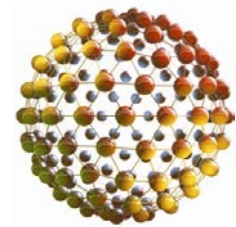




# European Union Registration, Evaluation, and Authorization of Chemicals (REACH)



## Potential Impacts to DoD

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# Summary



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1. REACH and the associated Classification, Labeling and Packaging (CLP) Requirements are highly complex and evolving European Union regulations which have yet to be fully enforced
  1. As of 2014, 67% of firms did not comply with REACH regulations\*
  
2. REACH and CLP have the potential to impact commercial transport of commercial products into and through Europe (although DoD has not seen any impacts yet)
  
3. Most probable first impacts include:
  - Improperly classified, labeled, or packaged commercial shipments within Europe could be delayed or impounded (in extreme cases, fines could be levied, though difficult to quantify. As a benchmark fines associated with general non compliance with REACH can be as high as 55M Euro)
  - Limited access to restricted or authorized chemicals impacts ability to maintain mission critical systems
  
4. DoD is managing potential impacts of REACH by:
  - Maintaining a safe work environment and protecting the environment
  - Developing contingency plans to address areas of potential enforcement
  - Establishing a legal position that interprets the extent to which REACH may be enforced

# What is REACH?



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- Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH)
  - European Union (EU) regulation (EC/1907/2006)
  - Came into force 1 June 2007
  - Phased in over time, completed by 2018
- Restricts and bans the import, manufacture, placing on the market, and use of certain chemical substances
- Shift in responsibility:



Pre-REACH: Public authorities must prove a chemical is *unsafe*.



Post-REACH: Industry must prove a chemical is *safe* before it may enter the market.

# How does REACH Work?



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- European Chemicals Agency (ECHA)
  - Independent agency established to implement and manage REACH
- **Registration:** “No data, no market”
  - Manufacturers or importers must obtain information about the physical properties and risks posed by their substance.
  - Registration dossiers must be submitted to ECHA prior to a substance’s placement on the market
- **Restriction:** Annex XVII
  - List of substances that have specific conditions in which they may not be used. Non listed uses are allowed.
- **Authorization:** Annex XIV
  - List of substances that may not be placed on the market unless specifically authorized by the European Commission (EC)

# Classification, Labeling and Packaging (CLP)



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- A complementary EU regulation affects commercial transport of military supplies and requires appropriate paperwork and labeling is associated with products that contain REACH regulated chemicals
- CLP introduces the United Nations Globally Harmonized System (UN GHS) for classification and labeling of chemicals into the EU
- Since June 1, 2015, products transported commercially in EU have been required to be properly classified, labeled, and packaged IAW CLP regulation
- Differences in the EU implementation of GHS could require the re-labeling or re-classification of some DoD shipments to avoid commercial transportation delays or impoundments
- DoD needs to make sure that Dangerous Goods Advisors have proper training and tools to support the origination of compliant commercial shipments

# Defense Exemptions from REACH



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- There is no blanket exemption for defense-related substances
- Individual European countries may grant exemptions for the *specific application of a specific substance* that is deemed *necessary in the interest of defense*
- Procedures for granting Defense exemptions are under control of individual EU member nations – it is not standardized
  - United Kingdom: 172 substances have been exempted
  - Greece: 63; Poland: 1
  - No exemptions have been granted in Germany, Italy, Belgium, France, Spain, Romania, Bulgaria, or Portugal
- The existence of Defense exemptions in a particular host country may reduce some REACH risks for DoD operations
  - Could facilitate commercial shipments of exempted substances; could support FMS and NATO interoperability
  - However, since REACH does not apply directly to US DoD the “transferability” of EU Defense exemption benefits is undetermined

