# M3: How Sherwin Williams used Enablon to implement a Global multi-source product compliance solution

Steve Smith – ERM Chuck McCormick – ERM



#### Regulatory Objective

- Establish a Single source of Product Marketability Compliance
  - Develop a single source standardized tool for Substance/Volume Tracking (SVT) to facilitate global chemical compliance for SHW businesses.
- Fully integrated into the SHW Sales and logistics environment
  - Track regulated chemicals and quantities & proactively to manage compliance status
- Advanced Monitoring & Reporting
  - Facilitate compliant global business objectives across business groups



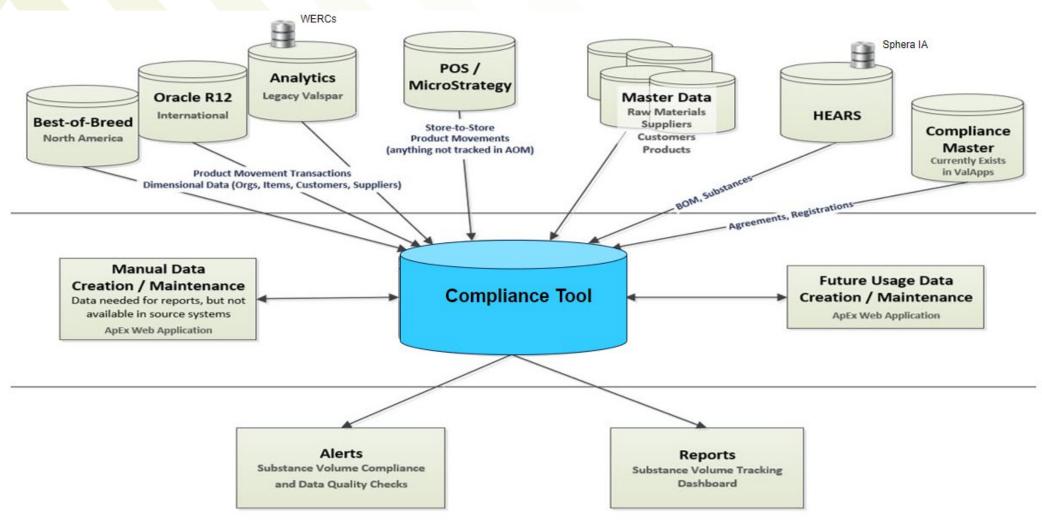
#### Regulatory Processes

- Multiple in-compatible Regulatory processes and systems
  - Valspar Compliance Master
  - Sherwin Williams Home grown internal Oracle 11i solution
- Multiple Regulatory feeder systems
  - LOLI database
  - Sherwin Williams internal HEARS

Sherwin-Williams (SHW) objective for the Global Substance Volume Tracking (SVT) program was the development of a robust, enterprise class, single source, and standardized tool for providing SVT functionality to enable global chemical compliance for SHW businesses globally.



