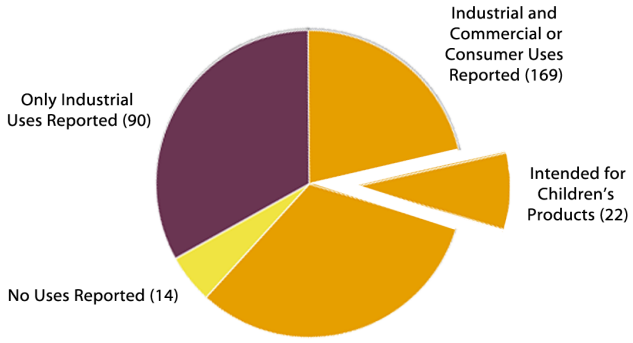
Comparing TRI and Chemical Data Reporting

In addition to toxic chemical release and management data collected through the TRI Program, EPA collects information about the manufacture (including import) and use of chemicals in U.S. commerce through the Chemical Data Reporting (CDR) rule under the authority of the Toxic Substances Control Act (TSCA). Combining the chemical information reported to both TRI and CDR provides a more complete picture of a chemical's lifecycle from sources of import and domestic manufacture to means of final deposition in the environment or products.

For calendar year 2011 activities (the most recent common reporting year), 7,674 individual chemicals were reported to CDR and 514 individual chemicals and chemical categories were reported to TRI. Of the chemicals reported to TRI, 273 (53%) matched one or more CDR chemicals while the remaining 241 were not reported to CDR. Most of these 241 chemicals are not regulated by TSCA (such as pesticides, pharmaceuticals and polymers), and thus are not required to be reported to CDR. In some cases CDR data, including chemical identity, are withheld as confidential business information and, therefore, this analysis may underestimate the actual overlap between the two programs.

CDR complements TRI information, tracking the quantity of chemicals domestically manufactured and imported, and the known uses of chemicals in industrial processing and in consumer and commercial products. CDR reporters indicate if the product is "intended for use by children," which means the reported chemical or mixture is used in or on a product that is specifically intended for use by children age 14 or younger. Figure 37 shows how reported TRI chemicals correlate with CDR reported uses. Nearly all chemicals (259) had industrial uses and 169 also had commercial or consumer uses.* Of the chemicals with commercial or consumer uses reported, 22 were in products intended for use by children.

Figure 37. Uses of CDR Matched TRI Chemicals and Chemical Categories



Example: TRI and CDR Data for Ethylbenzene

Ethylbenzene (CAS #100-41-4) is used as an example of how TRI and CDR data for 2011 may be combined for a more complete picture of the chemical's lifecycle. Ethylbenzene is reportable under both programs and used in consumer and commercial products intended for use by children. Exposure to ethylbenzene is associated with health effects including irritation of eyes, skin and respiratory track while chronic exposure may be associated with renal cancer or other cancers, as well as damage to hearing or the inner ear.

Ethylbenzene is a natural constituent of crude oil and is present in many petrochemical products and fuels; however, most industrial grade ethylbenzene is produced by the

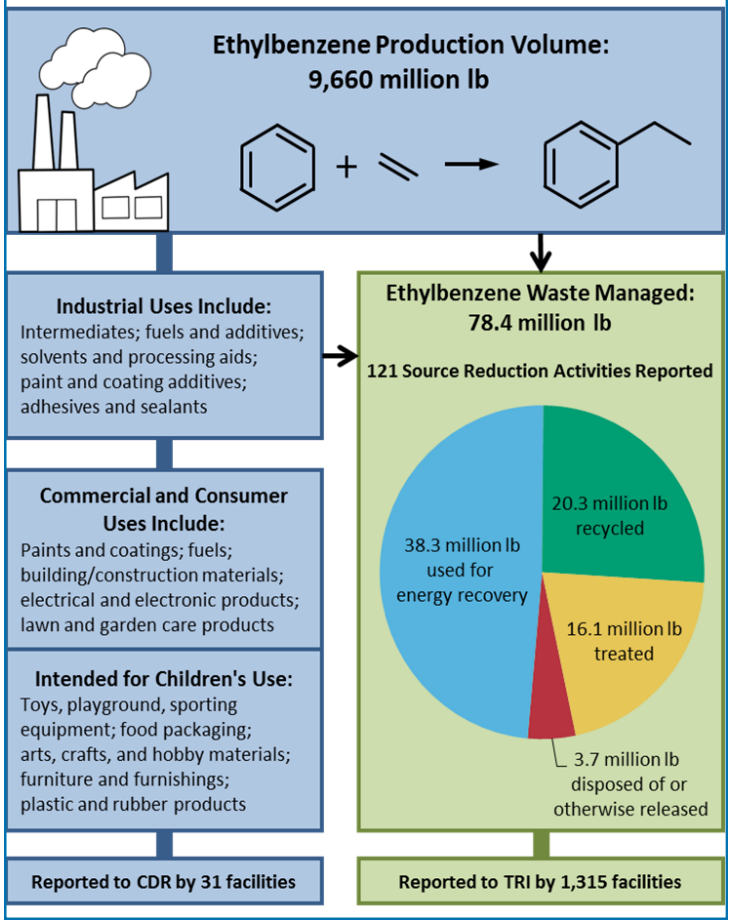
* Industrial uses are reported for chemicals meeting the more than 100,000 lb CDR manufacturing threshold. Therefore, if a chemical is manufactured in small amounts it would not be reported.

reaction of benzene and ethylene. In 2011, 31 facilities reported to CDR a total production volume of 9.66 billion pounds of ethylbenzene manufactured (which includes quantities imported). For activities during the same timeframe, 1,315 facilities filed a TRI form for ethylbenzene.

Figure 38 combines 2011 CDR and TRI data for ethylbenzene to show its production, uses and waste management. The 31 CDR filers reported downstream industrial uses and consumer and commercial uses, including five products intended for children's use. The CDR filers also indicated the industrial sectors that use ethylbenzene, including:

- Paint and Coating Manufacturing
- Basic Organic Chemical Manufacturing
- Plastics Material and Resin Manufacturing
- Petroleum Refineries
- Petrochemical Manufacturing

Figure 38. Ethylbenzene Production, Uses, and Waste Management



Many of the 1,315 TRI facilities reporting ethylbenzene were also in these sectors.

The TRI facilities reported managing 78.4 million pounds of ethylbenzene as waste, which represents less than 1% of the total production volume reported to CDR, indicating that the chemical was largely consumed in a process or is in a product, rather than ending up as a waste. This is further supported by the CDR data that show the two top industrial functions for this chemical are intermediates and solvents. Almost half of the ethylbenzene waste was used for energy recovery, and 5% (3.7 million pounds) was disposed of or otherwise released primarily as air emissions or through underground injection.

TRI reporters also provide information on source reduction activities implemented to generate less waste. Of the 1,315 TRI facilities reporting for ethylbenzene, 121 (9%) reported a source reduction activity; among the most common are:

- Improved maintenance scheduling, recordkeeping, or procedures;
- Changed production schedule to minimize equipment and feedstock changeovers; and
- Substituted raw materials.

One facility with large reductions in ethylbenzene air emissions from 2010 to 2011 reported installing a thermal oxidizer to destroy emissions from their coating line.

For more information on the CDR program, see www.epa.gov/cdr/.