



Poly One

## SAP implementations using RLINK



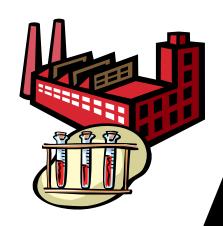
PolyOne, who are we projectOne Background
May 1st, Vinyl Compound

- Scope & Design , Data ViewsSept. 1st, Colorants
- Scope & Design, Data Views Jan. 1st, Elastomers
- •Scope & Design, Data Views Questions?

# Who are we?



As the world's polymer services leader, PolyOne forms a crucial link between two groups:

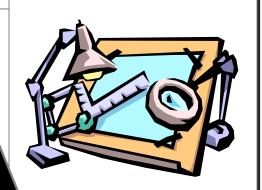


# Large Chemical Producers

Supply us with polymers and related materials

# Poly One

- Plastics Colors & Compounds
- Specialty Resins & Formulators
- Engineered Films
- Resins & Intermediates
- PolyOne Distribution
- Elastomers & Performance Additives



Designers, Assemblers, Processors

Industries ranging from telecommunications to automotive to building materials to medical supplies

# Plastic Compounds and Colors







#### Products

Vinyl, engineering resins and additives; specialty colorant and additive systems



#### Markets

Appliance, automotive, building materials, business equipment, consumer goods, wire and cable



#### Compound End Uses

Appliance components, automobile trim, fax/printer housing, bottles, pipe and pipe fittings, wire and cable insulation



#### Colorant End Uses

Plastic parts in virtually every market





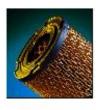
Proprietary compounds and technologies, including SPEEDeCOLOR<sup>TM</sup>, a computerized color-matching system

# Specialty Resins and Formulators













### • Annualized Revenues - \$300 million

#### Products

Emulsion polymer and micro-dispersion specialty resins; vinyl plastisols, powders and inks; latex; rigid and flexible urethane and urethane foams

#### Markets

Appliance, apparel, automotive, flooring, medical, packaging, sports and recreation, toy, wire and cable

#### Product End Uses

Air filters; automotive instrument panels; vinyl flooring and carpet backing; appliance and fabric coatings; dishwasher and closet rack coatings; medical examination gloves; footwear; screen printing inks, signage

#### Known For

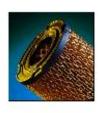
High quality and consistency in specialty resins and the expertise to offer unique technical solutions for vinyl plastisols and powder, urethane and latex system applications

# Engineered Films













### • Annualized Revenues - \$200 million

#### Products

Flexible vinyl sheeting, thermoplastic olefin(TPO) and thermoplastic urethane(TPU) polymer films, polyvinyl chloride (PVC)/polyolefin foam laminates, TPO/polyolefin foam laminates, vinyl laminates

#### Markets

Automotive, label/decal, medical, office supply, packaging, pond/pool/spa

#### Product End Uses

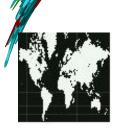
Automobile instrument panels, door trim panels, armrests, airbag doors and covers; medical blood bags and intravenous tubes; hospital inflatable mattresses; pool liners.

#### Known For

Value-added film finishing technologies such as embossing, printing, painting and laminating

## Resin and Intermediates













#### Equity Joint Ventures

- Australian Vinyls Corporation, Australia Partner: Orica Ltd.
- Oxy Vinyls, LP, United States Partner: Occidental Chemical
- Sunbelt Chlor-Alkali, United State Partner: Olin Corporation

#### • Other Joint Ventures

- DH Compounding Company, United States Partner: Dow Chemical
- Geon/Polimeros Andinos, Colombia Partner: Petroquimica Colombiana S.A.
- So.F.teR S.p.A., Italy Partner: So.F.teR S.p.A.
- SPCGeon PTE Limited, Singapore Partner: Singapore Polymers Corporation
- Star Color Company Limited, Thailand Majority owned by PolyOne
- Techmer, PM, LLC, United State Partner: Techmer PM
- Tekno Polimer, Turkey Majority owned by PolyOne

## Distribution













#### Annualized Revenues - \$500 million

#### Services

Delivery of more than 3,500 grades of engineering and commodity resins from approximately 20 major material suppliers, as well as standard and custom-compounded materials

#### Markets

Custom molders and extruders of applications for automotive, building materials, consumer goods, electrical/electronics, industrial, medical, packaging, wire and cable

#### Distribution Locations

**United States, Canada, Mexico** 

#### Known For

Adding value, not only through rapid delivery, but through specialists who advise customers on optimal resin formulations and processing support

# Elastomers and Performance Additives













#### • Annualized Revenues - \$500 million

#### • Products/Services

Thermoset elastomer (rubber) compounds, rubber compounds for roller and specialty applications, elastomer-enhancing colorants and additives, tolling (mixing of raw materials) for the rubber industry

#### Markets

Aerospace, building materials, automotive, electrical, industrial, medical, sporting goods, wire and cable

#### Product End Uses

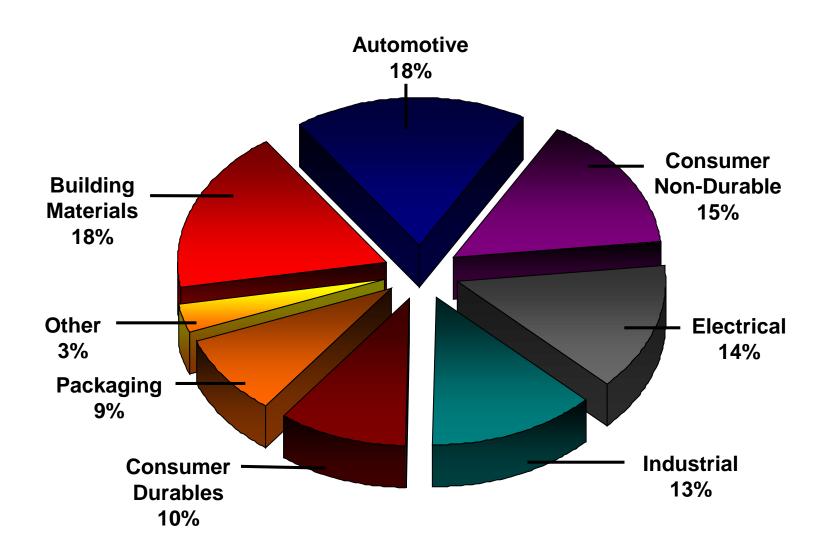
Automotive hoses and belts, footwear, escalator railings, industrial conveyers

#### Known For

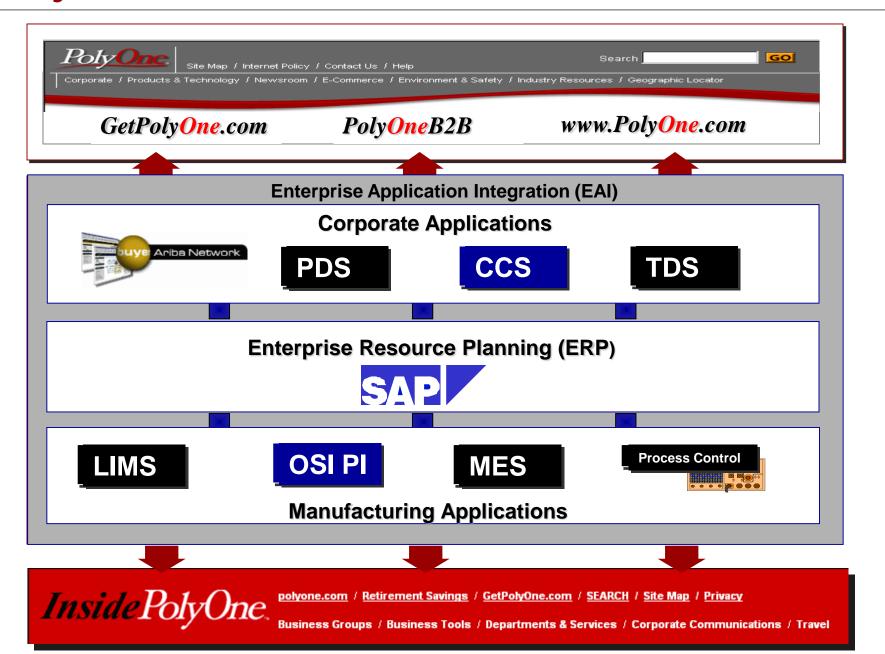
The leading non-tire rubber compounder in North America