#### Complex Sales & Logistics Env.







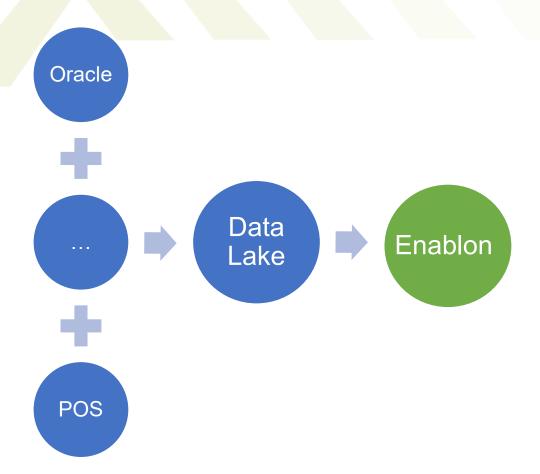
#### The Sherwin Williams Challenge

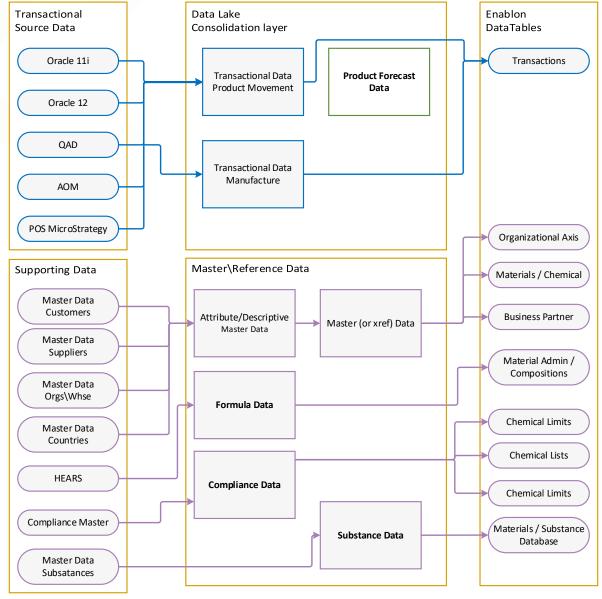
- The Size of the data
  - >1.5 M formulations
  - > 725 K Business Partners

- > 12.5 M Transactions
- >45 k Tracked Substances
- The complexity of the formulations
  - Not your typical formulations of mainly RM and occasional Intermediates
- The Complexity of the Supply Chain
  - Multiple disparate point of sale
- The pace of Operations
  - Impact of change



#### **Data Lake**





Support >15 regulations that were then grouped in 3 categories

- List-based Positive / Negative
  - Chemical inventory Approved substances must be on a list
  - Chemical restrictions Approved Substances must not be on a list
- Threshold-based Below threshold approval
  - Chemical List Approved Substances must be on List and < threshold</li>
- Registration-based
  - Chemical and Manufacturer / Importer must have a coverage per Regulation
    - Registration
    - Supplier Coverage
    - Exemption



Transactional Requirements for List-based regulations

- Product decomposition Substance based composition
  - Substance representation of Product
  - Raw Material Composition
- Tracking composition
  - Combination of Substances and Raw Materials that needs to be monitored for compliance determination
    - Substances
    - Raw materials covered by suppliers
- Restrictions Substances restricted per the regulation

Calculate collective positive status per product or flag transaction for regulatory review



Transactional Requirements for threshold-based regulations

- Product decomposition Substance based composition
  - Substance representation of Product
  - Raw Material Composition
- Tracking composition
  - Combination of Substances and Raw Materials that needs to be monitored for compliance determination
    - Substances
    - Raw materials covered by suppliers
- Record annual volume for the transacted substance per Regulatory Zone

Calculate collective positive status per product and track global volume to remain below the listed threshold or flag transaction for regulatory review



Transactional Requirements for registration-based regulations

- Product decomposition Substance based composition
  - Substance representation of Product
  - Raw Material Composition
- Tracking composition
  - Combination of Substances and Raw Materials that needs to be monitored for compliance determination
    - Substances
    - Raw materials covered by suppliers
- Registrations per Manufacturer / Importer
  - Company Registrations
  - Supplier Provided Coverage

Calculate collective positive status per product and track global volume to remain below the listed threshold or flag transaction for regulatory review



#### Future Business Allocation / Reservation

- Must have the ability to reserve projected volume
  - Manage forecast \ reservation centrally at product level
  - Automatically allocate to substance
  - Reflect impact on YTD volume
- Incorporate with reporting
- Incorporate with Warnings and Alerts
- Provide a realtime impact assessment