# Legal Relevance of REACH to DOD



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- 2010 DoD REACH Strategic Plan signed by USD(AT&L) and approved by OGC
  - “As an EU regulation, REACH is not a compliance issue for the DoD”
  - “For purposes of REACH, DoD does not import equipment or supplies into the EU when it is providing such items in direct support to its forces stationed in the EU nor when transporting such items through the EU on military transportation”
- EUCOM SJA has developed a draft formal legal position on REACH application to DoD that is currently under review with OGC
- Even if REACH does not directly apply, would still have impacts
  - NATO SOFA Common Article II requires “respect” for host nation (HN) laws
  - CLP may impact US Forces using commercial transportation contractors
    - If originating a commercial shipment within Europe, DoD may need to make sure that its documentation and packaging meets EU classification, labeling, and packaging requirements
  - REACH requires employers to assess and communicate risks to employees
    - May require adjustments to HAZCOM plans for local national workplaces
  - Better knowledge of DoD HAZMAT inventories will be key
    - Can help reduce risk in all of these areas
    - Also a basic demonstration of and “respect” for EU law

# Commercial Transport of Commercial Products



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- CLP requirements and impacts of SDS documentation:
  - Companies do not include the REACH registration number (unique identifier) on the SDS.
  - Lack of transportation data in the SDS results in additional effort to identify needed information based on CLP requirements. (although it is not considered compliance issue in US Occupational Safety and Health Administration (OSHA)).
  - Personnel need more training on how to dissect and evaluate the CLP requirements to ensure compliance with all requirements.
  - Non compliance could lead to imposition of fines and impoundments. This varies by country.



# Potential Impact to Military Transport of Commercial Products



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- Military transport:
  - DoD believes it does not import into the EU when transporting through the EU on military transportation
  - Most EU port authorities view military supplies as just passing through the EU economic zone to a non-economic zone

# Characterizing REACH Impact on Weapon System Maintenance and Operations \*



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## Authorization List, Annex XIV

Potassium Zinc Chromate Hydroxide – Paint, Sealant  
 Chromium(VI) Trioxide - Sealant  
 Chromic Acid, Chromium(3+) Salt(3:2) – Corrosion Preventative, Sealant, Adhesive  
 Chromic(VI) Acid – Sealant, Adhesive, Paint, Corrosion Preventative  
 Sodium Chromate(VI) – Paint removal, metals treatment  
 Strontium Chromate – Sealant, bonding, primer paint, lubricant  
 Chromic Acid(H<sub>2</sub>CR<sub>2</sub>O<sub>7</sub>), Disodium Salt – Paint, Sealant  
 Sodium Dichromate – Windshield and Canopy Sealant

## List of Restricted Substances

Paraisonylphenol (Nonylphenol C<sub>6</sub>H<sub>4</sub>(OH)C<sub>9</sub>H<sub>19</sub>) – Sealant, Paint, Corrosion Prevention  
 Benzene – Sealant, Adhesive  
 Cadmium – Batteries  
 Methylene Chloride – Paint Stripping  
 4,4'-Methylenediphenyl diisocyanate – Sealant, prop repair  
 Toluene – Lubricant, Sealant, Adhesive, etc.  
 Cyclohexane – Sealant, Adhesive  
 Diethylene Glycol Monomethyl Ether – Fuel Additive, Welding/Brazing

## Candidate List

Orthoboric Acid – Welding, X-ray, Battery servicing  
 Ethylene Glycol Dimethyl Ether – Batteries  
 Dibasic Lead(II) Phosphate - Lubricant  
 Dimethylacetamide - Sealant  
 Borates, Tetra, Sodium Salts, Pentahydrate - Antifreeze  
 Lead Monoxide – Electrical Repair, Sealant  
 Phenol, Dimethyl-, Phosphate(3:1) – Lubricant, Engine Maintenance  
 Cobalt Chloride – Silica Gel, Prop Repair  
 Phenolphthalein – Fuel Cell Operations  
 N-Methyl-2-Pyrrolidone – Painting, Corrosion Prevention

■ Not found in applicable products or restriction does not apply to use

\*Items listed do not necessarily include REACH affected material for engines, ground support equipment, or maintenance facility

