European Union (EU) Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

An Enterprise-wide Approach to Managing DoD Mission Impacts

October 24, 2016

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What is REACH?

- **Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)**
  - EU regulation (EC/1907/2006)
  - Came into force 1 June 2007
- Complex and evolving regulation that has yet to be fully implemented
- 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.

- REACH applies to (almost) all chemicals and chemical products, and even certain articles containing or made from chemicals that are manufactured in or imported into the EU
Significance of REACH To DoD

• REACH has the potential to impact availability or use of commercial products in Europe
• Most probable first impacts include:
  – Obsolescence or limited access to DoD mission-critical substances.
  – System performance and Environment, Safety & Occupational Health (ESOH) risks due to undisclosed substitutions by manufacturers.
  – Improperly classified, labeled, or packaged commercial shipments within Europe could be delayed or impounded.
2016 DoD REACH Strategic Plan

• Background
  – July 2010, Under Secretary of Defense for Acquisition, Technology and Logistics (USD[AT&L]) issued a memorandum known as the “DoD REACH Strategic Plan”
  – Chemical and Material Risk Management Program (CMRMP) 2014 assessment revealed varying degrees of implementation
  – U.S. European Command (EUCOM) raised concerns in 2014 regarding the potential mission impacts of REACH
  – REACH Working Group was re-established with membership from across the Services and Office of the Secretary of Defense (OSD) components
  – REACH Working Group concluded that an update of the REACH Strategic Plan was needed

• 2016 DoD REACH Strategic Plan
  – Finalization imminent
  – USD(AT&L) memorandum issued with Plan will direct responsible components to take action as designated in the Plan
Developing DoD REACH Policy and Guidance

DoD REACH Working Group

Sub-Group White Papers
Legal, Compliance, Foreign Military Sales, Inventory Assessment

DoD Issuance of Organization-Specific Policies
- FMS Policy Memorandum
- AT&L EI&E Hazardous Materials DoDI

Revised DoD REACH Strategic Plan
DoD REACH Strategic Plan Goals

Acquisition, Technology and Logistics

- **GOAL 1**: Assure Access and Use of Mission-Critical Substances
- **GOAL 2**: Ensure Performance of Substitute Substances
- **GOAL 3**: Forecast and Prepare for Disruptions
- **GOAL 4**: Minimize Impacts on the FMS Program
- **GOAL 5**: Communication
DoD Enterprise-wide Process to Identify, Assess, and Mitigate Risks

DoD REACH STRATEGIC PLAN

Objective 1.1
- Scanning Monthly
- Identify REACH substances of interest to DoD

Objective 1.2
- Asses and Mitigate Risks
- Identify mission critical products containing REACH regulated substances

Objective 1.3
- Risk Characterization
- Conduct Phase I and II Impact Assessments for mission critical substances

Objective 1.4
- Develop Risk Mitigation Strategies
- Develop policies and management actions

Objective 2.1
- Understanding Substitutes: Understanding where and how substitutes are used and ESOH risks

Objective 2.2
- Substitutes: Leverage Private-Sector & DoD RTD&E
- Develop and integrate substitutes

Objective 2.3
- Implementation by Components

Objective 3.1
- Survey Defense Industrial Base
- ID supplier based changes in cost/availability and potential reformulations/substitutes.

Objective 3.2
- Leverage EU MS Exemptions
- Track EU MOD REACH exemption procedures and status of requests

Objective 3.3
- Assess and Mitigate Risks
- Develop risk mitigation plans for critical substances and products

Objective 4.1
- Understand REACH Impacts to FMS
- Number of lost sales due to REACH requirements.

