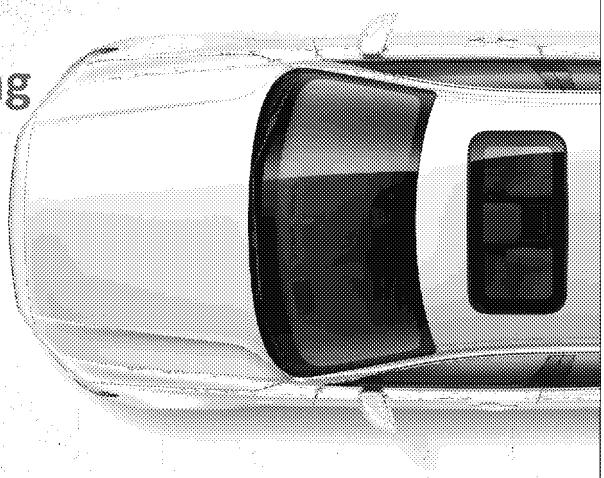
EPA/Auto Industry Meeting re: Substance Regulation

June 15, 2017



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Meeting Goals

- Initiate a regular two-way dialog with EPA on substance issues
- Highlight challenges unique to the auto industry regarding substance regulations
- Discuss key sections of TSCA of particular interest to Automakers
- Ensure that EPA engages the auto sector as key stakeholders in its implementation of LCSA
- Offer the input and assistance of the auto sector as EPA moves forward on TSCA regulations
- Identify issues of concern for future discussions and how we can help

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Who We Are
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DRIVING INNOVATION
SM
BMW Group
FCA
Ford
GM
JAGUAR
LAND ROVER
Mercedes-Benz
MITSUBISHI MOTORS
PORSCHE
TOYOTA
VOLKSWAGEN
AutoAlliance.org
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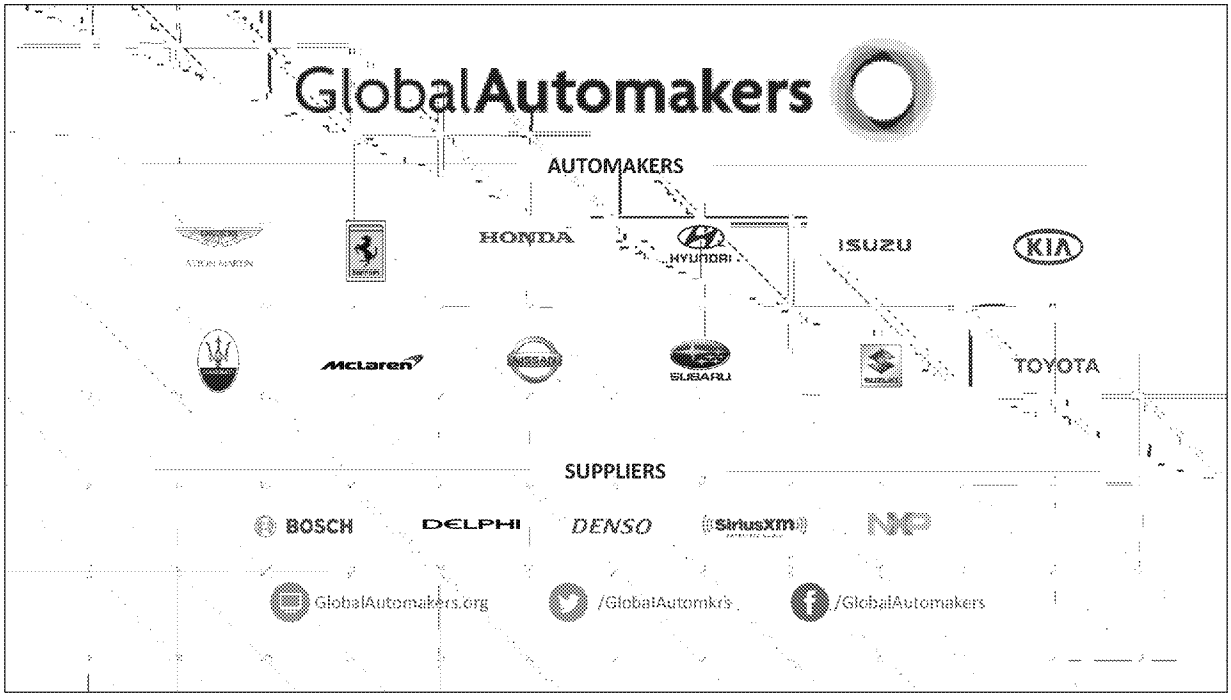
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AUTOMAKERS
HONDA
HYUNDAI
ISUZU
KIA
SUBARU
TOYOTA
SUPPLIERS
BOSCH
DELPHI
DENSO
SiriusXM
NXP
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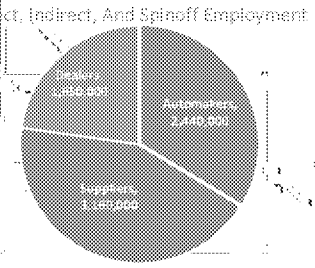
The Auto Alliance and Global Automakers together make up nearly every company selling new vehicles in the United States