# Managing REACH Risks: Air Force Mobility Aircraft

C-130, KC-135, C-20, etc

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## Authorization List, Annex XIV

Strontium Chromate (2019 sunset) – 306 lbs, mostly primer  
Sodium Dichromate (2017 sunset) – 4 lbs, windshield sealant  
Sodium Chromate (2017 sunset) – 1 lb, paint stripper

## REACH Restricted List, Annex XVII

None of the current restrictions apply to Mobility Aircraft uses

## Candidate List

1-bromopropane (n-propyl bromide) - 16.5 lbs per year

N,N-dimethylacetamide - 3.3 lbs per year

Boric acid (Orthoboric acid) - 3.2 lbs per year

1-Methyl-2-pyrrolidone (NMP) - 3.1 lbs per year

Phenolphthalein - 1.3 lbs per year

Less than 1 pound per year: Sodium tetraborate pentahydrate, Cobalt dichloride, Lead monoxide (lead oxide), 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328), Disodium tetraborate, anhydrous, 2-Ethoxyethanol

## Inventory assessment is crucial to managing risk

- Plan A: Implement substitutes for authorized/restricted chemicals *where possible*
  - Implementing non-chromate primer
  - Evaluating commercially available non-chromate windshield sealant
  - Exploring non-chromate “Stripper 7”
- Plan B: If substitution is impossible, avoid commercial shipments and LN workplaces
- Actively monitor “candidate” chemicals for regulatory and market developments

# DoD Management of REACH and CLP Risks



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RISK	Management Actions	Lead Organization
<p>Products transported commercially in EU are not properly classified, labeled, and packaged IAW CLP regulation which could lead to fines or impoundments</p>	<p>Establishing reporting structure to OSD Transportation Policy to track incidents</p> <p>Revising DoDI 6050.05 to consider host nation laws, including REACH</p> <p>Wherever possible, avoid shipping REACH authorized/restricted substances via commercial shippers</p>	<p>OSD AT&amp;L Transportation Policy and EI&amp;E ESOH Directorate</p> <p>OSD AT&amp;L EI&amp;E ESOH Directorate</p> <p>EUCOM and Servies</p>
<p>Limited availability of critical chemicals resulting in negative effects on US military operations and maintenance in EU.</p>	<p>Collaborating with industry consortiums to understand their need for authorizations and if there are associated military exemptions needed</p> <p>Coordinating with DEFNET to develop mechanism exchange information about potential military exemptions</p> <p>Conducting inventory assessment to understand breadth of critical chemicals and materials that contain REACH regulated substances</p>	<p>OSD AT&amp;L EI&amp;E ESOH Directorate</p> <p>EUCOM and OSD AT&amp;L EI&amp;E ESOH Directorate</p> <p>EUCOM and DoD REACH WG Inventory Assessment Subgroup</p>

# DoD Management of REACH and CLP Risks



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<p>Meeting Local National (LN) Employee OSHA Requirements WRT REACH</p>	<p>Avoid using REACH authorized/restricted substances in LN workplaces</p> <p>Include relevant REACH information and risk assessments in LN workplace HAZCOM plans</p>	<p>EUCOM, Services</p> <p>OSD AT&amp;L EI&amp;E ESOH Directorate, EUCOM/Service OH professionals, work area supervisors</p>

