includes establishments that make goods by processing raw rubber and plastics materials. To the extent possible, this subsector is restricted to industrial activities whose core technology is the production of products made of just one material, rubber or plastic. Many manufacturing activities use rubber or plastic as one of

several inputs, to the extent that the core technology relates to the type of product produced. An example of this is the manufacture of footwear. Typically, more than one material is used to produce shoes, so technologies that allow disparate materials to be formed and combined are of central importance in describing the footwear manufacturing activity. Such activities, for example footwear and furniture manufacture, are generally classified elsewhere than in the industry subsectors organized around the core technologies of rubber and plastic.

The main exception to this principle is Tires and Tubes Manufacturing. The production of tires is included in Rubber Products Manufacturing to minimize the disruption of time series and for comparability with ISIC, rather than because it particularly fits the general production process of the major group subsector. Tires are normally made from several materials.

A distinction is made between rubber and plastics products at the industry group level. It is not a rigid distinction, as can be seen from the definition of Rubber and Plastics Hose and Belting Manufacturing. As materials technology improves, plastics are increasingly being used as a substitute for rubber. Eventually, the distinction may disappear as a basis for defining establishments, and be limited to the commodity classification.

The Plastics Products Manufacturing industry subsector consists generally of activities involving the processing of plastics materials in forms such as pellets into intermediate or final products, using such processes as extrusion and injection moulding. Within most of these industries, the production process is such that a wide variety of products can be produced.

Some Changes to the National Classifications

This section highlights some of the significant changes to existing national classifications.

In Petroleum and Coal Products Manufacturing, the main change to an existing classification is the inclusion of activities currently in CSIC¹ 2721, Asphalt Roofing Industry, in NAICS Asphalt Paving and Roofing and Saturated Materials Manufacturing. It is included here because the defining feature of the production process (the

saturation of paper with asphalt) is the manipulation of asphalt.

The production of alumina from bauxite is currently classified in USIC 2819, Industrial Inorganic Chemicals, NEC. The production of alumina does involve the use of a chemical process, but it is analogous to the chemical activities involved in the processing of other ores in smelting and refining industries. It will therefore be treated as an activity in the primary metals, rather than in NAICS Other Inorganic Chemicals Manufacturing.

The production of artificial and synthetic fibers is treated as a textile activity in CSIC. While the outputs are a basic raw material for textile production, the fiber production itself is an activity with chemical characteristics. It is basically a polymerization process, similar to the production of synthetic resins. It is therefore included in the NAICS Chemicals Manufacturing subsector (Artificial and Synthetic Fibers and Filament Manufacturing).

The manufacture of photographic chemicals and sensitized paper is classified in CSIC 3912, Other Instruments and Related Products Industry and in USIC 3861, Photographic Equipment and Supplies. NAICS classifies the production of these goods in Miscellaneous Chemical Products Manufacturing, since their production process is a chemical products process, not an equipment manufacturing process.

The new classification eliminates the 2-digit distinction between rubber products and plastics products that was found in CSIC (groups 15 and 16). NAICS combines CSIC group 15, rubber products, and group 16, plastics products, into one subsector, Rubber and Plastics Products Manufacturing.

NAICS Tires and Tubes Manufacturing includes an activity—the retreading and recapping of tires—which in CSIC and USIC is classified as non-manufacturing. The tire retreading and recapping activity is included in manufacturing because it involves more than just a repair. This activity is an example of “re-building”, which occurs when a manufactured article is returned to usability using processes similar to those used in the original manufacturing operation. Re-building activities will be included in manufacturing in NAICS.

NAICS Rubber and Plastics Products Manufacturing excludes the manufacture of footwear, furniture and toys of rubber and plastic. This is a significant change to CMAP, which includes these activities in CMAP 3550, Rubber Industry and 3560, Manufacture of Plastics Products.

¹ CSIC refers to the Standard Industrial Classification of Canada, 1980 Revision. USIC refers to the Standard Industrial Classification of the United States, 1987 Revision. CMAP refers to the Classification of Activities and Products of Mexico.