



REACH Impact on Aerospace Materials – U.S. Perspective



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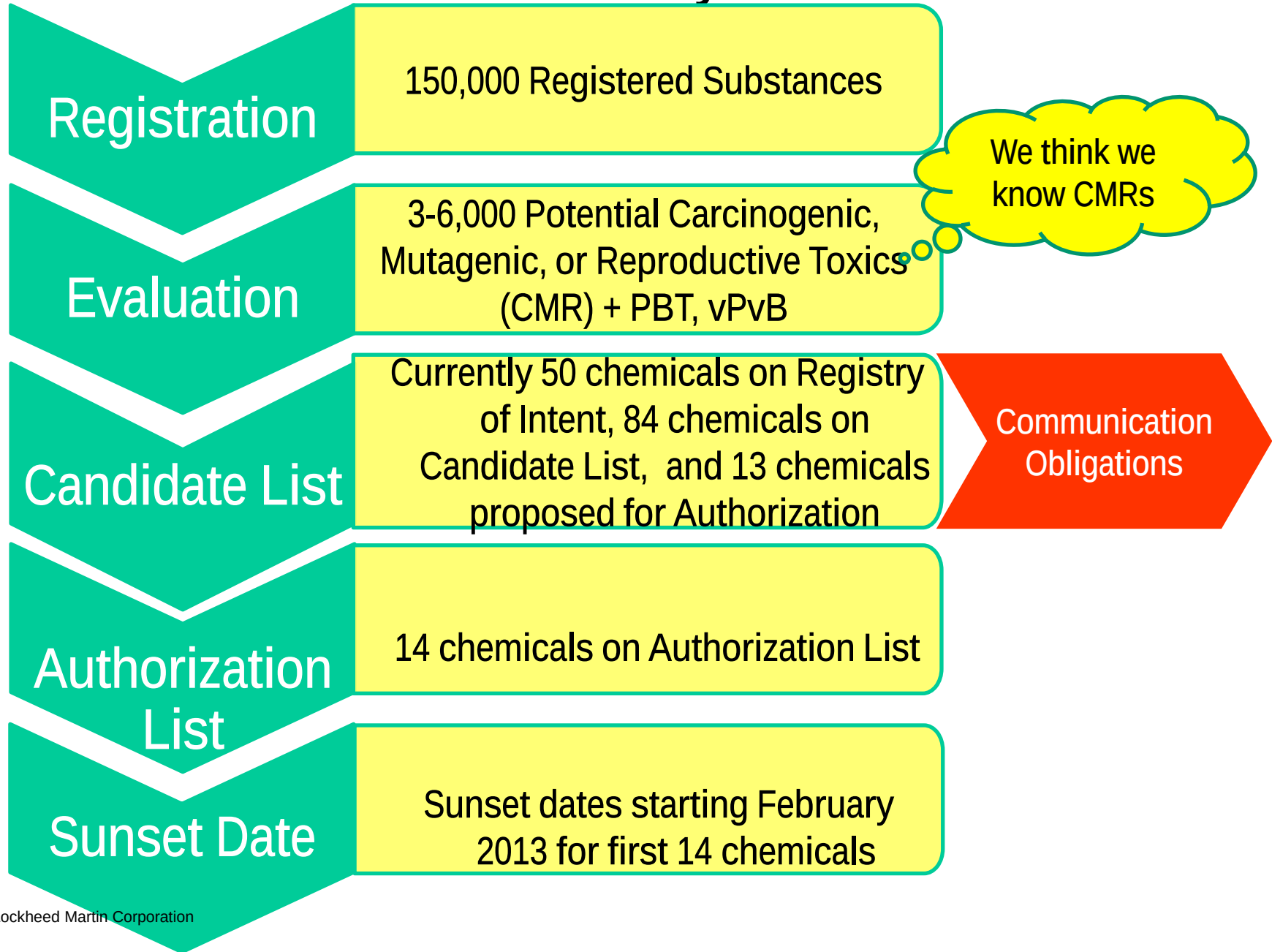


Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE AUG 2012		2. REPORT TYPE		3. DATES COVERED 00-00-2012 to 00-00-2012	
4. TITLE AND SUBTITLE REACH Impact on Aerospace Materials - U.S. Perspective				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Lockheed Martin Aeronautics,F-35 Materials and Processes,Pinellas Park,FL,33782				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES ASETSDefense 2012: Sustainable Surface Engineering for Aerospace and Defense Workshop, August 27-30, 2012, San Diego, CA. Sponsored by SERDP/ESTCP.					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 11	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