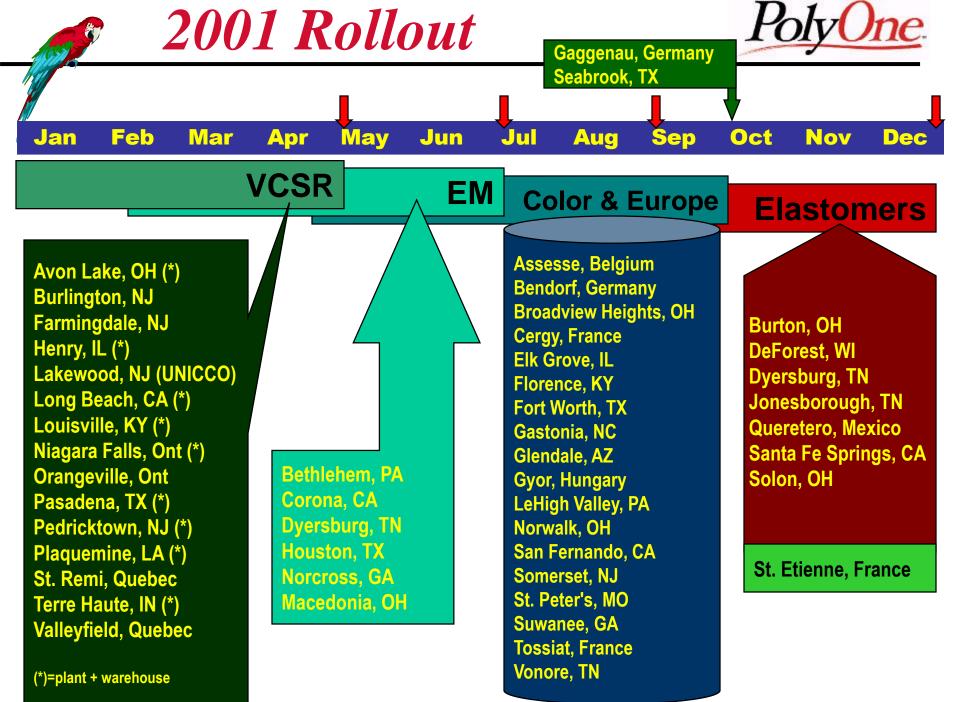
# PolyOne Markets





# PolyOne Future Common Business Platform





# 2001 Rollout

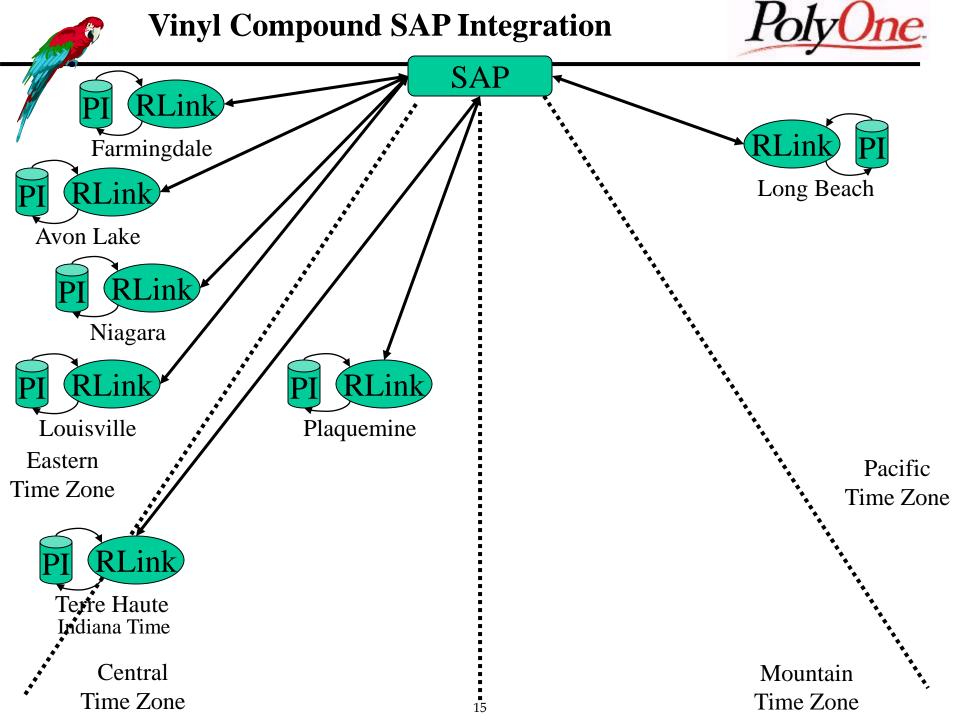


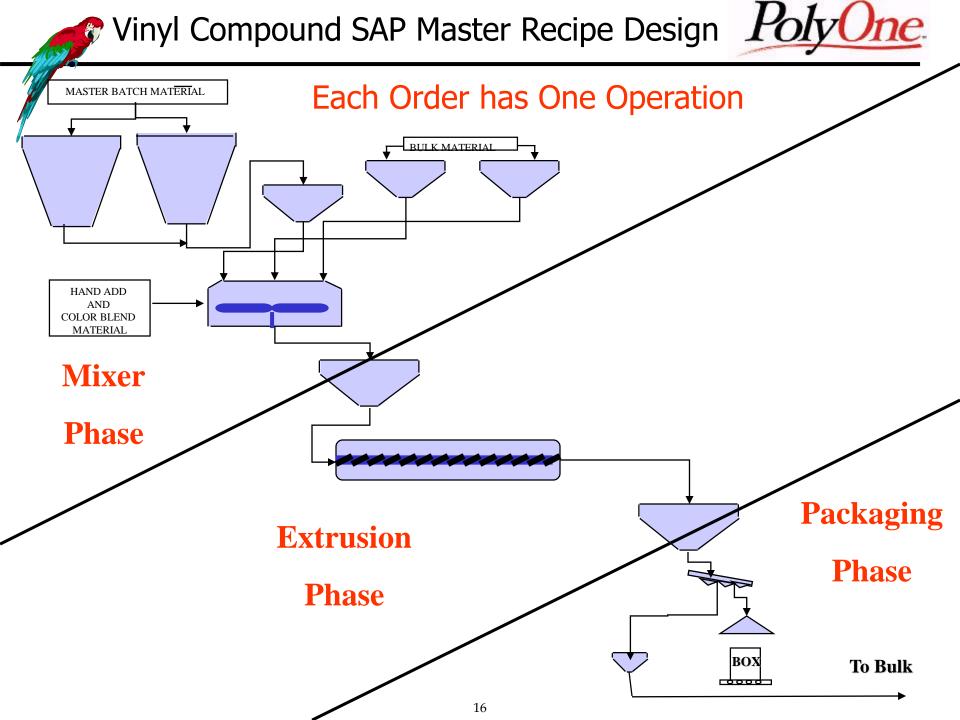
Sep Jan Feb Mar **Apr** May Jul Nov Jun Aug Oct Dec **VCSR** Avon Lake, OH (\*) **Burlington, NJ** Farmingdale, NJ Henry, IL (\*) Lakewood, NJ (UNICCO) Long Beach, CA (\*) Louisville, KY (\*) Niagara Falls, Ont (\*) Orangeville, Ont Pasadena, TX (\*) Pedricktown, NJ (\*) Plaquemine, LA (\*) St. Remi, Quebec Terre Haute, IN (\*) Valleyfield, Quebec (\*)=plant + warehouse