- 7.25 Million Total Auto Jobs in the U.S.
- $500 Billion Total Compensation Annually
- $552 Billion New Vehicle Sales
- $205 Billion Annual Tax Revenues



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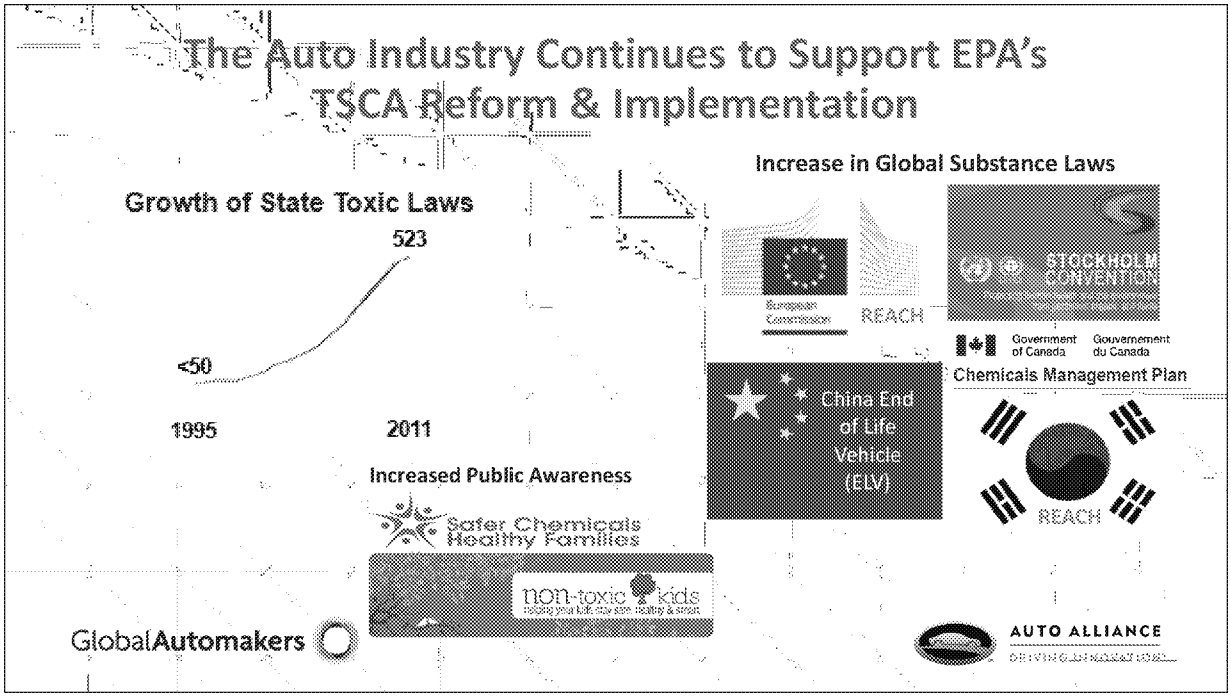
The Auto Industry Continues to Support EPA's TSCA Reform & Implementation
Growth of State Toxic Laws
523
<50
1995
2011
Increase in Global Substance Laws
REACH
STOCKHOLM CONVENTION
Government of Canada
Gouvernement du Canada
Chemicals Management Plan
China End of Life Vehicle (ELV)
REACH
Increased Public Awareness
Safer Chemicals Healthy Families
non-toxic kids
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Auto Alliance & Global Automakers are Active Stakeholders

One or both associations have submitted the following comments on TSCA regulations:

- Risk Evaluation Procedural Rule under TSCA section 6(b)(4) Rule
- Risk-Based Prioritization Procedural Rule under TSCA section 6(b)(1) Rule
- Scope of Risk Evaluations for Ten Chemicals
- TSCA Inventory Notification Requirements
- Auto Alliance Comments/Global Automakers on Procedures for Prioritization of Chemicals for Risk Evaluation
- Procedures for Chemical Risk Evaluation
- Trichloroethylene: Regulation of Use in Vapor Degreasing Under TSCA §6(a) and Regulation of Certain Uses Under TSCA §6(a)
- Methylene Chloride and N-Methylpyrrolidone; Regulation of Certain Uses Under TSCA §6(a)
- Nanoscale Materials; TSCA Reporting and Recordkeeping Requirements
- Various Individual SNURs

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Auto Industry Challenges Around Substance Regulation

- Rapid changes in technology that may demand new materials
- Durable complex goods
- Long product development lead time
- Long product use phase
- Competing regulations and customer requirements
- Global footprint with a large complex supply chain
- High capital investment

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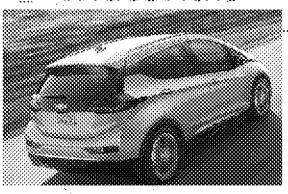
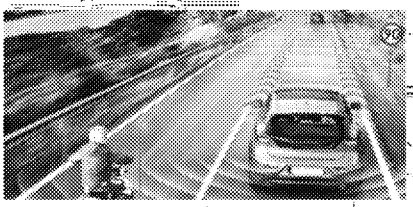
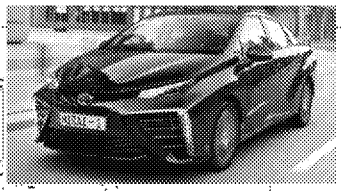
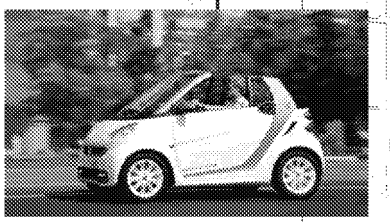
Rapid Changes in Technology that May Demand New Materials