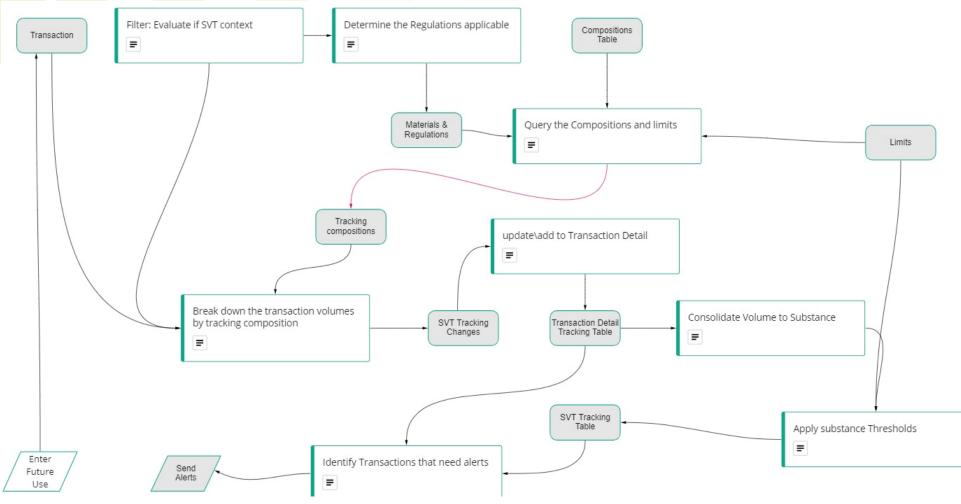


#### **Data Synchronization**

- Automated data refresh
  - Collect and rationalize and transform the various source system in the Data Lake
- 2. Update Compositions
  - Update the relevant compositions based on formulation changes
- 3. Update transactions
  - Update changed transactions and import new transactions
- 4. Composition synchronization
  - Identify all the new changed Products, Raw materials, Intermediates and Substances
  - Update the connected materials (where used)
  - Recalculate the Tracking compositions
- 5. Regulation update
  - Identify Substances and Raw materials impacted by regulatory update
  - Update the connected materials (where used)
  - Recalculate the Tracking compositions
- 6. Recalculate the tracking compositions
  - · Apply the updates to the tracking composition to allow accurate alerts, warnings and reporting



#### **Data Synchronization**



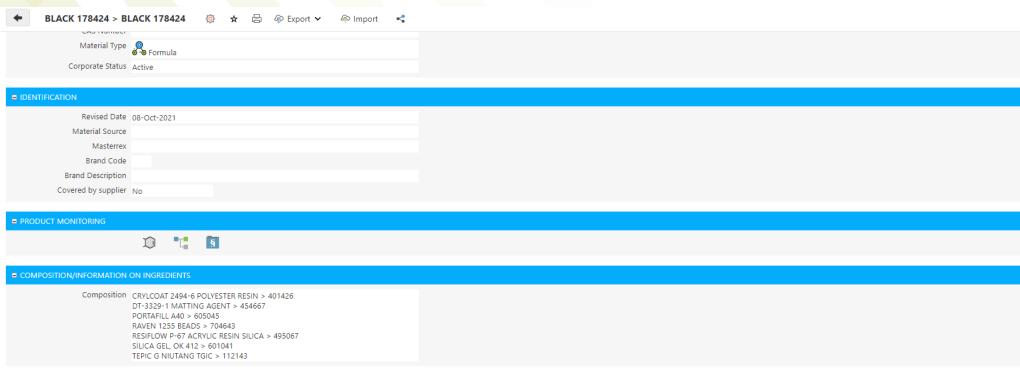


#### Materials - Search

Д С	HEM	ICALS	/PRO	ODUCTS &	★ 🖨 🖗 Import					▽ Search
				MATERIAL NO.	material name 💂	CAS NUMBER	MATERIAL TYPE	CORPORATE STATUS	REVISED DATE	IDENTIFICATION - MASTERREX
	<b>③</b>		•••	BLACK VOC AT THE GUN	AMERICAN MFG BLACK VOC CALCULATION AT TH		¥	Active	31-Jan-2019	Û
	<b>③</b>		•••	BLACK 174468	BLACK 174468			Active	14-Oct-2021	D
	<b>③</b>		•••	BLACK 177748	BLACK 177748		<u></u>	Active	22-Oct-2021	D
	<b>③</b>		•••	BLACK 178421	BLACK 178421		<u>0</u> -	Active	24-Nov-2021	$\mathfrak{O}$
	<b>③</b>		•••	BLACK 178424	BLACK 178424		. <u></u>	Active	08-Oct-2021	D
	<b>③</b>		•••	BLACK 182946	BLACK 182946		. <u>O</u> . Ø -	Active	22-Oct-2021	D
	<b>③</b>		•••	BLACK 185913	BLACK 185913		<u>O</u> .	Active	24-Nov-2021	D
	<b>③</b>		•••	BLACK 188201	BLACK 188201			Active	25-Feb-2022	D
	<b>③</b>		•••	BLACK DOOSAN	BLACK DOOSAN			Active	09-Sep-2019	$\mathfrak{Q}$