***DoD REACH and CLP Management actions help to demonstrate “respect” IAW NATO SOFA Article II***

# DoD Management of REACH and CLP Risks



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RISK	Management Actions	Lead Organization
<p>Limited availability of critical chemicals resulting in negative effects on US military operations and maintenance in EU.</p>	<p>Conduct inventory assessments to understand breadth of critical materials that contain REACH regulated substances</p> <p>Establish channels of communication between EUCOM and Weapon System Program Offices to request substitutes and exchange info on substitution planning</p> <p>Influence S&amp;T priorities, if necessary, to investigate alternatives for DoD critical materials impacted by REACH</p> <p>Coordinate with DEFNET partners to ensure that ECHA has appropriate Defense data to incorporate into restriction/authorization decisionmaking and to assist with member-state Defense exemption processes</p> <p>Collaborate with industry consortiums to identify emerging risks and to support (if possible and if needed) authorizations and military exemptions for specific chemicals and uses</p>	<p>EUCOM and Services</p> <p>EUCOM and Services</p> <p>USD(AT&amp;L), Services</p> <p>OSD AT&amp;L EI&amp;E ESOH Directorate, EUCOM and Services</p> <p>EUCOM and OSD AT&amp;L EI&amp;E ESOH Directorate</p>

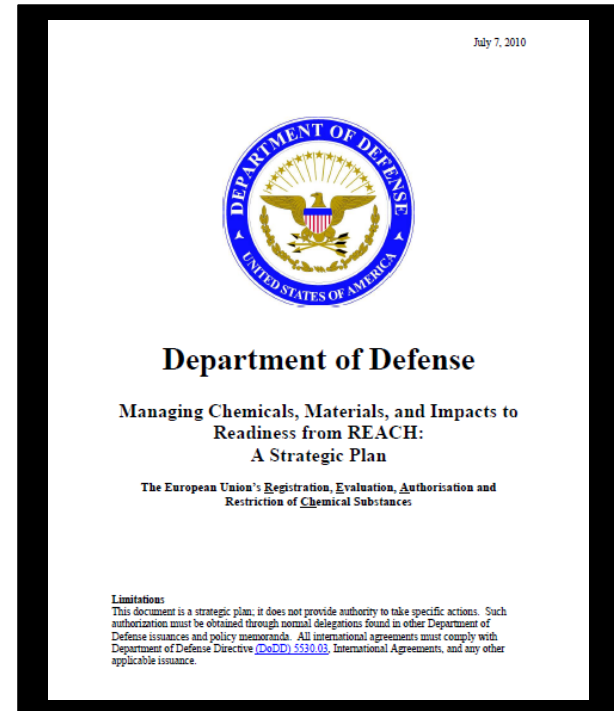
***DoD REACH and CLP Management actions help to demonstrate “respect” IAW NATO SOFA Article II***