- Autonomous Vehicles
- Electrified Vehicles
- Lightweighting
- ICE Fuel Economy Improvements
- Hydrogen Fuel Cell Vehicles



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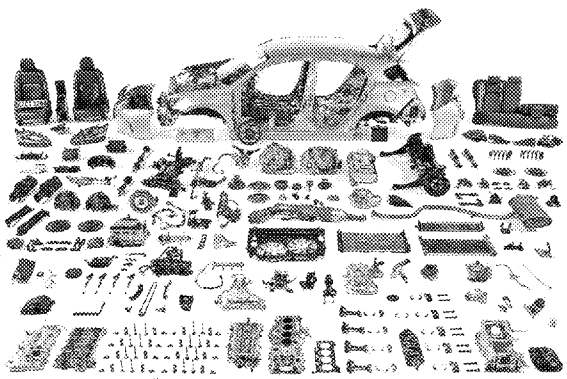
Automobiles are "Complex Durable Goods"

- Vehicle Complexity
  - Automakers have thousands of components in each vehicle (est. 30,000 at lowest component level)
  - Most components contain multiple materials
  - Automakers make many different models with many parts unique for that model
- Long Design Cycle
  - Engineering and validation begins up to five years prior to vehicles being placed on market
- Supply Chain Complexity
  - Automakers have a complex international supply chain
  - Automakers have thousands of suppliers
- Designed to last > 10 years
  - Must maintain supply of replacement parts (articles and mixtures)
- Design changes for SOC can affect many other regulated areas including safety, fuel economy, emissions, manufacturing, etc.



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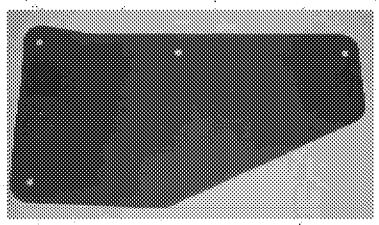
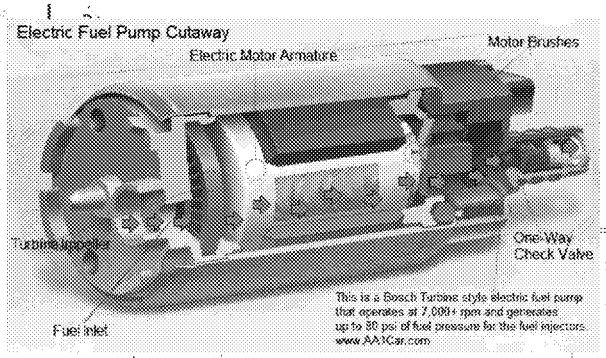
Component Complexity Varies

An electric motor (fuel pump shown to the right) is a component with multiple subcomponents consisting of multiple substances/materials