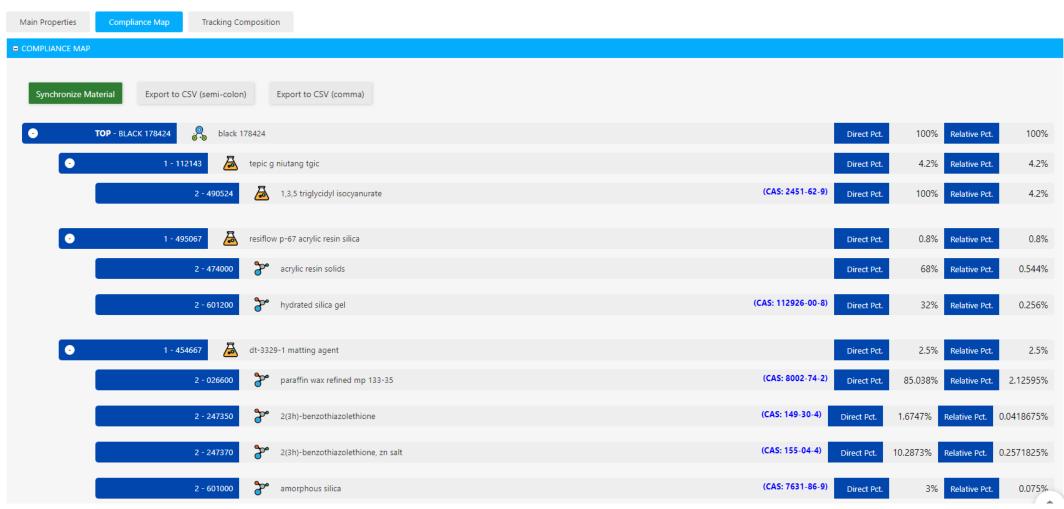
#### **Materials – Header Data**



SUBSTANCE COMPOSITION														
Name	Reference	CAS Number	Туре	Mat. Type	Weight %	Path								
TEPIC G NIUTANG TGIC	112143		% Weight	Raw Material		112143								
CRYLCOAT 2494-6 POLYESTER RESIN	401426		% Weight	Raw Material		401426								
DT-3329-1 MATTING AGENT	454667		% Weight	Raw Material		·454667								
RESIFLOW P-67 ACRYLIC RESIN SILICA	495067		% Weight	Raw Material		~495067								
SILICA GEL, OK 412	601041		% Weight	Raw Material		~601041								
PORTAFILL A40	605045		% Weight	Raw Material		-605045								
RAVEN 1255 BEADS	704643		% Weight	Raw Material		704643								