REACH

- **R**egistration, **E**valuation, and **A**uthorization (Notification and Communication) for **C**hemicals
- Will impact all suppliers even those who don't directly sell to Europe
 - i.e. upstream users obligated to inform their suppliers of hazardous usages of chemicals
- Intent was to change obligation from Government to Industry to evaluate ESH-impact of chemicals
- Industry anticipates that REACH will eliminate multi-source suppliers and products from market
 - Suppliers will evaluate financial obligations of REACH versus product profit
- New Enforcement Agency: European Chemicals Agency (ECHA)
- While **Many** Assume This European Regulations Will Not Impact Their Supply Chain.....Consider the Following

REACH Covers Virtually All EU Chemicals



The CLP Parallel Regulation

Classification, Labelling, and Packaging (CLP) Regulation EC 1272 of 2008

- ***Harmonized classification system, labels, warning pictograms, risk phrases***
- ***Establishes these items as a part of the regulation – legally enforceable***

Index No	International Chemical Identification	EC No	CAS No	Classification		Labelling			Specific Conc. Limits, M-factors	Notes
				Hazard Class and Category Code(s)	Hazard statement Code(s)	Pictogram, Signal Word Code(s)	Hazard statement Code(s)	Suppl. Hazard statement Code(s)		
024-002-00-6	potassium dichromate	231-906-6	7778-50-9	Ox. Sol. 2 Carc. 1B Muta. 1B Repr. 1B Acute Tox. 2 * Acute Tox. 3 * STOT RE 1 Acute Tox. 4 * Skin Corr. 1B Resp. Sens. 1 Skin Sens. 1 Aquatic Acute 1 Aquatic Chronic 1	H272 H350 H340 H360FD H330 H301 H372 ** H312 H314 H334 H317 H400 H410	GHS03 GHS06 GHS08 GHS05 GHS09 Dgr	H272 H350 H340 H360FD H330 H301 H372 ** H312 H314 H334 H317 H410		STOT SE 3; H335: C ≥ 5 %	3

The Curious Case of Di-isobutyl Phthalate - OR -

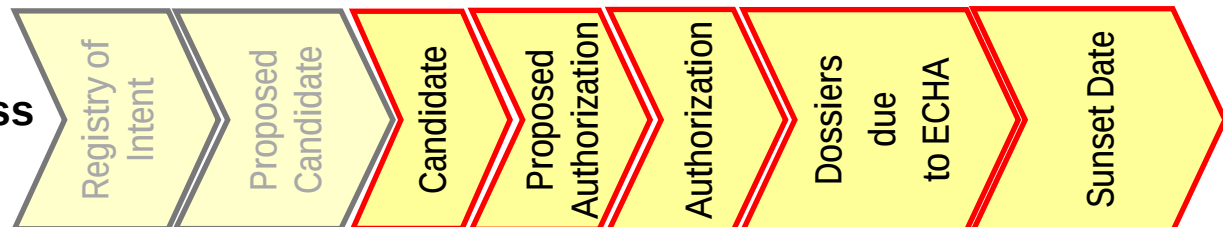
How ECHA Can Greatly Accelerate Phase-Out

- In 2008, Di-isobutyl Phthalate (DIBP) was not a CMR but was a suspected endocrine disruptor
- CLP 1st Adaptation to Technical Progress (ATP) reclassified as Reproductive Category 1B - 10 August 2009
- Added as Candidate SVHC - 13 January 2010
- Added to Authorization list - 18 August 2011
- Sunset Date - 21 February 2015