A splash shield can have no subcomponents and consist of a single material





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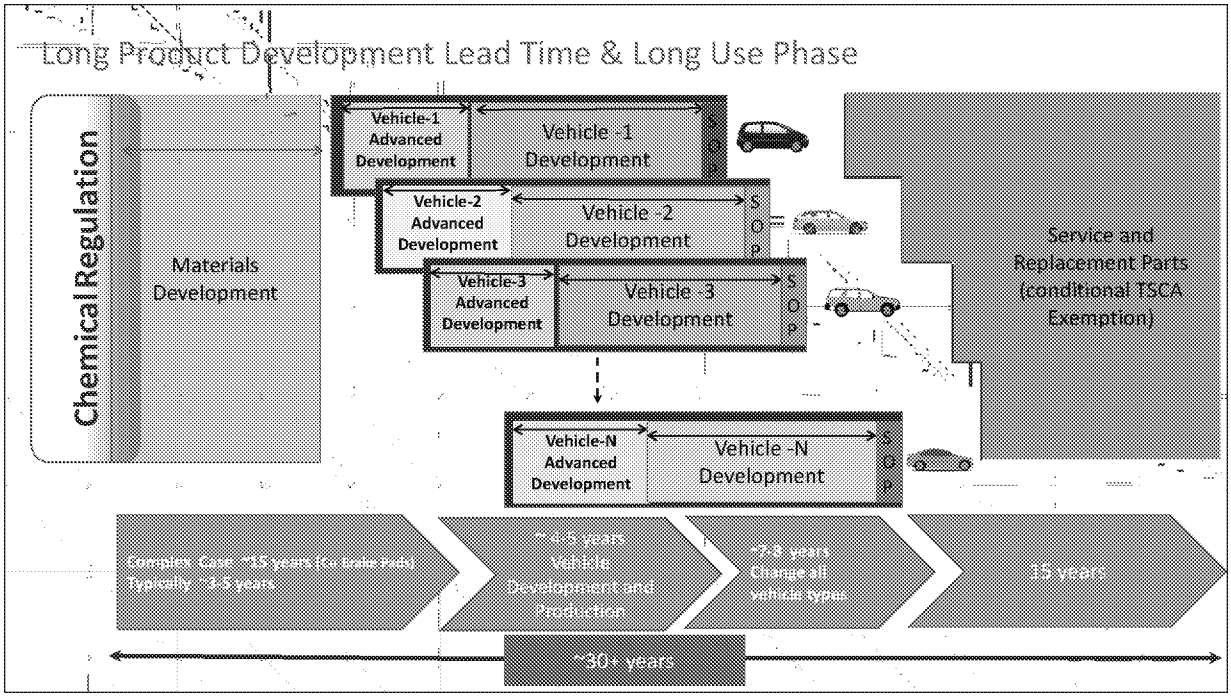
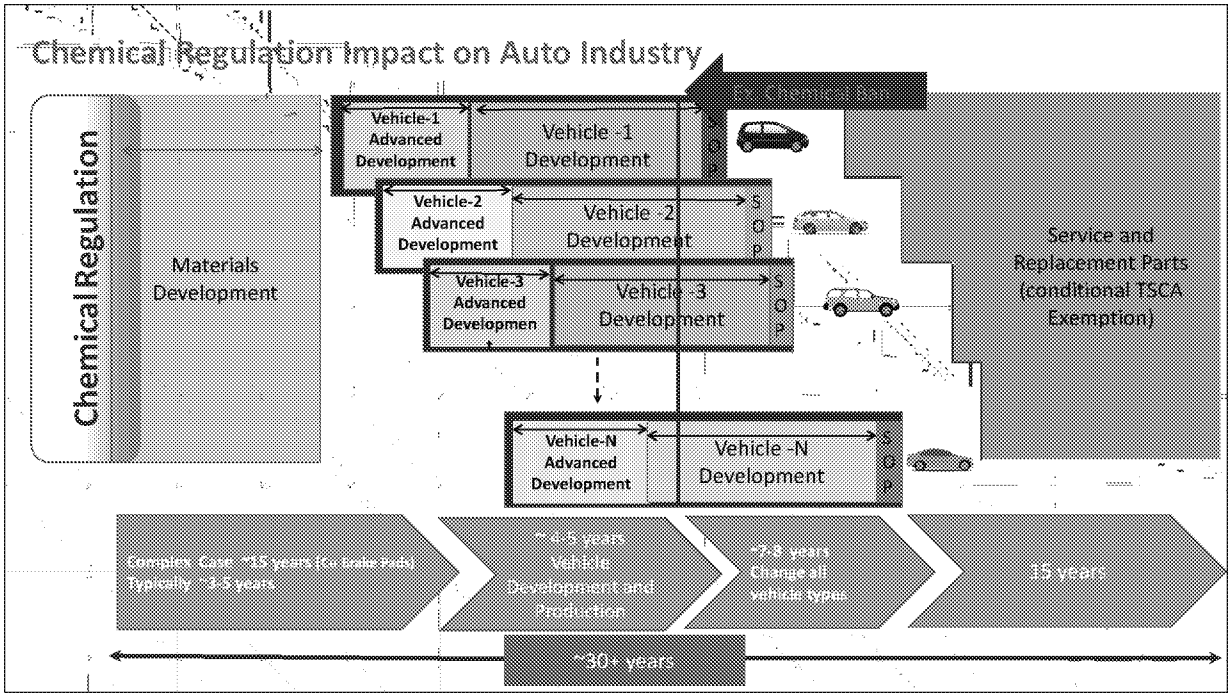

Long Product Development Lead Time & Long Use Phase
Chemical Regulation
Materials Development
Vehicle-1 Advanced Development
Vehicle -1 Development
SOP
Vehicle-2 Advanced Development
Vehicle -2 Development
SOP
Vehicle-3 Advanced Development
Vehicle -3 Development
SOP
Vehicle-N Advanced Development
Vehicle -N Development
SOP
Service and Replacement Parts (conditional TSCA Exemption)
Complex Case: ~15 years (to trade-off) Typically ~3-5 years
~4-5 years Vehicle Development and Production
~7-8 years Change all vehicle types
15 years
~30+ years


Chemical Regulation Impact on Auto Industry
Chemical Regulation
Materials Development
Vehicle-1 Advanced Development
Vehicle -1 Development
Vehicle-2 Advanced Development
Vehicle -2 Development
Vehicle-3 Advanced Developmen
Vehicle -3 Development
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Vehicle -N Development
SOP
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15 years
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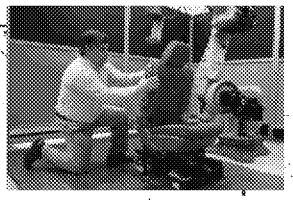
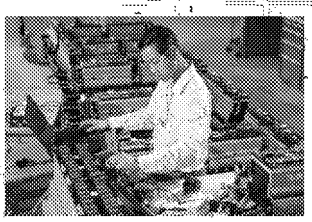
Competing Interests (Regulatory and Customer-driven) Validation: Avoiding Unintended Consequences

