DEPARTMENT OF ENVIRONMENTAL QUALITY AIR QUALITY DIVISION ACTIVITY REPORT: On-site Inspection

FACILITY: MOLDED PLASTIC INDUSTRIES, INC.		SRN / ID: N0034
LOCATION: 2382 JARCO DR, HOLT		DISTRICT: Lansing
CITY: HOLT		COUNTY: INGHAM
CONTACT: John Mason, EHS Director		ACTIVITY DATE: 01/04/2024
STAFF: Michelle Luplow	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: Compliance inspection to de	etermine compliance with PTI 131-22 and MI-ROP-N	N0034-2019
RESOLVED COMPLAINTS:		

Inspected by: Michelle Luplow (author), and Autumn Cole (AQD LDO)

Personnel Present: Mike Metzger

Lisa Huey, Production Manager

Other Personnel: John Mason, EHS Director (jmason@nationalcomposites.com)

Purpose

Conduct an unannounced, scheduled, onsite partial compliance evaluation (PCE) inspection of Molded Plastics Industries (MPI), as part of a full compliance evaluation (FCE). The inspection was conducted to determine compliance with MI-ROP-N0034-2019 and PTI 131-22.

Facility Background/Regulatory Overview

MPI manufactures fiberglass reinforced products (FRP), such as diving board bases, fan shrouds, healthcare applications, and front ends for fire trucks and school buses. MPI is comprised of 2 buildings located adjacent to each other and therefore considered part of the same stationary source: 2382 Jarco Drive and 2345 Jarco Drive.

PTI 131-22 was issued in September 2022 for 2 gelcoat booths, a manual application gelcoat/resin booth, and resin transfer molding operations. Two new gelcoat boots (EU-EXPRS2 & EU-EXPGEL2) will be installed at 2382 Jarco Drive, joining existing gelcoat booth EU-SPRAYBOOTHGL1 at that address. A new flexible group, FG-GELCOAT, will contain all three gelcoat booths. FG-GELCOAT will contain the existing material and emission limits currently permitted for EU-SPRAYBOOTHGL1.

Existing flexible group FG-MOLDRELEASE will be changed to emission unit EU-MISC2382 and continues to cover mold releases, mold cleaning compounds, repair compounds, cleaning solvents and acetone used at 2382 Jarco Drive for open molding and gelcoat operations.

At 2345 Jarco Drive a work area where gelcoats and resins are applied will be permitted as EU-MANUAL. Operations in EU-MANUAL also include clean-up solvents, mold releases, repair compounds and one acetone recycling system. Resin transfer molding operations will also be permitted as EU-XRTM at 2345 Jarco Drive.

At the time of inspection, EU-EXPRS2, EU-EXPGEL2, EU-MANUAL, and EU-XRTM, permitted under PTI 131-22, had not yet been installed.

Styrene and ethyl benzene-containing materials (HAPs) are used in all of the production processes, with the exception of the gelcoat processes (gelcoats are not resin-based). Production is resin-based and styrene and ethyl benzene are components of the resin.

Compliance Status

MPI is being cited for 3 violations:

- Waste containers are open to the atmosphere (see discussion under EU-SPRAYBOOTHGL1, EU-SPRAYBOOTHRS1 and EU-MISC2382)
- VOC 12-month rolling Emission Limits have been exceeded in EU-SPRAYBOOTHRS1 and EU-MISC2382.

Inspection

On January 4, 2024, Autumn Cole and I met with Mike Metzger and Lisa Huey, Production Manager, to conduct an inspection of the facility.

M. Metzger said MPI currently operates 1 shift, 6 a.m. - 2:30 p.m., 5 days per week.

Table 1 contains a list of all equipment present onsite, based on my inspection of the facility. M. Metzger confirmed that there are no emergency generators or boilers located at the facility at this time.

Emission Unit	Process Description	Control	Installation Status	PTI/Exemption	Federal Regs
EU- SPRAYBOOTHGL1 (FGGELCOAT)	Spray booth for application of gelcoat on open molds (2382 Jarco)	Fabric overspray Filters	Installed	MI-ROP-N0034-2019	MACT WWWW
EU-EXPRS2 (FGGELCOAT)	Spray booth of gelcoat on open molds (2382 Jarco)	Fabric overspray Filters	Not installed	PTI 131-22	MACT WWWW
EU-EXPGEL2 (FGGELCOAT)	Spray booth for application of gelcoat on open molds (2382 Jarco)	Fabric overspray Filters	Not installed	PTI 131-22	MACT WWWW
EU-MISC2382 – 2382 Jarco Drive	Mold releases, mold cleaning compounds, repair compounds, cleaning solvents and acetone used at 2382 Jarco for open molding and gelcoat operations (in EUSPRAYBOOTHGL1, EU-EXPRS2, EUEXPGEL2, EUSPRAYBOOTHRS1)	NA	Installed	MI-ROP-N0034-2019	MACT WWWW