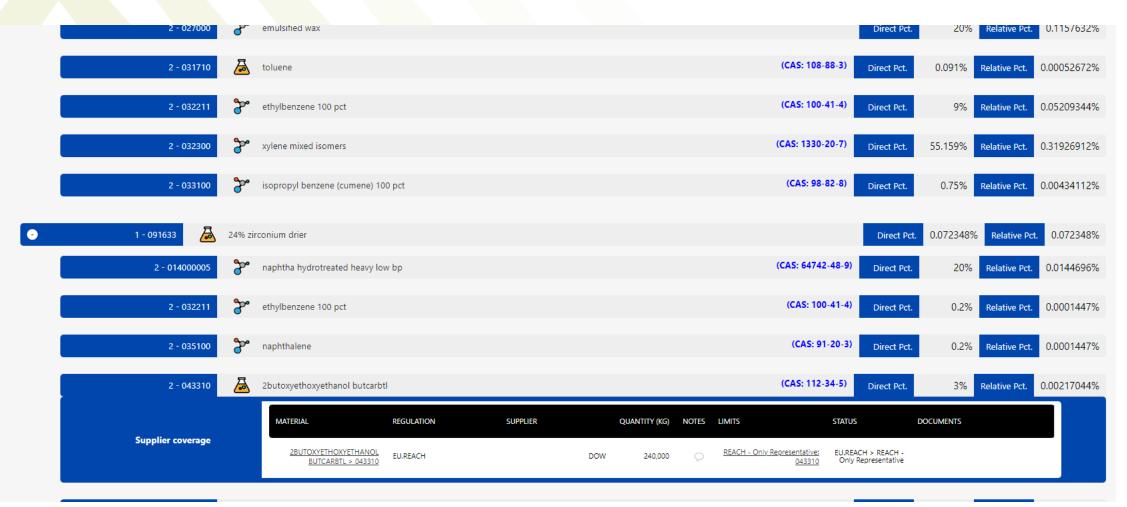


#### Materials - Compliance Map



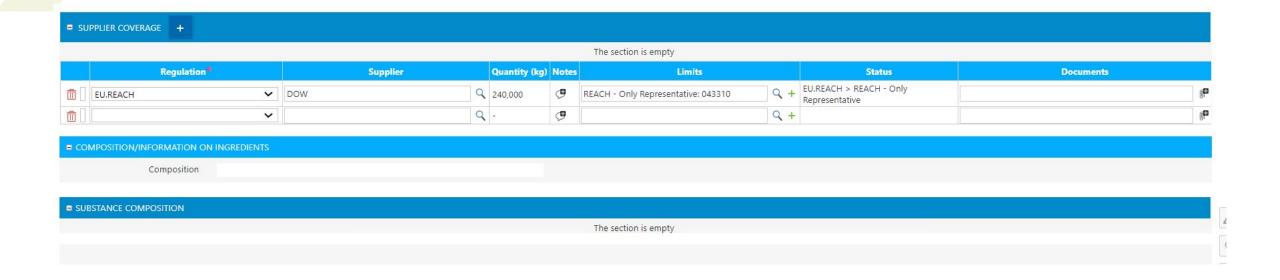


#### Materials – Supplier Coverage

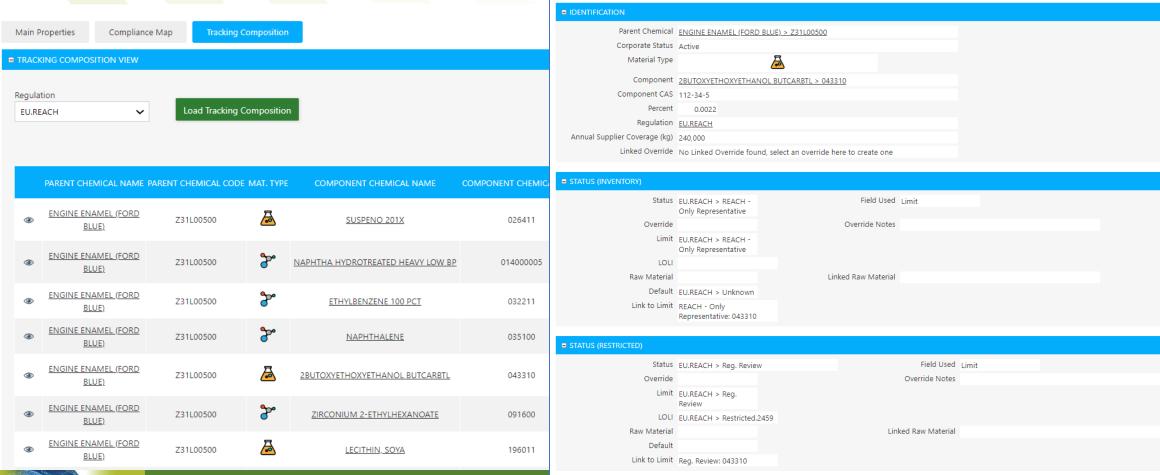




#### Materials - Supplier coverage



#### Materials - Tracking & Compliance





#### **Transactions**

			PRODUCT NAME	PRODUCT CODE	TRANSACTION TYPE	TRANSACTION STATUS	TRANSACTION DATE		INVOICE
			(FORD BLUE)			,		2021	
<b>③</b>	<u>/*</u>	•••	ENGINE ENAMEL (FORD BLUE)	Z31L00500	Standard order	Standard invoiced and ready	25-Nov-2020	25-Nov- 2020	9331615
<b>③</b>		•••	ENGINE ENAMEL (FORD BLUE)	Z31L00500	Standard order	Standard invoiced and ready	21-Jun-2021	21-Jun-2021	9348624
<b>③</b>	<u>/*</u>	•••	ENGINE ENAMEL (FORD BLUE)	Z31L00500	Standard order	Standard invoiced and ready	05-Jun-2020	05-Jun-2020	9331358
<b>③</b>	<u>/*</u>	•••	ENGINE ENAMEL (FORD BLUE)	Z31L00500	Standard order	Standard invoiced and ready	12-Aug-2020	12-Aug- 2020	9331074
<b>③</b>	<u>/*</u>	•••	ENGINE ENAMEL (FORD BLUE)	Z31L00500	Standard order	Standard invoiced and ready	16-Oct-2020	16-Oct-2020	9338409
<b>③</b>	<u>/*</u>	•••	ENGINE ENAMEL (FORD BLUE)	Z31L00500	Standard order	Standard invoiced and ready	01-Dec-2020	01-Dec-2020	9341901
<b>③</b>	<u>/*</u>	•••	ENGINE ENAMEL (FORD BLUE)	Z31L00500	Standard order	Standard invoiced and ready	17-Feb-2021	17-Feb-2021	9353335
<b>③</b>		•••	ENGINE ENAMEL (FORD BLUE)	Z31L00500	Standard order	Manually Voided	02-Aug-2021	02-Aug- 2021	
<b>③</b>	/		ENGINE ENAMEL (FORD BLUE)	Z31L00500	Standard order	Standard invoiced and ready	26-Feb-2021	26-Feb-2021	9350921
<b>③</b>	/	•••	ENGINE ENAMEL (FORD BLUE)	Z31L00500	Standard order	Not reserved	02-Aug-2021	02-Aug- 2021	