Objective 4.2
- Accommodate customer requests for REACH compliance data
- Frequency of customer requests and outcomes

Objective 4.3
- Accommodate customer requests for substance substitutions
- Frequency of customer requests and outcomes
DoD Organizations with REACH Strategic Plan Responsibilities

- OUSD Acquisition, Technology and Logistics
- OASD Energy, Installations, and Environment
- OASD Logistics & Materiel Readiness
- OASD Research & Engineering (R&E) Enterprise
- ODASD Manufacturing and Industrial Base Policy

Department of Defense
Secretary of Defense

Office of the Secretary of Defense
Deputy Secretary of Defense, Under Secretary of Defense, Assistant Secretaries of Defense, and other specified officials

Department of the Army
Secretary of the Army
Office of the Secretary of the Army
The Army Staff

Department of the Navy
Secretary of the Navy
Office of the Secretary of the Navy
Headquarters-Marine Corps

Department of the Air Force
Secretary of the Air Force
Office of the Secretary of the Air Force
The Air Staff

Joint Chiefs of Staff
Chairman of the Joint Chiefs of Staff
The Joint Staff

Defense Agencies (20)
- Defense Advanced Research Projects Agency
- Defense Commissary Agency
- Defense Contract Audit Agency
- Defense Contract Management Agency
- Defense Finance and Accounting Service
- Defense Health Agency
- Defense Information Systems Agency
- Defense Intelligence Agency
- Defense Legal Services Agency
- Defense Logistics Agency
- Defense Manpower and Personnel Accounting Agency
- Defense Security Cooperation Agency
- Defense Security Service
- Defense Threat Reduction Agency
- Joint Improvised-Threat Defeat Agency
- Missile Defense Agency
- National Geospatial-Intelligence Agency
- National Reconnaissance Office
- National Security Agency/Central Security Service
- Pentagon Force Protection Agency

DoD Field Activities (9)
- Defense Media Activity
- Defense Technical Information Center
- Defense Technology Security Administration
- DoD Education Activity
- DoD Human Resources Activity
- DoD Test Resource Management Center
- Office of Economic Adjustment
- Washington Headquarters Services

Combatant Commands (9)
- Africa Command
- Central Command
- European Command
- Northern Command
- Pacific Command
- Southern Command
- Special Operations Command
- Strategic Command
- Transportation Command
DoD Actions Supporting Each Goal

Maintain access to mission-critical materials
- Identify new chemicals under regulation
- Conduct annual risk assessment to ID mission-critical products or uses
- Develop and obtain DoD executive level endorsement of risk management actions
- Disseminate policies and supporting data through common business enterprise integration

Ensure performance and promote the use of substitutes
- Identify substitutes and status of use
- Manage the potential for system performance and ESOH impacts from use of substitute products

Prepare for supply chain disruptions when substitutes are not available
- Engage with defense industrial base to determine potential for obsolescence, increased costs, or decrements in performance
- Engage with European Ministries of Defense regarding potential for military exemptions
- Implement risk mitigation plans to address mission-critical substance/material risks

Reduce impacts to Foreign Military Sales (FMS)
- Identify impacts from REACH on FMS to include customers requests for REACH-compliant systems or REACH-compliant substance substitutions.
REACH Impact on Maintenance and Operations of Military Transport Systems

Candidate List
- Orthoboric Acid
- Ethylene Glycol Dimethyl Ether
- Dibasic Lead(II) Phosphate
- Dimethlacetamide
- Borates, Tetra, Sodium Salts, Pentahydrate
- Lead Monoxide
- Phenol, Dimethyl-, Phosphate(3:1)
- Cobalt Chloride
- Phenolphthalein
- N-Methyl-2-Pyrrolidone

Authorisation List, Annex XIV
- Potassium Zinc Chromate Hydroxide
- Chromium(VI) Trioxide
- Chromic Acid, Chromium(3+) Salt(3:2)
- Chromic(VI) Acid
- Sodium Chromate(VI)
- Strontium Chromate
- Chromic Acid H2CR207
- Sodium Dichromate

List of Restricted Substances
- Paraisononylphenol (Nonylphenol C₈H₄(OH)C₉H₁₉)
- Benzene
- Cadmium
- Methylene Chloride
- 4,4’-Methylene diisocyanate
- Toluene
- Cyclohexane
- Diethylene Glycol Monomethyl Ether

Specific Applications?
Annual Use Rate?
Conditions of Restrictions?
Does the restriction apply to industrial 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.

Authorisation 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)
N,N-dimethylacetamide
Boric acid (Orthoboric acid)
1-Methyl-2-pyrrolidone (NMP)
Phenolphthalein
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
Example: 1-Methyl-2-Pyrrolidone (NMP)

- REACH-proposed restriction for NMP would impact manufacturing, and all industrial and professional uses of the substance where workers’ exposure exceeds a level specified in the restriction. Status – pending decision.

