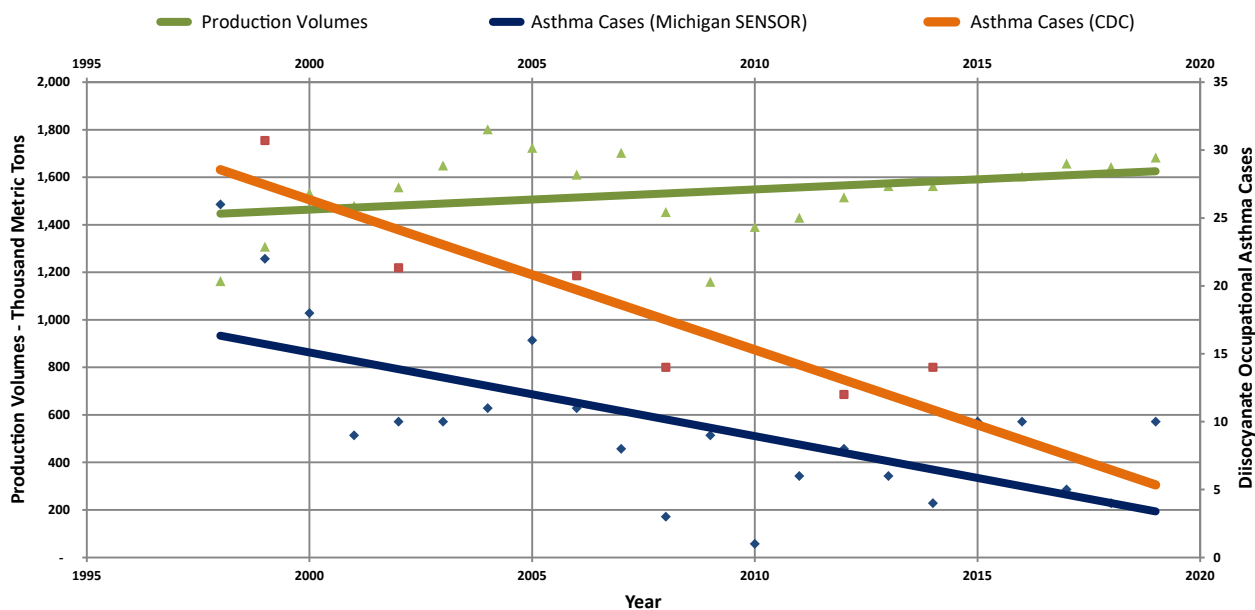




# DECREASE IN DIISOCYANATE-RELATED OCCUPATIONAL ASTHMA AIDED BY ENHANCED INDUSTRY STEWARDSHIP

DIISOCYANATES are a family of chemical building blocks used to make polyurethanes for furniture, appliances, apparel and more. Before they are mixed with other chemicals and transformed into finished goods, they are in a reactive state and have a potential to contribute to workplace asthma. However, diisocyanate manufacturers, in partnership with downstream users, have implemented a variety of product stewardship activities that have contributed to a reduction in diisocyanate-related asthma cases, even as production rates have increased.

## TRENDS IN DIISOCYANATES PRODUCTION VOLUMES VS. DIISOCYANATE OCCUPATIONAL ASTHMA CASES, 1998-2019



Above is a graph showing the combined production volumes for TDI, MDI, HDI, H12 MDI, IPDI, TMXDI, TMDI and PI. Data are in thousand metric tons. Production estimates include data from IHS Markit and ICIS. The CDC Work-Related Lung Disease Surveillance System (eWorld) and the Michigan State University Sentinel Event Notification System for Occupational Asthma Risks (SENSOR) were used for the diisocyanate occupational asthma cases.

## PRODUCT STEWARDSHIP ACTIVITIES THAT HAVE CONTRIBUTED TO LOWERED OCCUPATIONAL ASTHMA RATES



### EDUCATION

Employee education and training programs



### WORK PRACTICES

Enhanced personal protective equipment and/or engineering controls



### INNOVATION

Technology shift from monomers to polymers



### MEDICAL SURVEILLANCE

Pre-placement and periodic evaluations