# DoD REACH Strategic Plan



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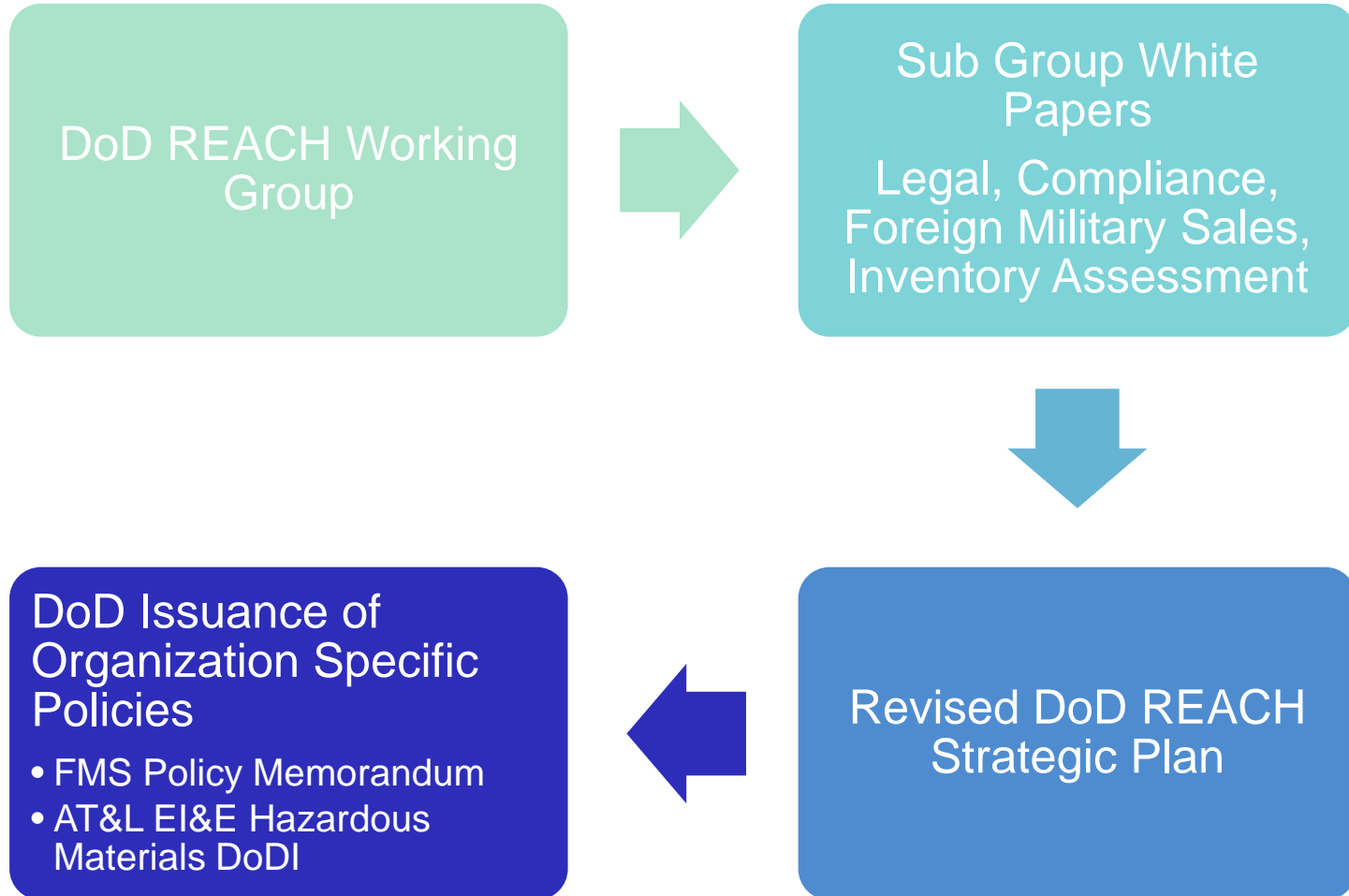
- Under Secretary of Defense (AT&L) issued a memorandum July 2010
  - Minimize potential negative impacts of REACH
  - Assign responsibilities to appropriate DoD offices
  - Unify, coordinate, and communicate activities across the DoD
  - Outline resources needed to achieve these actions.
- Nine goals and 40 objectives involving 15 DoD organizations
- Fifty percent of the objectives implemented



# Developing DoD REACH Policy and Guidance



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# Summary



1. REACH and the associated Classification, Labeling and Packaging (CLP) Requirements are highly complex, evolving, and have yet to be fully enforced
2. REACH and CLP have the potential to impact commercial transport of commercial products into and through Europe although DoD has not seen any impacts yet
3. Military transport of commercial or military items to military installations should not be impacted by REACH and CLP requirements
4. Member Commands on our DoD REACH work group have actions underway to mitigate adverse impacts to the DoD mission

# Backup Slides



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# ECHA Lists of Substances



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- **Restricted List** - Annex XVII includes 105 substances/groups of substances
  - Substances (on their own, in a mixture or in an article) which cannot be manufactured or placed on the market *for certain uses defined by ECHA*
- **Candidate List** - includes 161 substances
  - Candidate list of substances of very high concern (SVHC)
  - May have serious and irreversible effects on human health and the environment can be identified as SVHCs.
  - SVHCs are added to the Candidate List for inclusion in the Authorization List
  - Identification as an SVHC and inclusion in the Candidate List is first step of the authorization procedure
- **Authorization List** - Annex XIV includes 32 substances
  - Used only if authorized for that use (expensive, limited duration)
  - Cannot be manufactured or imported in the EU after the sunset date
  - This can result in a complete ban of some substances