# Plastic Compounds & Colors



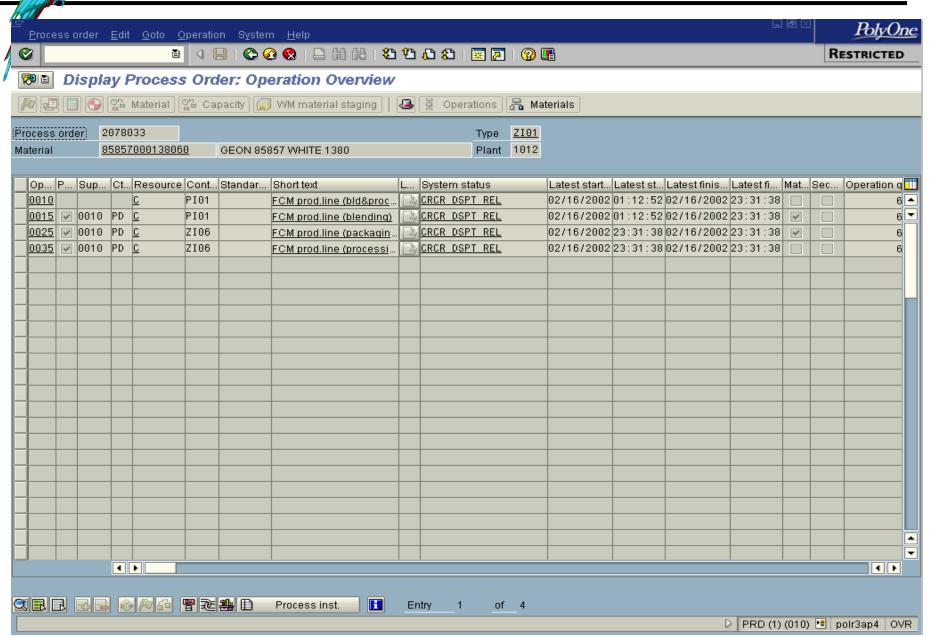






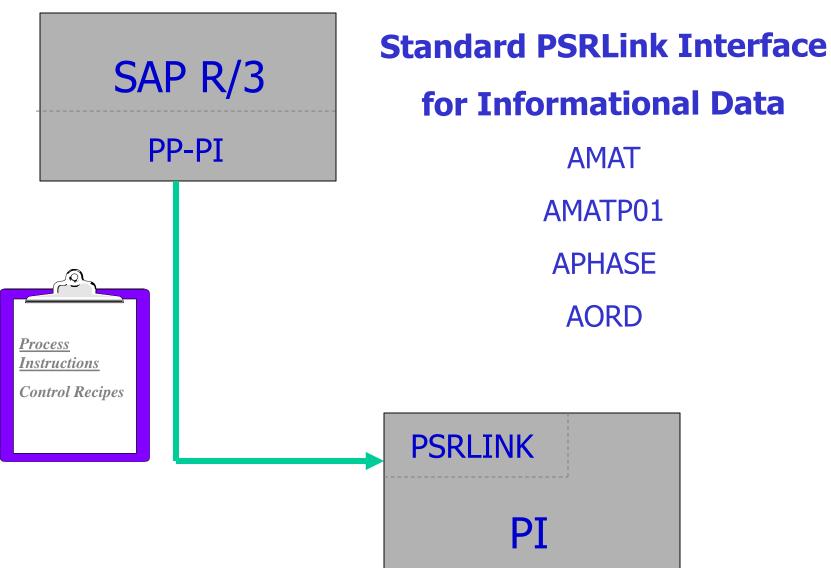
### VC SAP Order Operations & Phases







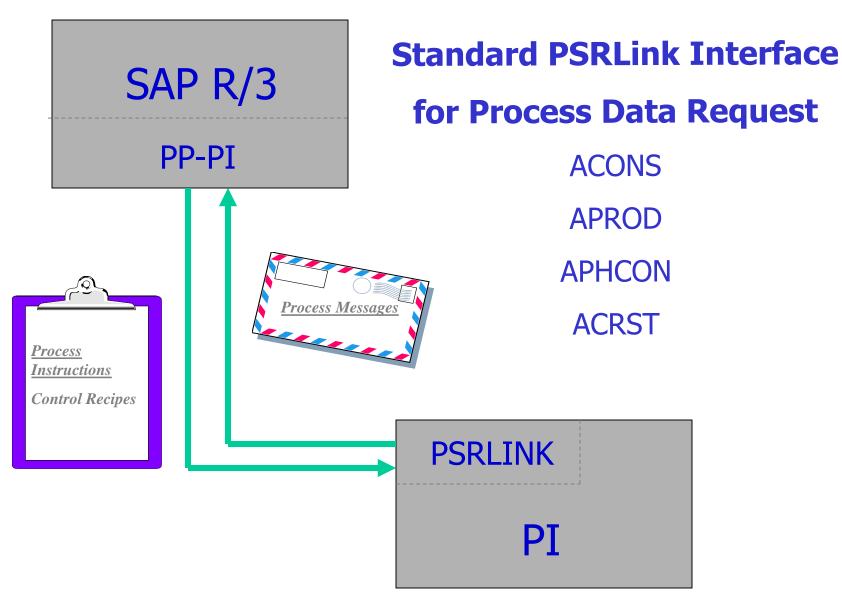






- AORD Order Data
  - including start/finish date/time, PolyOne ProdVers
- APHASE Phase Data
  - including External Phases
- AMAT Material Allocation Info
  - Raw Material consumption
- AMATP01 Material Allocation Info
  - Finished Goods production





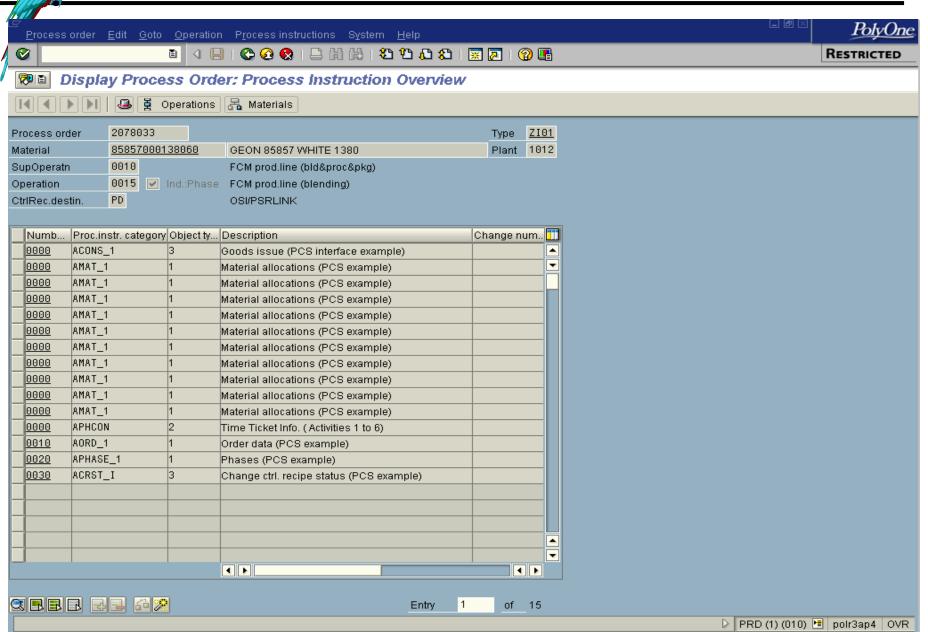


# ACRST - Control Recipe status

- Start/Processed/Discarded
- ACONS Goods Issue
  - Raw Material consumption (MAT\_CONS)
- APROD Goods Receipt
  - Finished Goods production (MAT\_PROD)
- APHCON Time Ticket Info
  - Confirmation Qty & Time