Thousands of Parts on a Vehicle

Any part change requires a host of tests and validations by OEMs and/or Supply Chain to ensure they meet the specification:

- Regulatory validation
- Safety testing (crash tests, flammability, etc.)
- Validation of functionality at part level, assembly level, vehicle level (performance, endurance, reliability, etc.)
  - Multiple internal and external performance standards (ASTM, NFPA, ANSI, ISO, SAE , etc.)
- Material validation (compatibility, environmental durability, tensile etc.)
- Manufacturing validation – will change affect processes and tooling in OEM or supplier plants?
  - Huge capital implications





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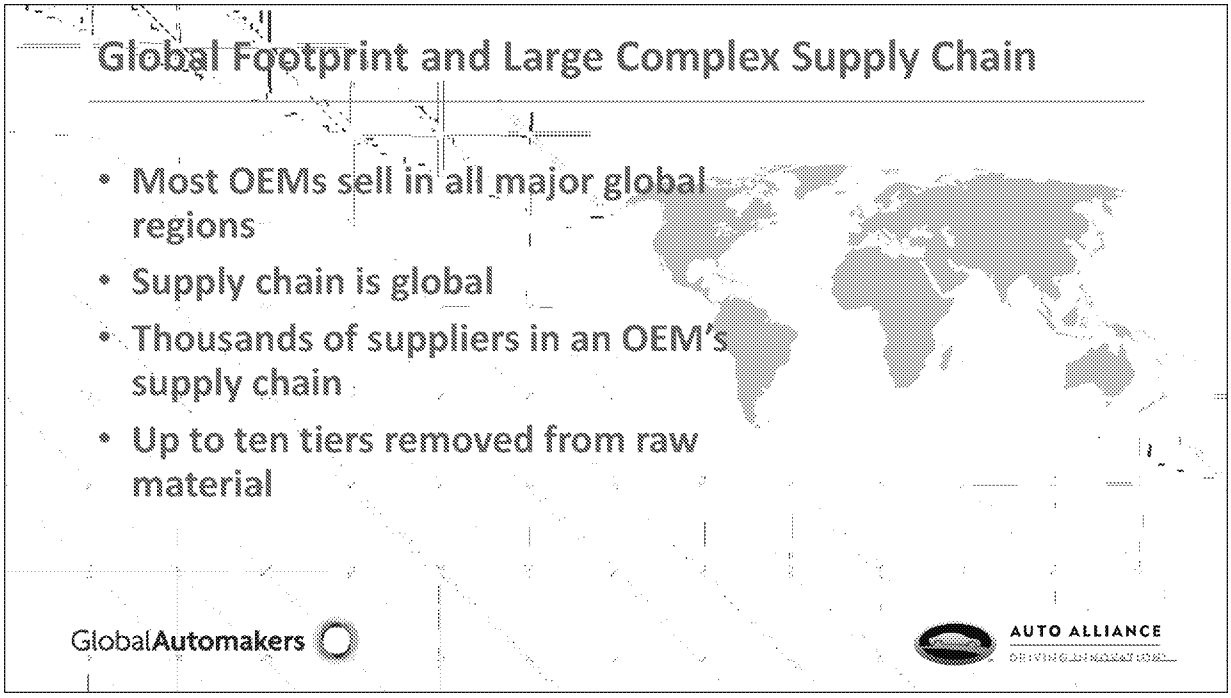
Global Footprint and Large Complex Supply Chain
• Most OEMs sell in all major global regions
• Supply chain is global
• Thousands of suppliers in an OEM's supply chain
• Up to ten tiers removed from raw material
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Auto Industry Collaboration on Substances

International Material Data System (IMDS) – *good but with limitations*

- Collaboration of almost all global OEMs
- Established almost 2 decades ago to manage EU ELV heavy metal restrictions
- Contains over **30 million** material data sheets for **45** OEMs globally
- More than **13,500** different chemical ingredients (Automotive Basic Substance List)
- Data entered by **157,000** suppliers (rolled up to Top Tier); **425,000** user ID's
- OEMs have dedicated departments managing IMDS submissions; Users see only own data
- Confidential ingredients may be hidden (10%)
- *De minimis* Issue: Reports to 0.1%
- Doesn't track nanomaterials

Global Automotive Declarable Substances List (GADSL)

- Non-profit collaboration of global OEMs, suppliers and chemical industry
- List of automotive substances that are agreed to for monitoring through formal process
- Chemicals listed on GADSL cannot be hidden as confidential