Table 1. MPI Equipment

EU- SPRAYBOOTHRS1	Spray booth for application of resin on molds	Fabric overspray Filters	Installed	MI-ROP-N0034- 2019/PTI 131-22	MACT WWWW
EU-PAINTBOOTH	Spray booth and oven for application of paints on molded parts	Fabric overspray Filters	Installed	MI-ROP-N0034-2019	MACT PPPP/ Rule 287(2)(c)
EU-GERREF OVEN	1.2 MMBtu/hr natural gas -fired oven	NA	Installed, moved to Plant 2 (2345 Jarco Dr)	MI-ROP-N0034-2019	MACT DDDDD
EU-DUKESOVEN	0.8 MMBtu/hr natural gas -fired oven	NA	Removed from site	MI-ROP-N0034-2019	MACT DDDDD
EU-MANUAL – 2345 Jarco Drive	Gelcoats and resins are hand-applied, includes cleanup solvents, mold releases, repair compounds and one acetone recycling system	NA	Not installed	PTI 131-22	MACT WWWW
EU-XRTM – 2345 Jarco Drive	Resin Transfer Molding operations (2345 Jarco). Closed molded, includes use of resin and catalyst	NA	Not installed	PTI 131-22	MACT WWWW
FGCOLDCLEANERS	Model 1055 Auto Paint Spray Gun & Equip Parts Washer	NA		MI-ROP-N0034-2019	NA
	Tag No 0001055SK11019327				
	Existing prior to 1/1/2020				

FGCOLDCLEANERS	Model 30 Solvent Parts Washer	NA	MI-ROP-N0034-2019	NA
	Tag No 00001140SK14114347			
	Existing prior to 1/1/2020			

FG-GELCOAT (PTI 131-22)

FG-GELCOAT is comprised of EU-SPRAYBOOTHGL1 (a spray booth used to apply gelcoats on open molds,), EU-EXPRS2, and EU-EXPGEL2. All 3 booths are to be located at 2382 Jarco Drive. EUSPRAYBOOTHGL1 is currently installed and operating. The other 2 booths have not yet been installed.

There are no Testing/Sampling requirements for this flexible group at this time.

Emission Limits, Material Limits & Monitoring/Recordkeeping

VOC's from these 3 booths combined are limited to 12.6 tpy on a 12-month rolling time period basis, as determined at the end of each calendar month. To determine compliance with this limit, MPI is required to keep a current listing from the manufacturer of the chemical composition of each material, including the weight percent of each component, and the following records on a monthly basis: identity and amount (in pounds) of each gelcoat used; the VOC content of each material used; the appropriate emission factors for each raw material used (from UEF Table 1 for Open Molding of Composites from the American Composites Manufacturers Association, UEF-1-2011a) or other emission factor approved by the AQD District Supervisor; and the VOC mass emission calculations to determine the VOC monthly and 12-month rolling emission rates in tons. Records were requested from January 2022 – November 2023.

Because EU-EXPRS2 and EU-EXPGEL2 were not yet installed at the time of the inspection, all emissions and records are associated with EU-SPRAYBOOTHGL1 only.

I reviewed GLC's records from January 2022 – November 2023 and spot-checked the SDS for some of these gelcoats that GLC uses (see Table 2 for the evaluation of these gelcoats with respect to styrene and MMA contents). The SDS for these gelcoats were reviewed in detail to ensure all appropriate styrene and MMA contents were included in the calculation spreadsheets. All other gelcoats were reviewed based solely on the datasheet entry provided by the company.

Material	VOC Content (wt%)	Gelcoat Styrene Content (wt%)	Gelcoat MMA Content (wt%)	Comments
654379 Classic Yellow Gel	34.0	24.0	10%	Via SDS

Table 2. FGGELCOAT Materials and Associated Styrene & MMA contents

651038 Black Sanding Gelcoat	35.25	60* 35.25**	NA	*SDS lists a max styrene content of 60% ** from C of A dated 11/19/19
645862 Old Yellow Gel	35.33	24.33	10	Via SDS
599226 Black Barrier Coat	31.89	31.89	NA	Via SDS
575515 GE Gelcoat	40.44	38.44	NA	Via SDS

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The highest VOC (including styrene and MMA) emissions during the period of January 2022 – November 2023, was 3.07 tons for the 12-month rolling period of March 2022 – February 2023, in compliance with the 12.5 tpy limit.

Gelcoats have maximum styrene and MMA contents. Table 2 includes the styrene and MMA contents of a snapshot of gelcoats used at MPI. Tooling gelcoats are limited to 45.0% styrene and 0% MMA; Production-type Gelcoats are limited to 39.0% styrene and 10.0% MMA. Based on the review of the 5 gelcoats listed in Table 3, MPI appears to be meeting the gelcoat content limits for styrene and MMA. I will, however, be requesting that MPI provide a more recent Certificate of Analysis (CoA) for the 651038 Black Sanding Gelcoat because the most recent ones provided are from 2019 and 2020. Also needs to ensure that the VOC contents are listed on the data sheets. If they are not, you need to submit additional documentation.