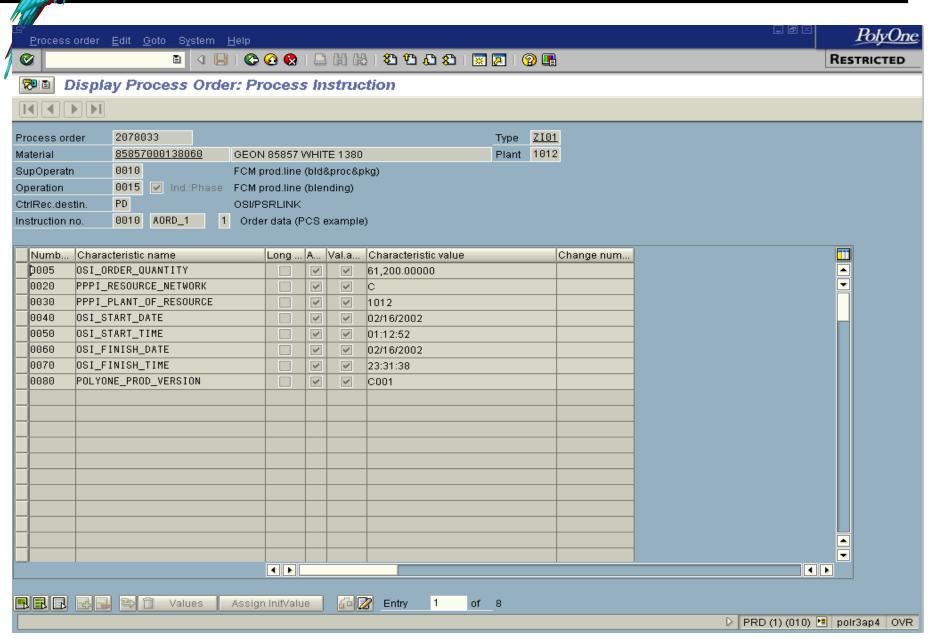
#### **VC SAP Order Process Instructions**





# VC SAP Order Process Instr Characteristics Pol







# ${\mathbb P}$ VC SAP Order Process Instructions in RLink ${PolyC}$

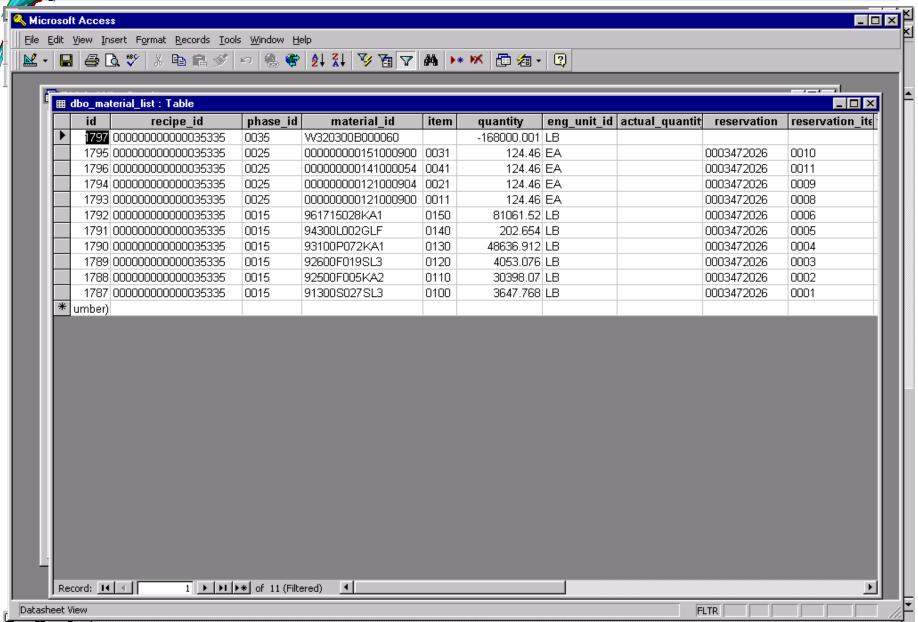


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	0000000000000035335		0006	PPPI_MATERIAL_QUANTITY	NUM	8.1061520000000004E+04				
	0000000000000035335		0003	PPPI_MATERIAL_SHORT_TEXT	CHAR	SUSP RESIN 240 (LVL) BULK R.				
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	0000000000000035335		0005	PPPI_PHASE	CHAR	0015				
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	000000000000035335		0005	PPPI_PROCESS_ORDER	CHAR	000003038886				
	000000000000035335		0006	PPPI_REQUESTED_VALUE	CHAR	PPPI_UNIT_OF_MEASURE				
	000000000000035335		0007	PPPI_REQUESTED_VALUE	CHAR	PPPI_YIELD_TO_CONFIRM				
	000000000000035335		0009	PPPI_REQUESTED_VALUE	CHAR	PPPI_STATUS_CONFIRMED				
	000000000000035335		0010	PPPI_REQUESTED_VALUE	CHAR	PPPI_EVENT_DATE				
	000000000000035335	00000080	0011	PPPI_REQUESTED_VALUE	CHAR	PPPI_EVENT_TIME				
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#### VC SAP Order Bill of Materials in RLink





### **RLink Translation Method**



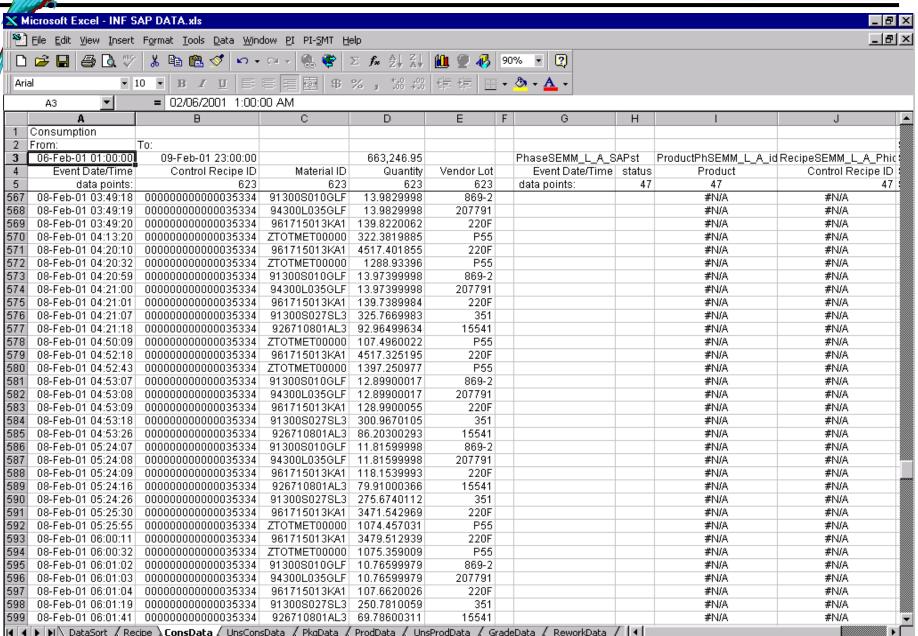
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	X Rcp1 Stab Stab3 100#	X Rcp1 Stab Stab3 100#	X Rcp1 Stab Stab3 110#		
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Recipe	Rcp1	Rcp1	Rcp1	Rcp1	Rcp1
Mat'l	Resin	ImpMod	Stab	<b>Pigment</b>	Pigment
Batch	Resin1	ImpMod2	Stab3	Pigment4	Pigment5
Otv	480	290	210	50	60



#### VC RLink Interface data in PI







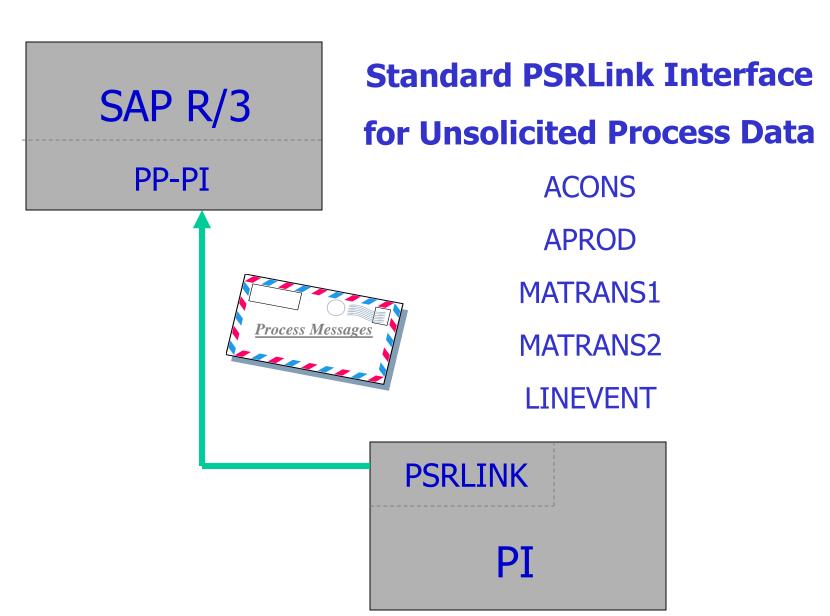
### VC RLink Interface data in PI



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3	03-Feb-01 03:46:46	000000000000034749			101111A079		03-Feb-01 03:46:47			000000000000034749
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# PI\_CONS - Unsolicited CONS