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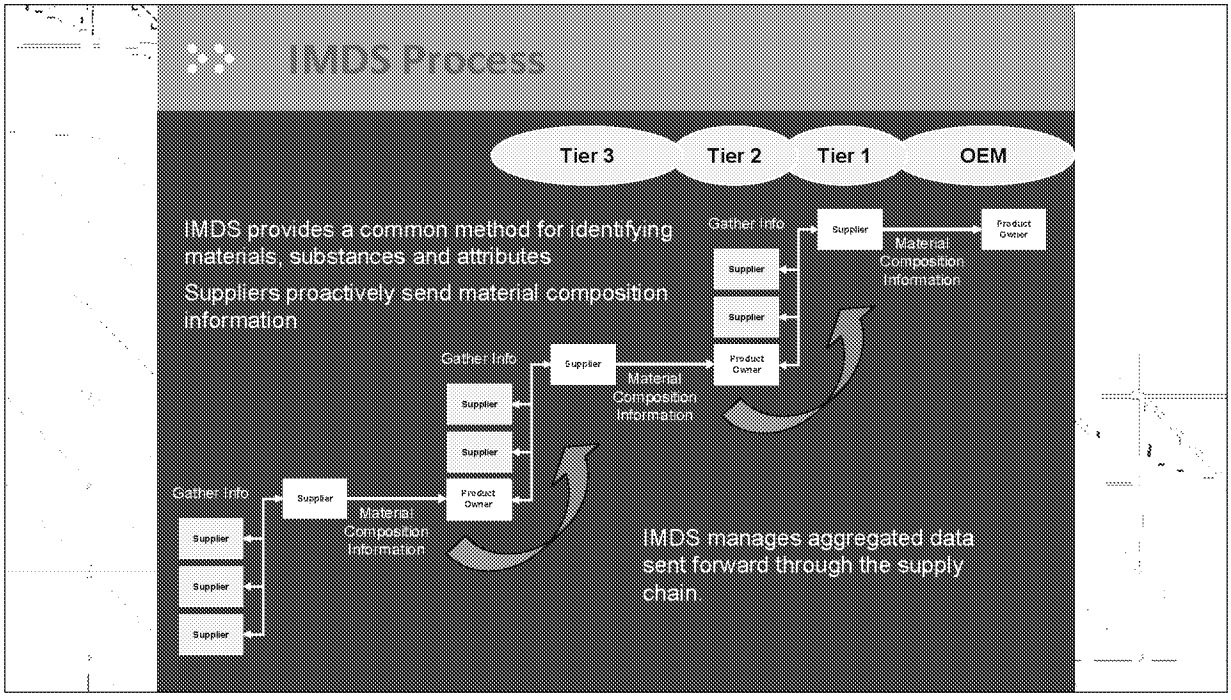
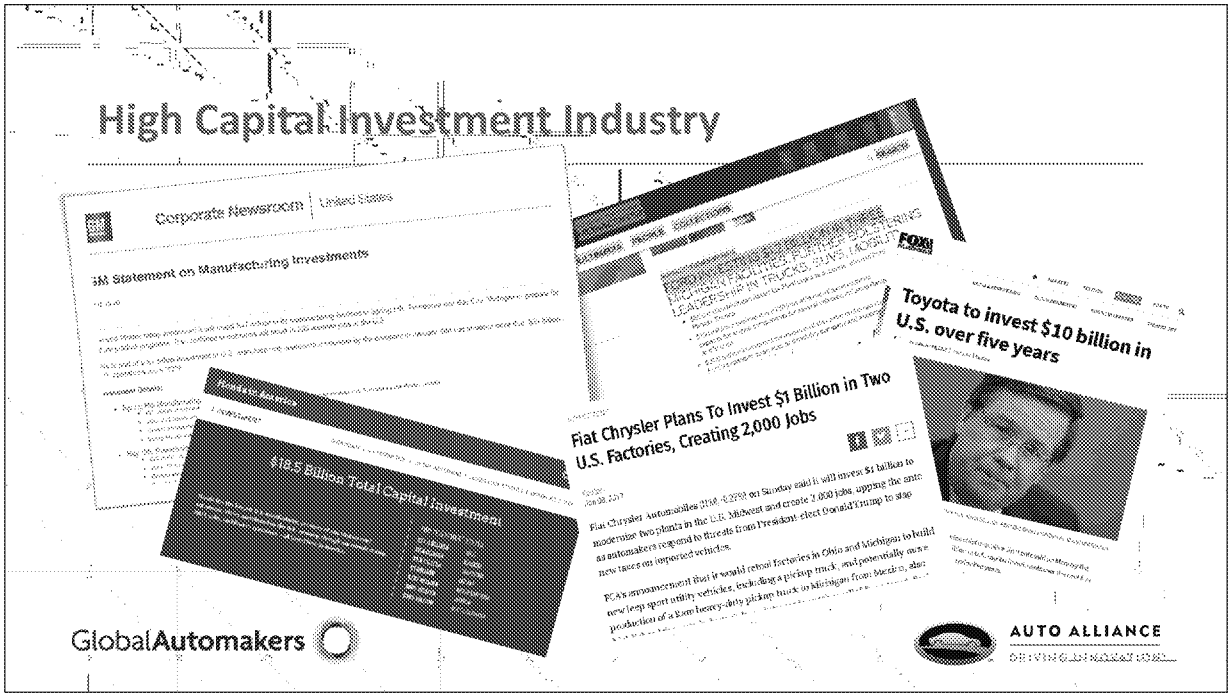

IMDS Process
Tier 3
Tier 2
Tier 1
OEM
IMDS provides a common method for identifying materials, substances and attributes
Suppliers proactively send material composition information
Gather Info
Supplier
Material Composition Information
Product Owner
IMDS manages aggregated data sent forward through the supply chain