Typical 6-8 Year Process

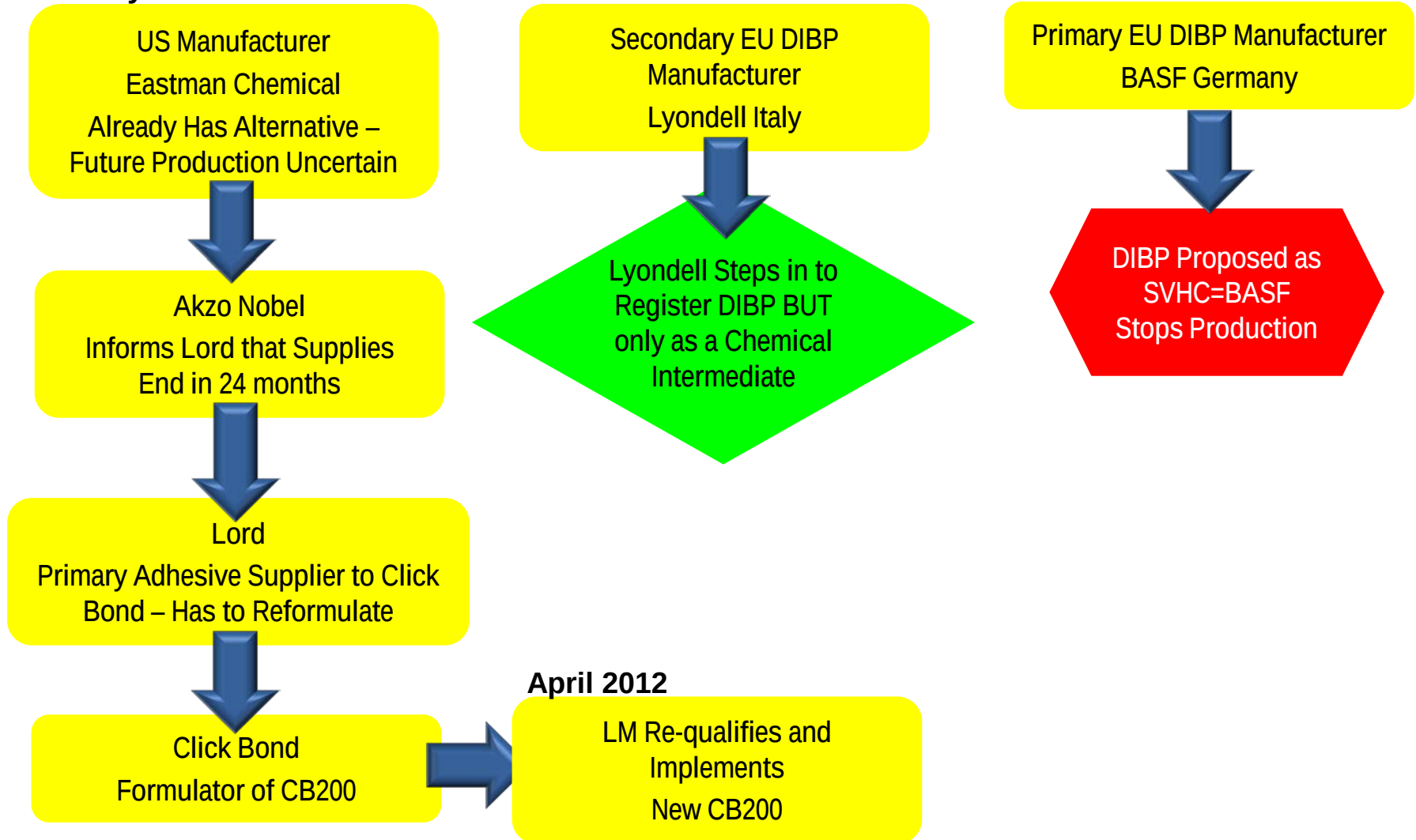


DIBP 5 Year Process

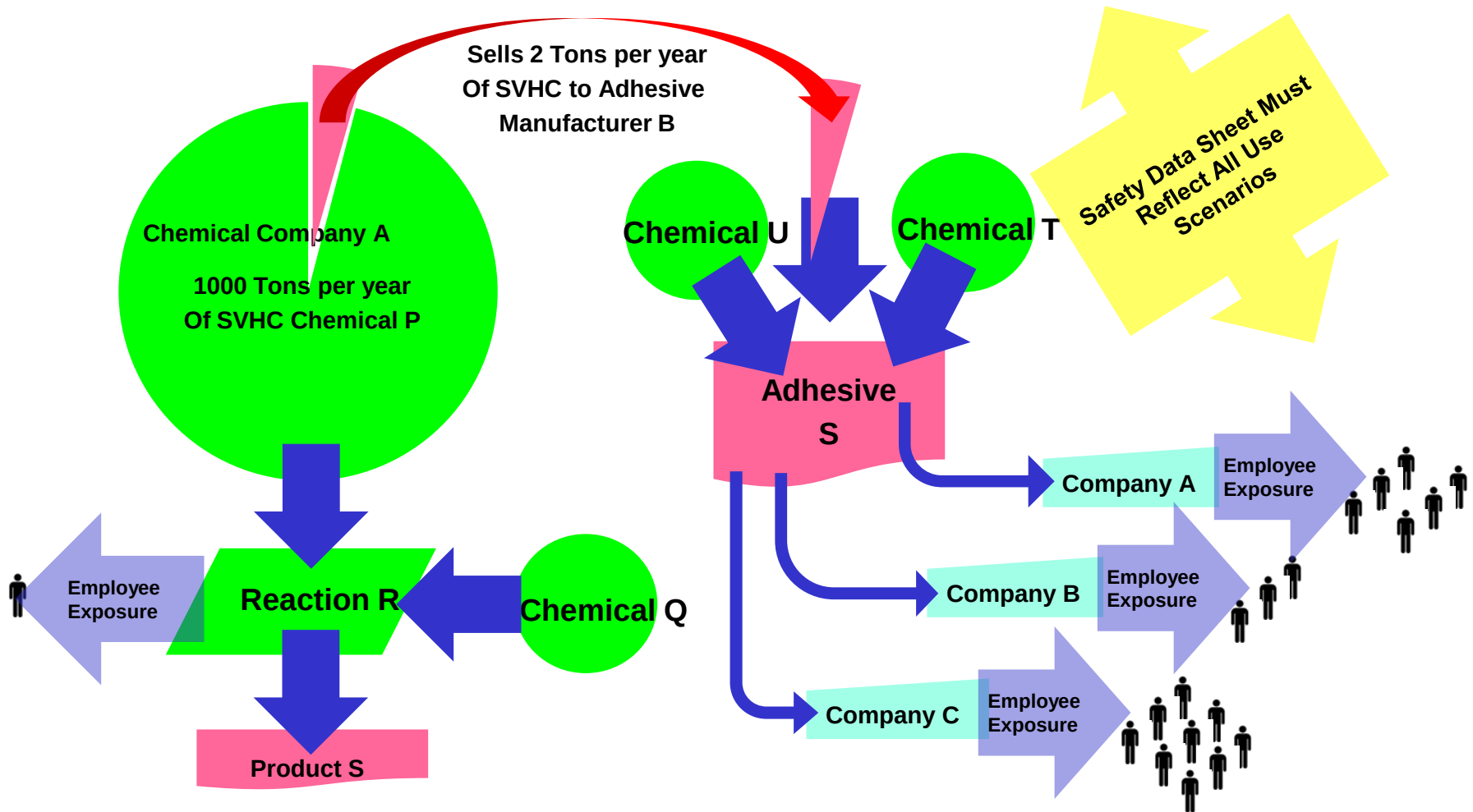


Impact of DIBP Re-Classification

January 2010



Risk to our Chemical Products