- unplanned consumption (SAP\_TRAN)
- PI\_PROD Unsolicited PROD
  - unplanned production (SAP\_TRAN)
- MATRANS1 FG Grading
  - Move from QI, then Batch ID change
- MATRANS2 Rework CONS
  - Move from Blocked, then CONS
- LINEVENT Line Events
  - Populates custom SAP table



### VC RLink Interface data in PI



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	4	Event Date/Time	Current Batch	Material ID	Quantity	New Batch		PPQTY_L_A_UNSQIMV				
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	6	22-Jan-01 08:13:17		W120200B000000	171300	001111A057						
	7	22-Jan-01 08:13:18		W745100B000060	39785	001111A066						
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	9	22-Jan-01 08:47:23	101111A058	W320300B000060	1350	401111A058						
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	4	25-Jan-01 10:38:52		C900000B000000	177300	001111A071						
_	5	25-Jan-01 13:05:39		C700000B000060	281590	001111A059						
	6	26-Jan-01 10:02:49		8466500B000000	360300	001111A073						
	7	29-Jan-01 10:09:22		C900000B299960	122995	001111A074						
_	8	29-Jan-01 10:09:23		W340100B299960	23975	001111A075						
	9	29-Jan-01 10:10:30		W340100B299900	186900	001111A076						
	20	29-Jan-01 10:11:18		W240200B299800	763500	001111A077						
	21	30-Jan-01 09:35:09		W241300B299800	379300	001111A078						
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	26	05-Feb-01 13:38:52		X1111580720360	70000	001112A090						
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# **Vinyl Compound SAP Integration Summary**