# REACH Annex XIV Authorization List



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Substance Name	CAS Number	Sunset Date
5-tert-butyl-2,4,6-trinitro-m-xylene (Musk xylene)	81-15-2	08/21/2014
4,4'-Diaminodiphenylmethane (MDA)	101-77-9	08/21/2014
Benzyl butyl phthalate (BBP)	85-68-7	02/21/2015
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	02/21/2015
Dibutyl phthalate (DBP)	84-74-2	02/21/2015
Diisobutyl phthalate (DIBP)	84-69-5	02/21/2015
Diarsenic pentaoxide	1303-28-2	05/21/2015
Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2	05/21/2015
Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	12656-85-8	05/21/2015
Diarsenic trioxide	1327-53-3	05/21/2015
Lead chromate	7758-97-6	05/21/2015
Hexabromocyclododecane (HBCDD), alpha-hexabromocyclododecane, beta-hexabromocyclododecane, gamma-hexabromocyclododecane	3194-55-6, 25637-99-4, 134237-50-6, 134237-51-7, 134237-52-8	08/21/2015
2,4 - Dinitrotoluene (2,4-DNT)	121-14-2	08/21/2015
Tris(2-chloroethyl) phosphate (TCEP)	115-96-8	08/21/2015
Trichloroethylene	79-01-6	04/21/2016
Acids generated from chromium trioxide and their oligomers, including: Chromic acid, Dichromic acid, Oligomers of chromic acid and dichromic acid.	7738-94-5, 13530-68-2	09/21/2017
Ammonium dichromate	7789-09-05	09/21/2017
Chromium trioxide	1333-82-0	09/21/2017
Potassium chromate	7789-00-6	09/21/2017
Potassium dichromate	7778-50-9	09/21/2017
Sodium chromate	7775-11-03	09/21/2017
Sodium dichromate	7789-12-0, 10588-01-9	09/21/2017

# DoD and Potential Impacts of REACH



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<b>Expected Outcome of REACH</b>	<b>Potential Impact to DoD</b>
Limiting or eliminating some chemical availability	Negative effects on US military operations and maintenance in the EU and elsewhere
Decreased material availability and increased costs for certain chemicals or articles	Disruption to defense supply chains outside the EU due to the global nature of supply
Undisclosed substitution of chemicals in commercially available, off-the shelf (COTS) substances	Failure or marginal performance of weapon systems or components of weapon systems
Increased equipment costs passed on to foreign customers when substitute materials are available to satisfy individual country requirements	Increased equipment costs eventually passed on to DoD

# DoD and Potential Impacts of REACH



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<b>Expected Outcome of REACH</b>	<b>Potential Impact to DoD</b>
Different interpretations of REACH by each participating state	Disruption of US and NATO interoperability (e.g., Foreign Military Sales)
Accidental release of proprietary information through registration process or ECHA review	Accidental disclosure of classified or controlled unclassified information (e.g., International Traffic in Arms Regulation)
Accelerated need to test and evaluate substitute materials	Increased DoD research, development, testing, and evaluation (RDT&E)

# DoD REACH Working Group



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- Purpose: Identify and resolve issues through specific actions and development of DoD wide policy
- DoD wide representation including HQ DLA, TRANSCOM, HQ EUCOM, DPAP, DSPO, JS J4, MDA, MIBP, SERDP/ESTCP and totals over 160 participants
- Four thrust areas
  - Legal subgroup - establishing position on REACH
  - Compliance subgroup - developing strategy for compliance as appropriate based on legal position
  - Inventory Assessments subgroup - evaluating DoD inventories of REACH regulated chemicals (hazardous materials, products and systems)
  - Foreign Military Sales – developing DoD Policy to address potential impacts

# Implementation Timeline



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- Substances are “phased in” based on tonnage
- REACH registration requirements are not mandatory until the phase-in date occurs