High Capital Investment Industry
Corporate Newsroom | United States
3M Statement on Manufacturing Investments
$185 Billion Total Capital Investment
Fiat Chrysler Plans To Invest $1 Billion in Two U.S. Factories, Creating 2,000 Jobs
Toyota to invest $10 billion in U.S. over five years
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TSCA REFORM: Provisions important to Auto Industry

- Article Provisions in Sec. 5 & 6
- Replacement Part Exemption
- Pre-emption

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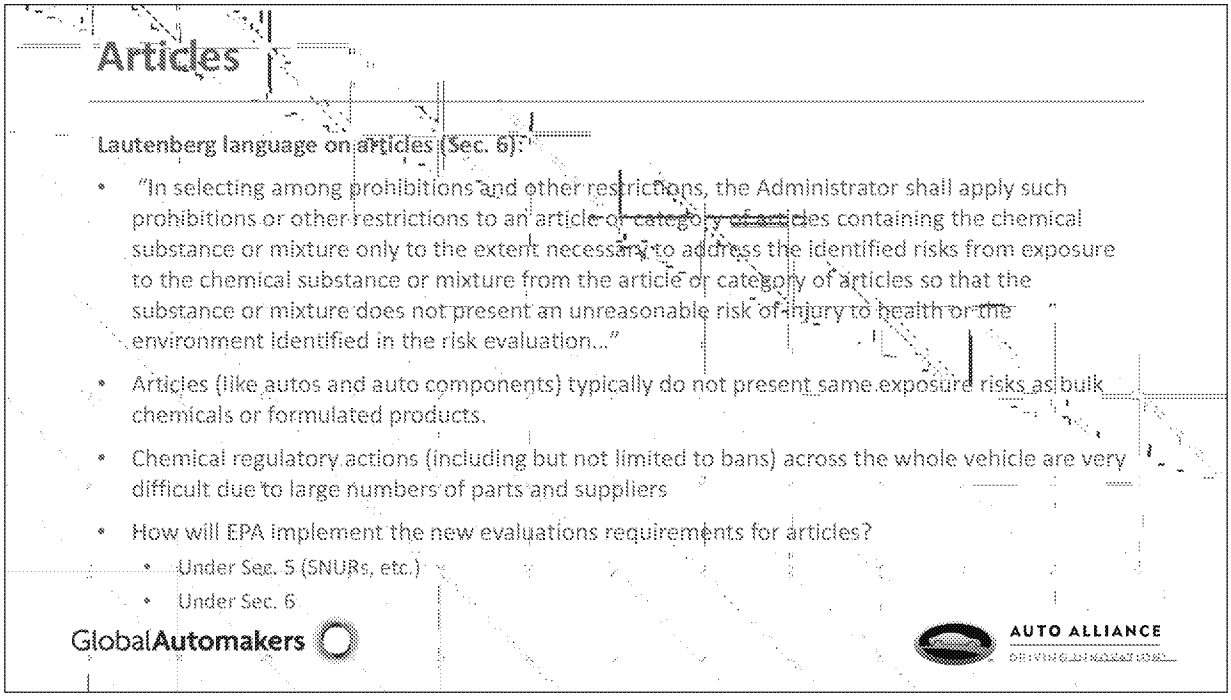
Articles
Lautenberg language on articles (Sec. 6):
"In selecting among prohibitions and other restrictions, the Administrator shall apply such prohibitions or other restrictions to an article or category of articles containing the chemical substance or mixture only to the extent necessary to address the identified risks from exposure to the chemical substance or mixture from the article or category of articles so that the substance or mixture does not present an unreasonable risk of injury to health or the environment identified in the risk evaluation…"
Articles (like autos and auto components) typically do not present same exposure risks as bulk chemicals or formulated products.
Chemical regulatory actions (including but not limited to bans) across the whole vehicle are very difficult due to large numbers of parts and suppliers
How will EPA implement the new evaluations requirements for articles?
Under Sec. 5 (SNURs, etc.)
Under Sec. 6
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Replacement/Service Parts

Replacement and Production Parts Markets and Production Processes Differ Significantly

- Motor vehicle parts (e.g. replacement, aftermarket, and service) are unique and differ from production parts due to high volume and long product lifetime
  - 250,000 - 1,000,000 motor vehicle parts sold by each OEM
  - Today's average vehicle age is >11 years; therefore, part lifetimes can easily span 15-20 years, much of that time predating substance-of-concern regulations (FAST Act requires manufacturers to recall products for up to 15 years, which will impact replacement parts availability, depending on model year and part specified in recall. 49 USCS § 30120(g)(1))
  - Generally small demand, typically 1% to 5% of the production volume of all vehicle parts, and declines over time
- Redesigning replacement parts not common as not all replacement parts continue production after end of vehicle production of a vehicle

Exemptions for Replacement Parts are Critical

- Replacement parts present a substantially lower exposure risk due to significantly limited numbers and distribution in the marketplace
- Will EPA implement measures to quantify risk contribution from exposure to chemicals in replacement parts compared to overall risk for that chemical per section 6(c)(2)(O)?

LSCA Sec. 6 Replacement Part Exemption:

The Administrator shall exempt replacement parts for complex durable goods and complex consumer goods that are designed prior to the date of publication in the Federal Register of the rule under subsection (a), unless the Administrator finds that such replacement parts contribute significantly to the risk, identified in a risk evaluation conducted under subsection (b)(4)(A), to the general population or to an identified potentially exposed or susceptible subpopulation.