Number of Plants: 6

Number of Lines: 21

**DL Functions: CRDL**,

**PMU Functions** 

**Control Recipes:** 

**CONS PMU:** 

**Parameters** 

CONS, PROD,

BlkCONS,

Grading,

**LineEvents** 

avg. 182/week

avg. 4120/day

PROD PMU: avg. 555/day



Staff: 8

**Design/Code:** 2 months

Testing: 2 months

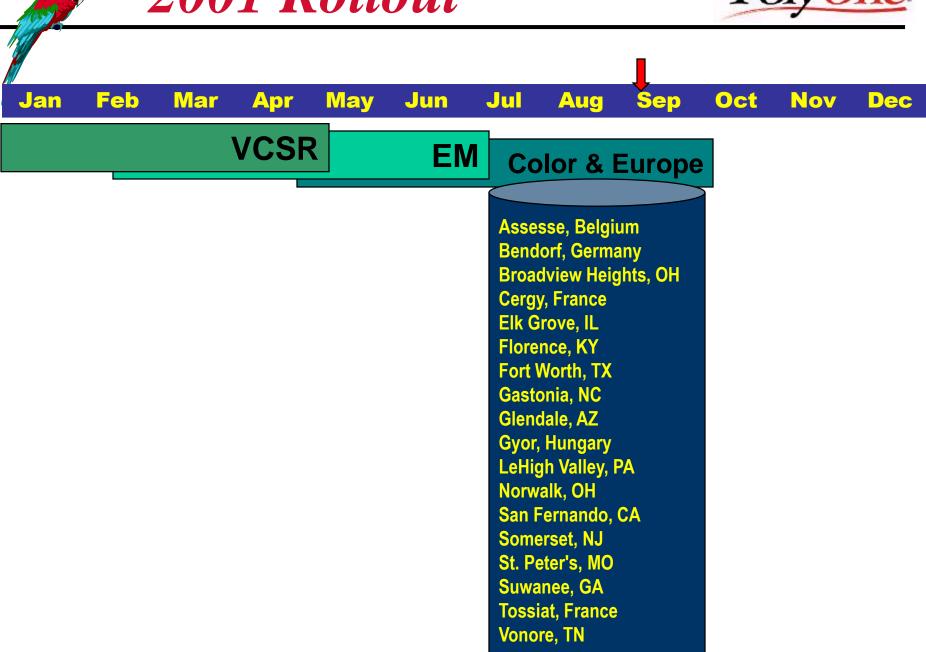
**Implementation:** 

Staggered over 3 mo



# 2001 Rollout



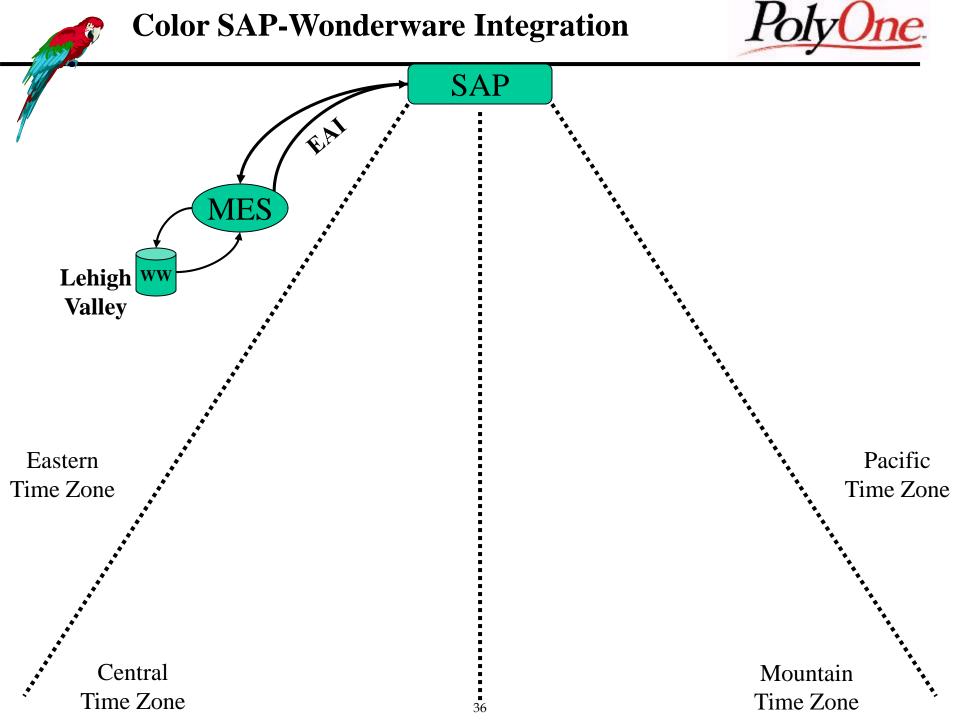


# Plastic Compounds & Colors







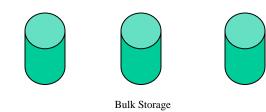


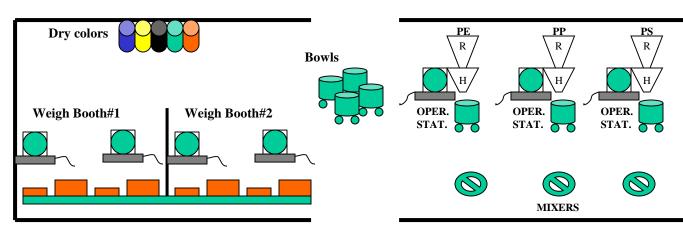


## Color SAP Master Recipe Design



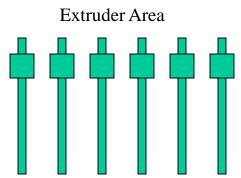
#### **WEIGHMENT AREA**





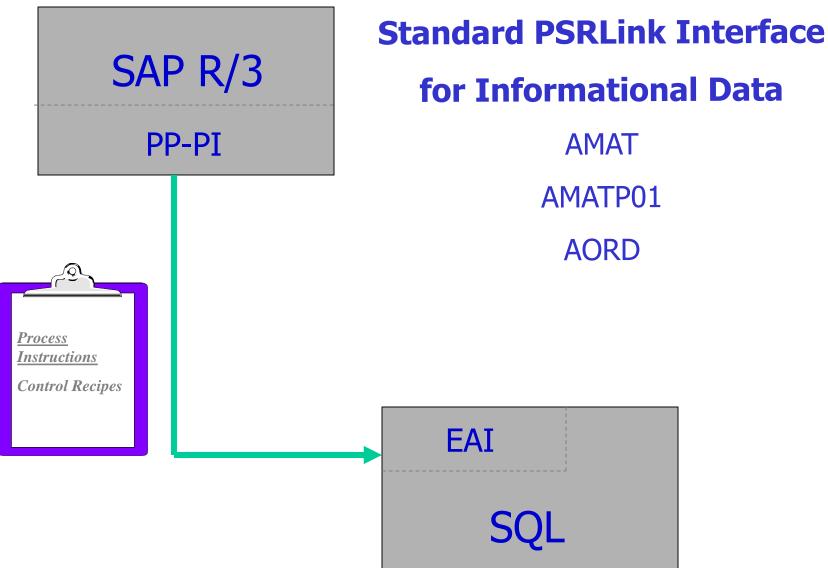
### Each Order has

- One Operation
- One Phase









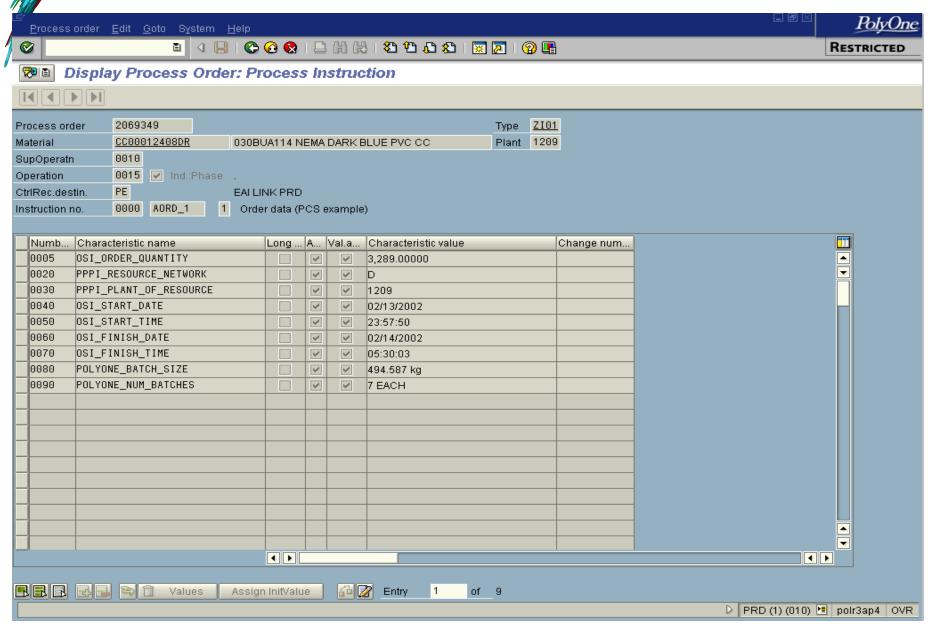


## AORD - Order Data

- including start/finish date/time, PolyOne ProdVers
- Batch\_Size, Num\_Batches
- AMAT Material Allocation Info
  - Raw Material consumption
- AMATP01 Material Allocation Info
  - Finished Goods production

## $m{\mathscr{F}}$ Color SAP Order Process Instr Characteristics Poly(











**Standard PSRLink Interface** SAP R/3 for Unsolicited Process Data PP-PI **ACONS EAI** 





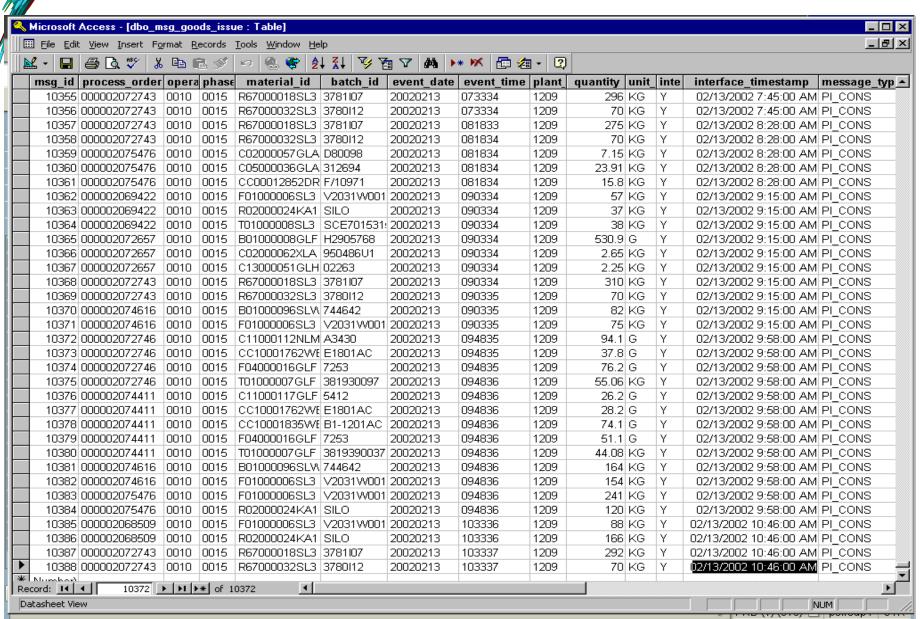


Consumption



### Color EAI Interface data in SQL





### **Color SAP Integration Summary**



**Number of Plants:** 

**Number of Lines:** 

CRDL, **DL Functions:** 

> **Parameters** Staff:

**CONS PMU Functions Design/Code:** 1 1/2 month

> **Testing:** 1 month

**Implementation:** 9/1/01

**Control Recipes:** avg. 58/week

**CONS PMU:** avg. 124/day





### Rlink - A Certified SAP Interface

### Why Not eAI?

- The information that is interfaced between SAP and a shop floor MES application is not data that would likely be shared simultaneously with any other application.
  - ⇒ One of the strengths of eAI is its ability to interface one piece of data to multiple applications and guarantee its delivery to all target systems.
  - ⇒ A process order would not be interfaced to more than one MES application.
  - ⇒ Consumption & production need to successfully post to SAP before you would want to share the data with any other application.
- eAl is a robust set of tools that allows PolyOne to develop and get a centralized view of all interface activity, but it does not yet have the set of mature tools to monitor and easily recover/requeue messages that come standard as part of a certified interface.
  - ⇒ The volume of transactions associated with a MES application are typically an order of magnitude or two higher than most other data that would need to be interfaced.
  - ⇒ The vendor of the certified interface builds the necessary level of monitoring and recovery capability into their product which PolyOne may not want to invest the time and effort to include in the eAI tool set for the more specialized information such as shop floor data.

## **Business Case for Certified Interfaces**



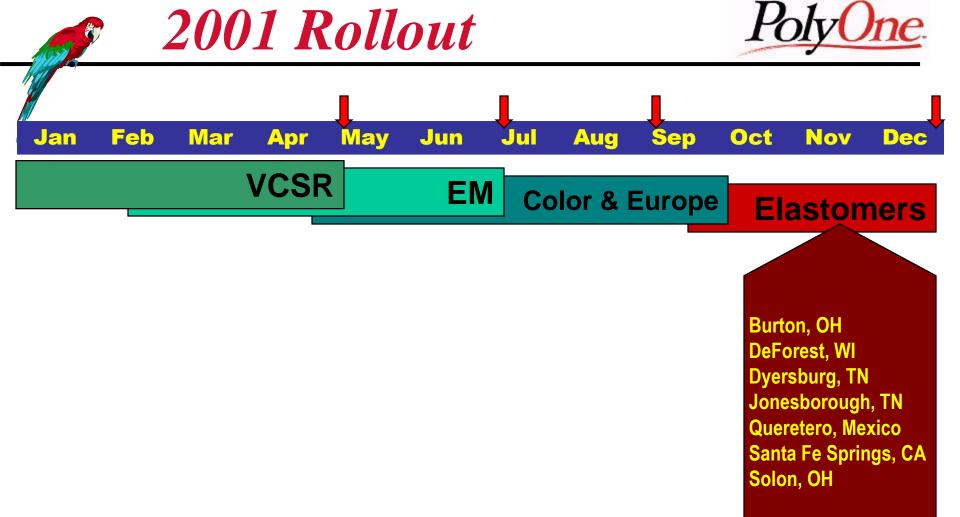
- For true point-to-point applications, where it is unlikely that other applications will require the data, certified interfaces are the method of choice.
- Certified Interfaces are "off the shelf" solutions that are extensions of the primary application.
- Two examples of this are OSI's Rlink product (PPPI certified interface) and LabSystems SMIDI product (QM certified interface).
- Certified Interfaces protect us from having to write extensive code or perform extensive testing for SAP version changes, this is handled by the supplier of the interface.
- These Certified Interfaces are robust in capabilities because the primary application (SAP) will normally require it, as a part of certification.