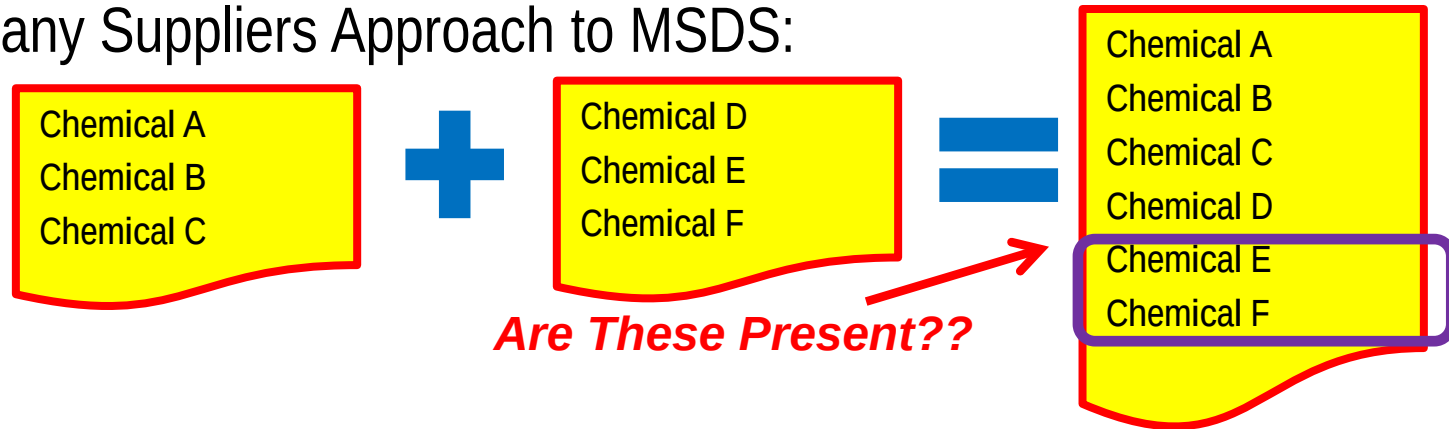


Chemical Company A Decides to Register Chemical P as an "Intermediate" Chemical only Used to React Other Chemicals - Minimal Human Exposure