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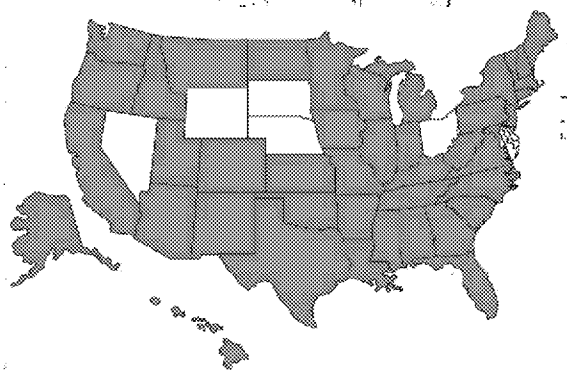
State/Local Pre-Emption



Current State Regulatory Efforts as of 6/7/2017

State regulation = De facto North American (and sometimes global) regulation

In 2016, at the state legislative level: "State efforts to regulate toxics and chemicals led to 554 bills being introduced in 43 states; 66 were enacted." (NCSL, "State Environmental Health Legislation 2016," 6/7/17)

At a broader level: "2016 was an active year for environmental health in the states. State Legislatures introduced 2744 bills related to environmental health, enacting 482 of them." (NCSL, "State Environmental Health Legislation 2016," 6/7/17)

Impracticable for automakers to design, manufacture and sell different vehicles for individual states

Will EPA play any role in ensuring states follow LSCA pre-emption provisions?

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Summary / Important Points

- The combination of a global footprint, high-capital investment, long product development lead time and long product use cycle drive our perspective on chemical content regulations
- Unlike other regulatory requirements that may be addressed within our own companies' design choices, chemical restrictions cascade throughout the supply chain, from basic materials industries up to assembly manufacturers
- Nature of auto industry requires notice of chemical regulation far in advance
- We prefer an orderly and transparent process that establishes not only federally uniform requirements but also an EPA position that leads our trading partners to common requirements

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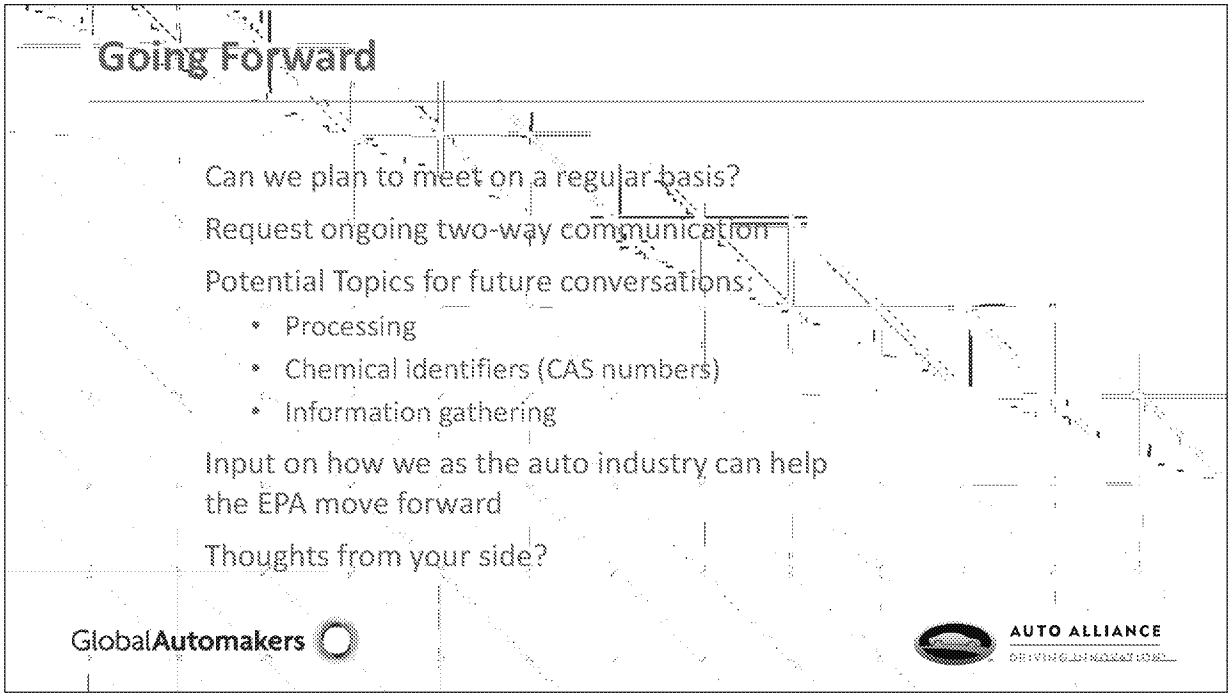
Going Forward
Can we plan to meet on a regular basis?
Request ongoing two-way communication
Potential Topics for future conversations:
• Processing
• Chemical identifiers (CAS numbers)
• Information gathering
Input on how we as the auto industry can help the EPA move forward
Thoughts from your side?
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