### **Conclusion**



## Recommend Rlink as PolyOne Standard Shop Floor Certified Interface

- It should be evident that both eAl and Rlink are similar in nature and can accomplish the same functions.
- Rlink delivers the connectivity to SAP as part of the standard install of the product and supports the connection from end to end; eAI requires development of the integration to create the connection.
- Rlink comes with standard monitoring tools and has mass re-queue capability; eAl does not currently have the tools to easily monitor and requeue messages.
- Rlink should be the interface method of choice for most standard shop floor data; eAl will be used to fill the gap for any non-standard data objects or file copies.

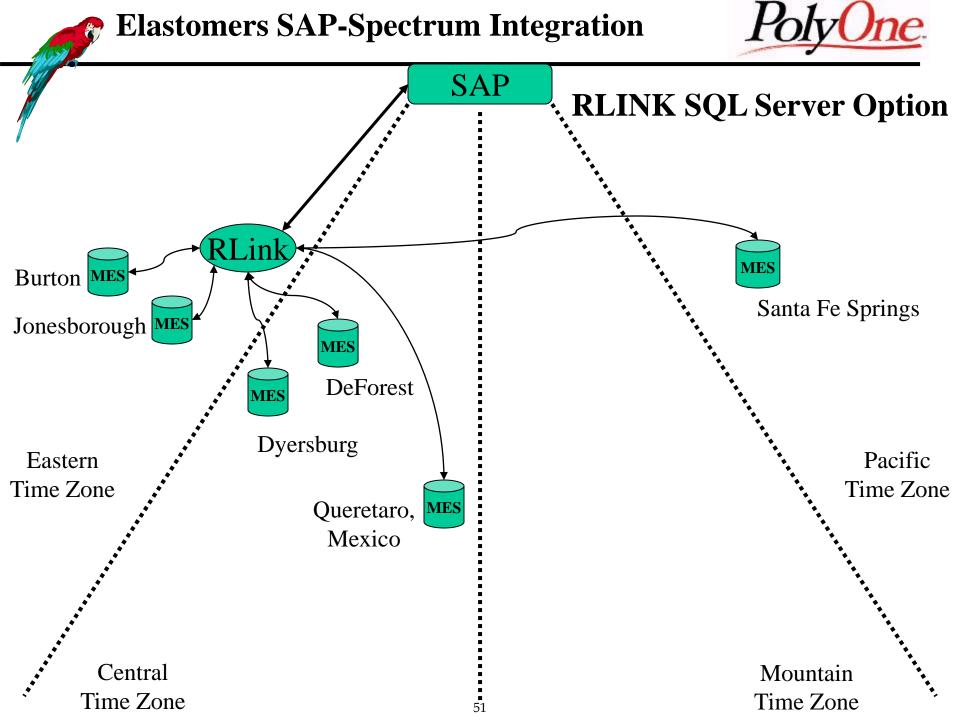


St. Etienne, France

## Elastomers & Performance Additives







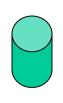


### Elastomers SAP Master Recipe Design



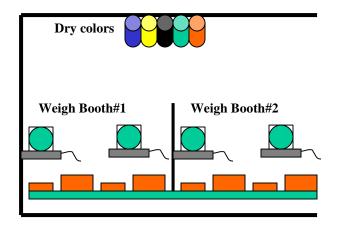
#### **WEIGHMENT AREA**

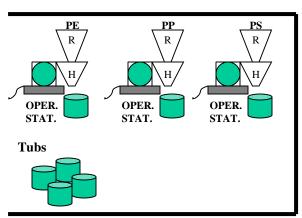






Bulk Storage





#### **MIXING AREA**







#### MIXERS

### Each Order has

- One Operation
- One Phase

### PACKAGING AREA

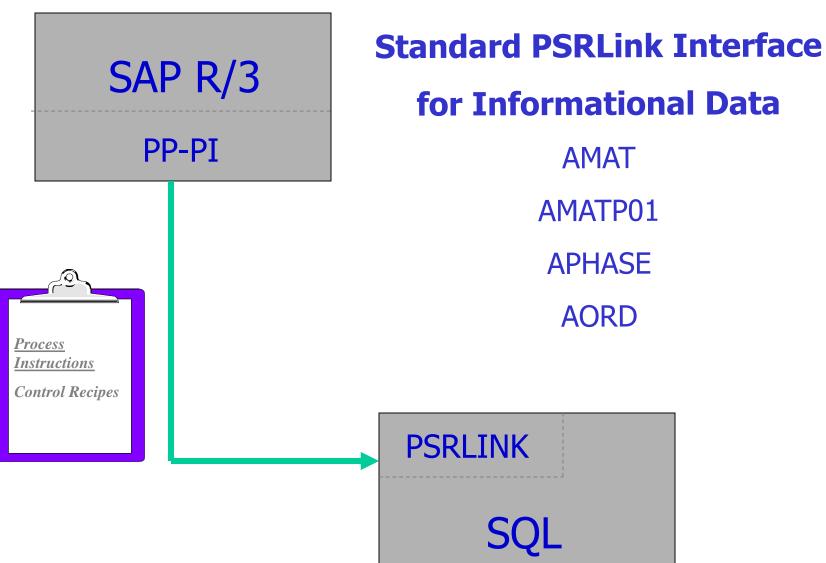














## AORD - Order Data

- including start/finish date/time, PolyOne ProdVers
- Batch\_Size, Num\_Batches, Polymer\_Type
- Cure\_Type, Dip\_Type, LH\_Value, Aging, Shelf\_Life