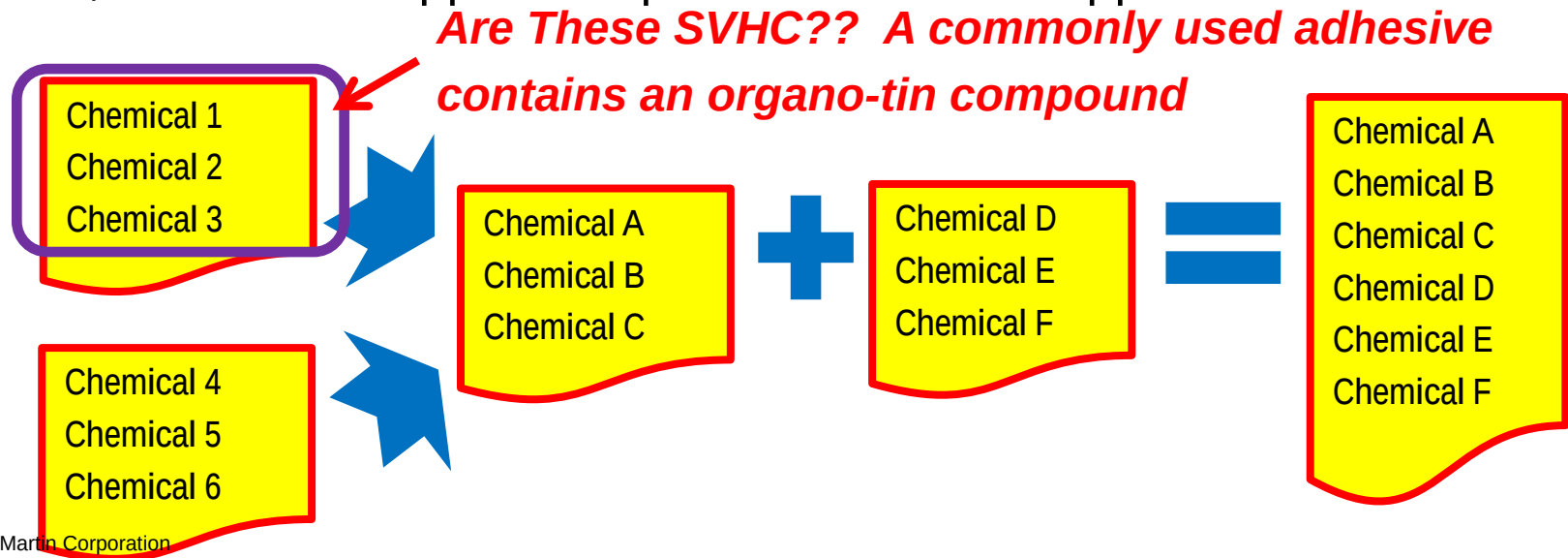
Is the Market Profitable Enough for Company A to Register Chemical P as an Adhesive for Manufacturer B – Or Does Manufacturer B Register Chemical P for Product S – Extensive Human Exposure