- DoD uses of NMP
  - Substitute for methylene chloride
  - Heated immersion paint stripping of mission-critical parts prior to non-destructive inspection (e.g., aircraft landing gear)
  - Solvent in hexavalent chromium-free aircraft conversion coatings
  - Minor—but critical—constituents in bonding primers, sealants, and adhesives
Example: Identify, Assess, and Mitigate Risks

1. Assure Access and Use of NMP
   - Obj. 1.1: DASD (ESOH) CMRMP
     - NMP identified as REACH substance of interest to DoD
   - Obj. 1.2: DoD Component (Action Office), DCMA
     - Identify mission critical products containing NMP
   - Obj. 1.3: DoD Component (Action Office)
     - Conduct Phase I and II Impact Assessment
   - Obj. 1.4: DoD Component (Action Office)
     - Develop risk management actions and policy

2. Ensure Performance of NMP Substitutes
   - Obj. 2.1: DoD Component (Action Office), DLA
     - Identify and understand where & how NMP substitutes are used
   - Obj. 2.2: ASD(R&E), SERDP/ESTCP, DoD Component (Action Office)
     - Develop and integrate NMP substitutes

3. Forecast and Prepare for Disruptions
   - Obj. 3.1: DLA, DASD(MIBP), ASD(EI&E) ESOH
     - Identify changes in cost, availability, & reformulation of NMP-based products
   - Obj. 3.2: USEUCOM
     - Identify and track status of EU MOD exemption requests
   - Obj. 3.3: DASD(MIBP)
     - Develop risk mitigation plans for critical uses of NMP-based products

4. Minimize Impacts on the FMS Program
   - Obj. 4.1: DSCA
     - Identify impacts from REACH NMP restriction on the FMS Program
   - Obj. 4.2: DSCA
     - Anticipate/respond to customer requests for REACH compliance data
   - Obj. 4.3: DSCA
     - Anticipate/respond to customer requests for NMP substitutes

Implementation by Components
Next Steps

- Formal coordination complete with full concurrence
- Staff memorandum and Strategic Plan for review and signature by USD(AT&L) Mr. Frank Kendall
- Request review and sign-off of staffing package by ASD(EI&E)
- Final issuance will trigger implementation kick-off meeting with REACH Steering Committee
- CMRMP will conduct annual reviews to evaluate implementation, determine effectiveness of objectives, and update/revise the plan accordingly
Backup Slides
Implementation Timeline

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

- REACH comes into force
  - > 1,000 tons/year
  - > 100 tons/year
  - > 1 ton/year

- Phase-in Dates:
  - 1 June 2007
  - 1 December 2010
  - 1 June 2013
  - 1 June 2018
### REACH Annex XIV Authorisation List

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<thead>
<tr>
<th>Substance Name</th>
<th>CAS Number</th>
<th>Sunset Date</th>
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<tbody>
<tr>
<td>5-tert-butyl-2,4,6-trinitro-m-xylene (Musk xylene)</td>
<td>81-15-2</td>
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<tr>
<td>4,4’-Diaminodiphenylmethane (MDA)</td>
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<td>Benzyl butyl phthalate (BBP)</td>
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<td>Bis(2-ethylhexyl) phthalate (DEHP)</td>
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<td>02/21/2015</td>
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<td>Dibutyl phthalate (DBP)</td>
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<td>Diisobutyl phthalate (DIBP)</td>
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<td>Diarsenic pentaoxide</td>
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<td>Lead sulfochromate yellow (C.I. Pigment Yellow 34)</td>
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<td>Lead chromate molybdate sulphate red (C.I. Pigment Red 104)</td>
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<td>Diarsenic trioxide</td>
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<td>134237-52-8</td>
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<td>2,4-Dinitrotoluene (2,4-DNT)</td>
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<td>Tris(2-chloroethyl) phosphate (TCEP)</td>
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<td>Trichloroethylene</td>
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<td>Acids generated from chromium trioxide and their oligomers, including: Chromic</td>
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<td>acid, Dichromic acid, Oligomers of chromic acid and dichromic acid.</td>
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<td>Ammonium dichromate</td>
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