### APHASE - Phase Data

> including Phases

### AMAT - Material Allocation Info

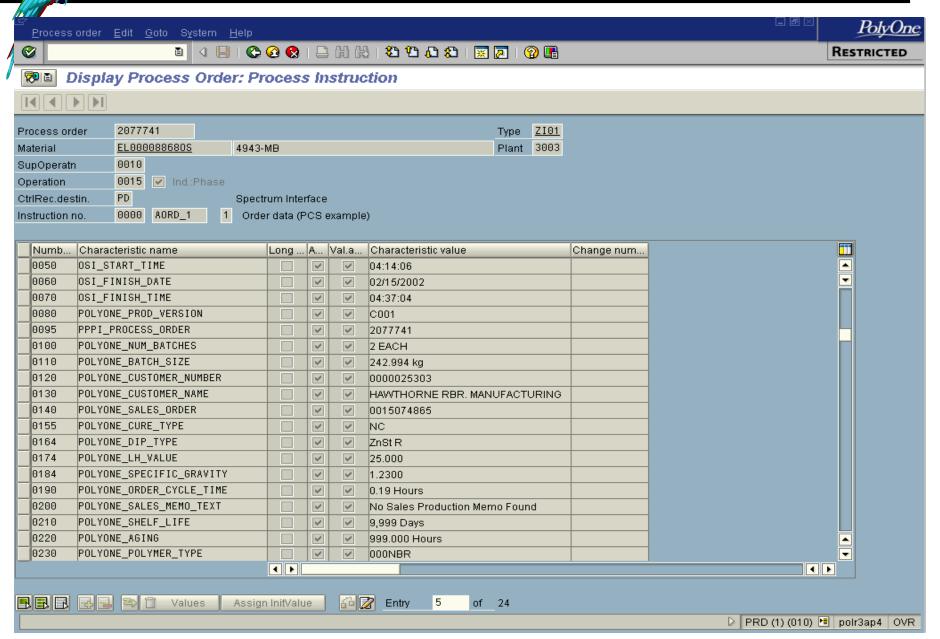
Raw Material consumption

### AMATP01 - Material Allocation Info

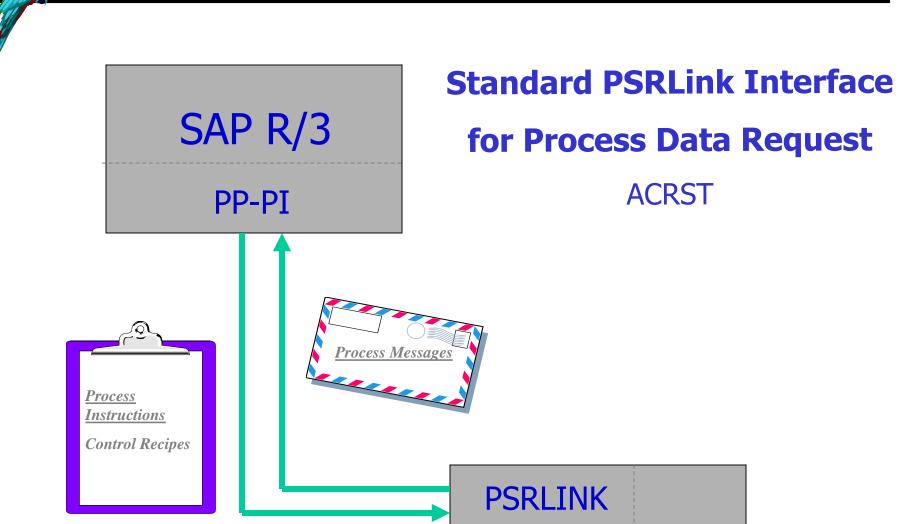
Finished Goods production

# EPA SAP Order Process Instr Characteristics Poly









56





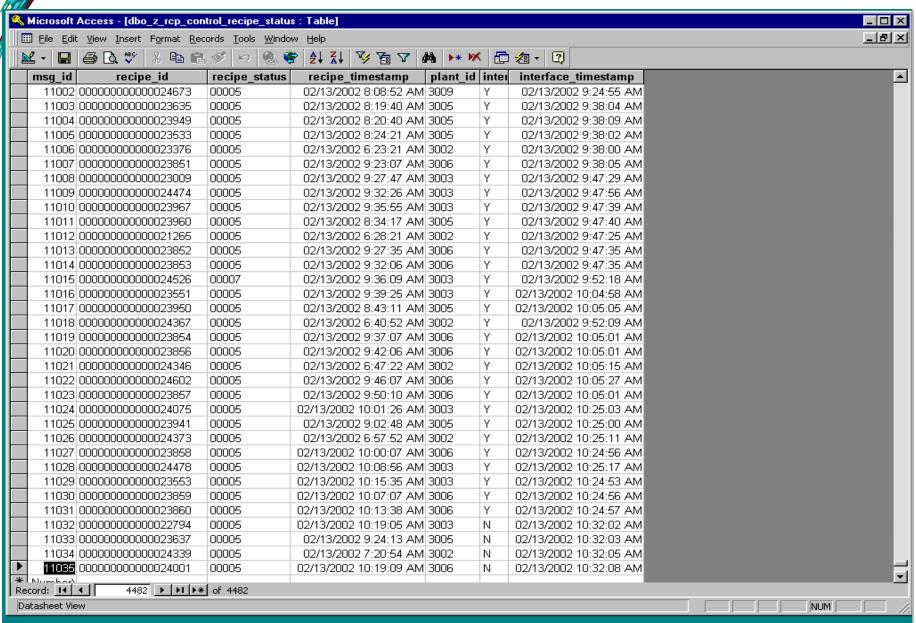
## ACRST - Control Recipe status

Start/Processed/Discarded



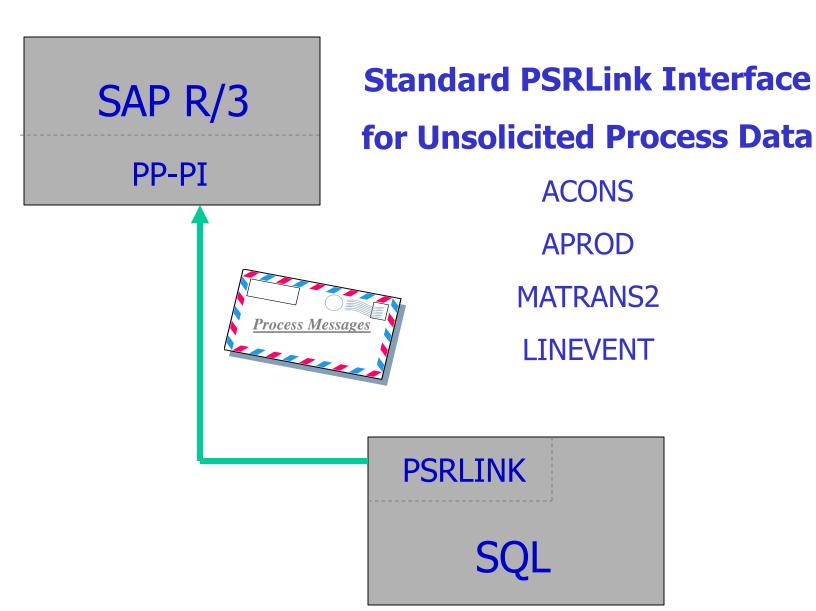
### EPA RLink Interface data in SQL













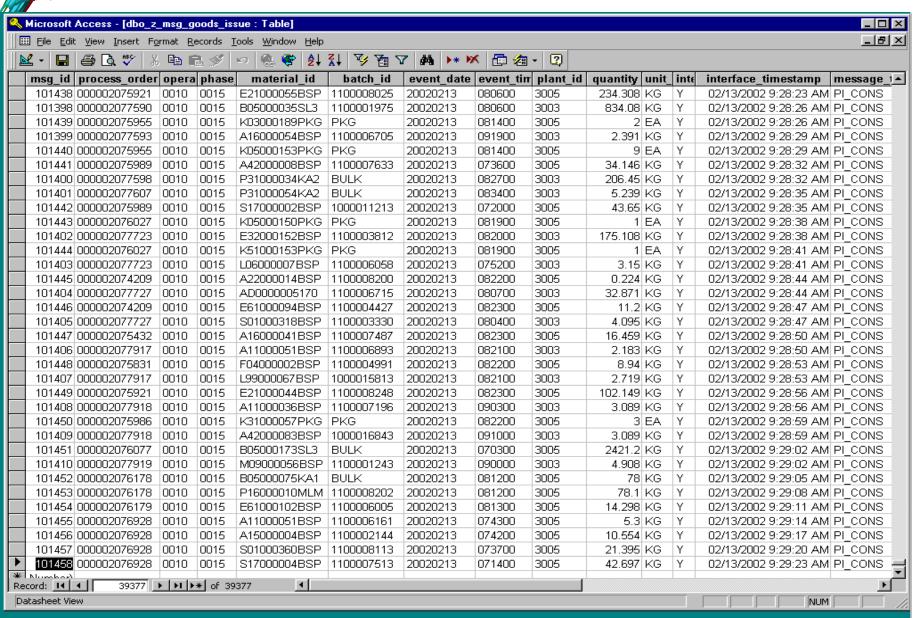


- Consumption (SAP\_TRAN)
- PI\_PROD Unsolicited PROD
  - Production (SAP\_TRAN) with cont\_id
- MATRANS2 Rework CONS
  - Move from Blocked, then CONS
- LINEVENT Line Events
  - Populates custom SAP table



### EPA RLink Interface data in SQL





### **Elastomers SAP Integration Summary**



Number of Plants: 6

Number of Lines: 30

**DL Functions:** CRDL,

Parameters Staff: 3

PMU Functions CONS, PROD, Design/Code: 1 month

BlkCONS, Testing: 2 months

LineEvents Implementation: 1/1/02

Control Recipes: avg. 370/day, max. 450/day (during 12 hour period)

CONS PMU: avg. 5200/day, max. 311/hour

PROD PMU: avg. 1350/day, max. 184/hour

### SAP implementations using RLINK



PolyOne, who are we projectOne Background
May 1st, Vinyl Compound

Scope & Design , Data Views

Sept. 1st, Colorants

Scope & Design, Data Views

Jan. 1st, Elastomers

Scope & Design, Data Views

**Questions?**