SVT	
Tracking Entity	SHW.AU.XX.CUS - Sherwin-Williams Sales to Australia
Regulation	AU.AICS
Processing Status	Relevant
Using Final Destination ?	
Ship From	EFFINGHAM, IL DSC
Ship From Second Axis Entity	SHW.US
Ship From Second Axis Type	INTERNAL
Ship From Country (Geo Link)	
Ship To	MMP INDUSTRIAL
Ship To Second Axis Entity	SHW.AU
Ship To Second Axis Type	EXTERNAL
Ship To Reporting Entity	EXTERNAL
Future Transaction	
Ship To Second Axis Entity (Fi	
Ship To Second Axis Type (Fina	
SHIPPING ADDRESSES	
Ship From Name	THE SHERWIN WILLIAMS CO. 11
Ship From Addr 1	711 WEST WABASH
Ship From Addr 2	BUILDING A
Ship From City	EFFINGHAM
Ship From State	IL
Ship From Zip	62401
Ship From Country	USA
Final Dest Name	MMP INDUSTRIAL
Final Dest Addr 1	
Final Dest Addr 2	
Final Dest City	MULGRAVE NSW
Final Dest State	
Final Dest Zip	



#### **Transactions - Forecast**

								■ RECORD INFO
		TRANSACTION REFERENCE	TRANSACTION DATE	MATERIAL	PROJECTED VOLUME	VOLUME UNIT	TRACKING ENTITY	Transaction Reference 990000003
<b>③</b>	/	 99000001	01-Feb-2022	119-24 CRYSTAL CLEAR > Z03100070	1,500 kg (Remaining: 800 kg, # of Transactions: 1, Planned: 0 kg, Confirmed: 700 kg)	kg	SHW.EU.US.INT - Shewin- Williams from US Intercompany to EU	Status New Transaction Date 20-May-2022  Material MIL-DTL-24441D T4 F150 PART B > N10V00450
<b>③</b>	/	 99000002	20-May-2022	MIL-DTL- 24441D T4 F150 GREEN P > N10G00450	1,497 kg (Remaining: 1,497 kg, # of Transactions: 0, Planned: 0 kg, Confirmed: 0 kg)	kg	SHW.EU.US.INT - Shewin- Williams from US Intercompany to EU	Projected Volume 1,498 kg (Remaining: 1,498 kg, # of Transactions: 0, Planned: 0 kg, Confirmed: 0 kg)  Volume Unit kg
3	/	 99000003	20-May-2022	MIL-DTL- 24441D T4 F150 PART B > N10V00450	1,498 kg (Remaining: 1,498 kg, # of Transactions: 0, Planned: 0 kg, Confirmed: 0 kg)	kg	SHW.EU.US.INT - Shewin- Williams from US Intercompany to EU	Tracking Entity Tracking Entity Regulation Processing Status  SHW.EU.US.INT - Shewin-Williams from US Intercompany to EU EU.REACH Relevant
<b>③</b>	/	 99000004	20-May-2022	MIL-DTL- 24441D TY4 F- 152, WHIT > N10WB0452	2,924 kg (Remaining: 2,924 kg, # of Transactions: 0, Planned: 0 kg, Confirmed: 0 kg)	kg	SHW.EU.US.INT - Shewin- Williams from US Intercompany to EU	Ship From Entity SHW.US  Ship From Type INTERNAL  Ship To Entity SHW.EU  Ship To Type INTERNAL
3	/	 99000005	20-May-2022	MIL-DTL- 24441D T4 F151 HARD. > N10V00451	2,814 kg (Remaining: 2,814 kg, # of Transactions: 0, Planned: 0 kg, Confirmed: 0 kg)	kg	SHW.EU.US.INT - Shewin- Williams from US Intercompany to EU	Business Contact Mallery Navis Business Notes Documents