MSDS Assumptions

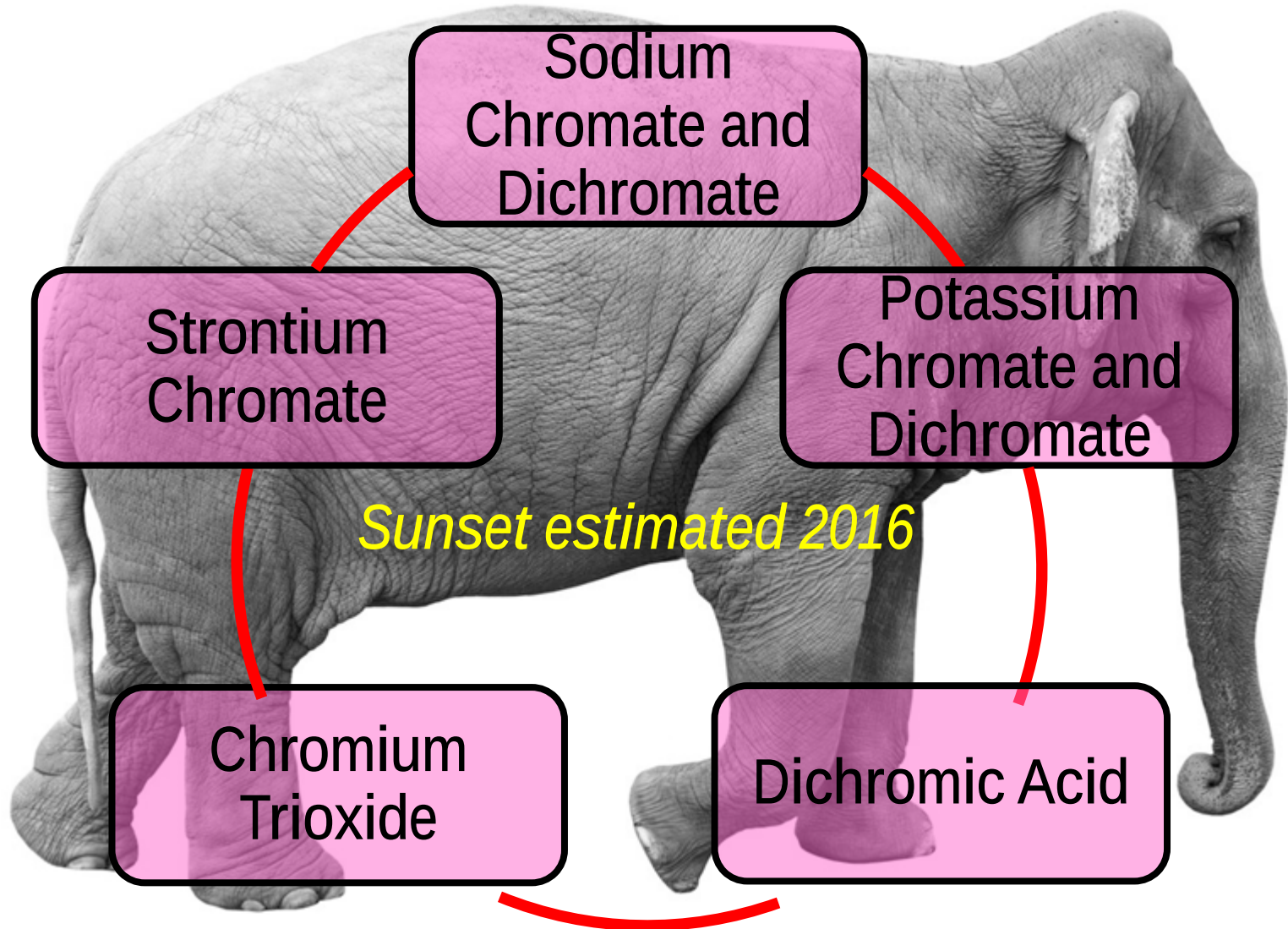
- Major Large Suppliers Analyze Products to Generate MSDS
- Many Suppliers Approach to MSDS:



- BUT, What Has Happened Upstream of Their Suppliers:



The 800 Pound Elephant in the Room



Where is Zinc Chromate? It wasn't Registered so is already "Restricted"

Other 100 Pound Problems



- **Phthalates – Used to make stuff flexible**
 - Aerospace Uses – sleeving, wire sheath, plastic panels, adhesives, etc, etc
 - Out of 30 most common, 11 are already in SVHC stages
 - EU intends to restrict all

• **Organic Nickel Compounds – Platings**



- Aerospace Uses – Plating, conductive sealants, catalysts
- REACH CLP ATP #1 Reclassified Over 100 compounds as Category 1 Carcinogens
 - REACH is required to restrict
 - Nickel Institute Fighting
- EPA IRIS Risk Assessment Due in 2013

Are We Heading Towards a Brick Wall?

- Can we rely on our suppliers to Register, Authorize, and submit Dossiers to support continued use?
 - Do they receive sufficient economic return to offset cost
 - Apparently not for zinc chromate
- Will the criticality of Aerospace products convince ECHA to exempt Hex Chrome or only Restrict (Annex XVII) at the last minute?
 - Will an exemption even keep the material available?