#### Reports Material Coverage

Regulation: EU.REACH

Reporting Period: 01/01/2022 to 31/12/2022

Component Name	Component No.	Component CAS No.	Tracking Entity	Ship From Entity	Regulatory Status (Inventory)	Regulatory Status (Restricted)	Material Type	Σ Projected Qty [kg]	Σ Planned Qty [kg]	Σ Confirmed Qty [kg]	YTD Usage Qty [kg]	Substance Comp. Qty [kg]	YTD % Usage
SOLSPERSE 5000 5000S	244805		SHW.EU.US	SHW.US	EU.REACH > REACH - Only Representative		Raw Material	0	51.35	2.39	53.74	5,000	1.07%
METHYL ACETATE HP	120113	79-20-9	SHW.EU.US	SHW.US	EU.REACH > REACH - Registration	EU.REACH > Restricted.2459	Raw Material	0	13.39	226.53	239.91	10,000	2.4%
ALUMINUM HYDROXIDE	605000001	21645-51-2	SHW.EU.US	SHW.US	EU.REACH > Unknown		Substance	0	848.91	595.6	1,444.51	0	1,544.51%
ALUMINUM HYDROXIDE	605000001	21645-51-2	SHW.EU.US	SHW.US	EU.REACH > Unknown	EU.REACH > Reg. Review	Substance	6.57	30.81	313	350.39	Unlimited	-
EMULSIFIED WAX	027000		SHW.EU.US	SHW.US	EU.REACH > Unknown		Substance	0	0.28	7.52	7.8	0	107.8%
ZIRCONIUM 2-ETHYLHEXANOATE	091600	22464-99-9	SHW.EU.US	SHW.US	EU.REACH > Unknown		Substance	0	0.42	1.26	1.68	0	101.68%
ZIRCONIUM 2-ETHYLHEXANOATE	091600	22464-99-9	SHW.EU.US	SHW.US	EU.REACH > Unknown	EU.REACH > Reg. Review	Substance	0	4.07	11.99	16.06	Unlimited	-
MINERAL SPIRITS	014510	64742-47-8	SHW.EU.US	SHW.US	EU.REACH > Unknown	EU.REACH > Reg. Review	Raw Material	0	835.23	1,233.18	2,068.41	Unlimited	-
ISOBUTYL ACETATE 100%	122410	110-19-0	SHW.EU.US	SHW.US	EU.REACH > Unknown		Substance	0	0	1.3	1.3	0	101.3%
ISOBUTYL ACETATE 100%	122410	110-19-0	SHW.EU.US	SHW.US	EU.REACH > Unknown	EU.REACH > Reg. Review	Substance	0	2.96	453.9	456.87	Unlimited	-
FATTY ACID, C14-C18 & C16-C18 UNSAT	068000002	85711-47-3	SHW.EU.US	SHW.US	EU.REACH > Unknown		Substance	0	0.03	0.05	0.09	0	100.0996
PG MONOMETHYL ETHER ACETATE	123000001	108-65-6	SHW.EU.US	SHW.US	EU.REACH > REACH - Registration		Substance	1.69	0.01	1.62	3.32	100,000	096
PG MONOMETHYL ETHER ACETATE	123000001	108-65-6	SHW.EU.US	SHW.US	EU.REACH > REACH - Registration	EU.REACH > Reg. Review	Substance	0	5,675.94	895.81	6,571.76	100,000	6.57%
TITANIUM DIOXIDE SOLIDS	660000	13463-67-7	SHW.EU.US	SHW.US	EU.REACH > REACH - Registration	EU.REACH > Restricted.2459	Substance	118.29	19,510.71	30,150.97	49,779.98	1,000,000	4.98%
METHYL ETHYL KETOXIME	195010	96-29-7	SHW.EU.US	SHW.US	EU.REACH > Unknown	EU.REACH > Reg. Review	Raw Material	1.42	6.44	18.88	26.74	Unlimited	
SETYRENE 13-3513	363224		SHW.EU.US	SHW.US	EU.REACH > REACH - Only Representative		Raw Material	116.7	1.13	102.11	219.94	5,000	4.4%
C.I. PIGMENT BLUE 15:2	771000001	12239-87-1	SHW.EU.US	SHW.US	EU.REACH > Unknown		Substance	0	0	0	0	0	0%
PHTHALOCYANINE BLUE	771000003	68987-63-3	SHW.EU.US	SHW.US	EU.REACH > Unknown		Substance	0	0	4.01	4.01	0	104.01^~
N-BUTYL ACETATE	122330	123-86-4	SHW.EU.US	SHW.US	EU.REACH > REACH - Registration	EU.REACH > Reg. Review	Raw Material	1.55	3,688.14	1,910.4	5,600.09	1,000,000	56% B°
POLYLIRETHANE FOR 8360344	490600011		SHW.EU.US	SHW.US	EU.REACH > Unknown		Substance	0	5.9	1.69	7.59	0	159%
Cancel Refresh Save	Save as	Clear	W.EU.US	SHW.US	EU.REACH > Unknown		Substance	3.17	93.64	54.13	150.94	0	250.94%

#### Reports – Supplier Coverage

OR Name	Requesting BU	Limit Type	Valid From Year	Reg. Number	Compliance Type	Compliance Source Country	Compliance Route	Unique Iden. #	Auth. Certficate #	Planned Qty [kg]	Confirmed Qty [kg]	YTD Usage Qty [kg]	Supplier Coverage Qty [kg]	Total Supplier Qty [kg]	Usage %	Regulatory status
Chemservice	Coil	Only Representative	2021		Indirect 3rd party agreement	United States of America	OR Coverage			11.4185	13.6589	25.0774	20,000	20,000	0.13%	EU.REACH > REACH - Only Representative
Chemservice	GI, FOOD, 2PC, BEV End, GP	Only Representative	2021		Indirect 3rd party agreement	United States of America	OR Coverage			10.3194	550.5973	560.9167	12,500	12,500	4.49%	EU.REACH > REACH - Only Representative
Chemservice	PACKAGING	Only Representative	2021		Indirect 3rd party agreement	United States of America	Downstream User			0.012	0.0068	0.0189	240,000	240,000	096	EU.REACH > REACH - Only Representative
Chemservice	GP, Food, T &M	Only Representative	2021		Indirect 3rd party agreement	United States of America	OR Coverage			7.4484	39.3124	46.7607	240,000	240,000	0.02%	EU.REACH > REACH - Only Representative
Chemservice	GP, GI, Bev End, Food	Only Representative	2021		Indirect 3rd party agreement	United States of America	OR Coverage			82.9669	1,707.3711	1,790.338	52,000	52,000	3.44%	EU.REACH > REACH - Only Representative
Chemservice		Only Representative	2021		Indirect 3rd party agreement	United States of America	OR Coverage			672.6285	2,077.3655	2,749.994	2,500	2,500	110%	EU.REACH > REACH - Only Representative
Chemservice	Bev End	Only Representative	2021		Indirect 3rd party agreement	United States of America	OR Coverage			0	0	0	2,000	2,000	0%	EU.REACH > REACH - Only Representative
Chemservice	2 PC, Bev End, Food	Only Representative	2021		Indirect 3rd party agreement	United States of America	OR Coverage			0.0004	0.0062	0.0066	4,000	4,000	096	EU.REACH > REACH - Only Representative
Chemservice	2PC, Bev End, In House Resin	Only Representative	2021		Indirect 3rd party agreement	United States of America	OR Coverage			0.0064	0.0212	0.0276	150,000	150,000	096	EU.REACH > REACH - Only Representative
Chemservice	Automotive	Only Representative	2021		Indirect 3rd party agreement	United States of America	OR Coverage			0	0.0069	0.0069	1,100	1,100	0%	EU.REACH > REACH - Only Representative
Chemservice	Consumer, EPS, 2PC	Only Representative	2021		Indirect 3rd party agreement	United States of America	OR Coverage			0	0.1948	0.1948	702,000	702,000	0%	EU.REACH > REACH - Only Representative
Chemservice		Only Representative	2021		Indirect 3rd party agreement	United States of America	OR Coverage			0.0028	0.0162	0.0189	2,000	2,000	0%	EU.REACH > REACH - Only Representative
Chemservice	EPS, Coil	Only	2021		Indirect 3rd	United	OR									



## This was a snapshot If you want to see more Stop by



#### Questions





### Thank you

Steve Smith Steve.Smith@ERM.COM