Process/Operational Restrictions & Design/Equipment Parameters

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All waste gelcoats and solvents used in FGGELCOAT; all waste resins, catalysts, mold releases, and solvents used in EU-SPRAYBOOTHRS1; and all waste materials from EU-MISC2382 are required to be stored in closed containers and disposed of in a manner in compliance with all state rules and federal regulations. MPI has an outdoor shed that they use to store waste materials. While onsite, I documented via photographs, that there were multiple unlabeled waste buckets with waste materials in them, open to atmosphere (uncovered). There was also a labeled, large tote of waste material with the bung open to atmosphere. MPI staff presumed the waste materials in these buckets were waste oils; however, the buckets were unlabeled. After the inspection I forwarded the photos and discussed with Materials Management Division's (MMD) Bryan Grochowski. The AQD will be sending a violation notice to address waste buckets and totes being uncovered. These waste buckets were not in use during the inspection. MMD will be copied on the Violation Notice.

Filters are required to be installed, maintained, and operated in a satisfactory manner. I was told during the inspection that the booth exhaust filters are changed out once per week. Filters were found not to be installed properly: gaps between the filter and the booth exhaust. I pointed this out to staff on-site. Filters were fixed prior to leaving the facility. If filters are not installed properly at a future inspection, a violation notice may be issued to address this improper installations.

Reporting

All required reporting has been submitted by the timelines specified in the ROP.

Stack/Vent Restrictions

The minimum stack height for EU-SPRAYBOOTHGL1 is 27'. Using the AQD-issued Nikon Forestry Pro II Rangefinder, I determined that the stack height from ground level is 38.5' and therefore is in compliance with the minimum stack height.

EU-SPRAYBOOTHRS1

EU-SRPAYBOOTHRS1 is a spray booth for the application of resin (styrene-containing material) onto molds. This emission unit is subject to the MACT WWWW.

There are no Testing/Sampling requirements at this time.

Emission Limits, Material Limits, Monitoring/Recordkeeping

MPI is limited to 15.4 tons of VOC per 12-month rolling time period and the styrene content of all resins used shall not exceed 39.0% by weight. The following records are required to be kept: identity and amount of each resin and catalyst used (lbs); the styrene and VOC contents of each resin and catalyst used; the appropriate emission factor for each raw material from the October 2011 Unified Emission Factors (UEF) Table 1 for styrene, and VOC mass emission calculations on a monthly and 12-month rolling basis.

I requested records for January 2022 – November 2023, and requested SDS for the 10 most-used resins and catalysts. J. Mason failed to provide SDS for 2 of the most-used resins and therefore the AQD conducted internet research to find the SDS for these 2 resins (647570 AOC H884-IVA-20 Resin and 595838 AOC DX C431-JKA-12 Resin) and confirmed the styrene and VOC contents listed in these SDS were also the same contents used in the VOC calculations.

Attached are the monthly and 12-month rolling VOC emission calculation records from January 2022 – November 2023. During review of these records, it was noted that the monthly VOC emissions were incorrectly reported in MPI's "Compliance" tab of the workbook: EU-SPRAYBOOTHGL1 monthly VOC emissions were entered from January 2022 – November 2023 for EU-SPRAYBOOTHRS1 VOC emissions. The AQD corrected the records using the correctly calculated monthly VOC emissions present on the "EU-SPRAYBOOTHRS1" workbook tab. To note is that the monthly VOC emissions reported in the "EU-SPRAYBOOTHRS1" tab have units labeled in pounds; however, the spreadsheet calculations clearly show that lbs have been converted to tons, and therefore the monthly emissions are actually reported in tons, not lbs. Based on my review of records and the my recalculations of the 12-month rolling records based on correct monthly VOC emission inputs, MPI appears to be out of compliance with the 15.4 ton per 12-month rolling limit for 21 of the 23 months of records reviewed. Emission Limits are exceeded, as outlined in Table 3.

A Violation Notice will be issued to address non-compliance with the Emission Limits.

12-month Rolling Period	VOC emissions (tons)	Limit (tons per 12-month rolling period)
April 2021 – March 2022	16.8	15.4
May 2021 – April 2022	18.5	
June 2021 – May 2022	26.1	
July 2021 – June 2022	30.8	

Table 3. VOC Emission Limit Exceedances.

August 2021 – July 2022	31.4	
September 2021 – August 2022	35.4	
October 2021 – September 2022	35.4	
November 2021 – October 2022	35.3	
December 2021 – November 2022	39.0	
January 2022 – December 2022	43.0	
February 2022 – January 2023	56.8	
March 2022 – February 2023	61.1	
April 2022 – March 2023	58.2	
May 2022 – April 2023	62.3	
June 2022 – May 2023	64.2	
July 2022 – June 2023	63.7	
August 2022 – July 2023	67.3	
September 2022 – August 2023	69.1	
October 2022 – September 2023	74.0	
November 2022 – October 2023	76.1	
December 2022 – November 2023	78.1	

VOC contents and styrene contents were verified using the SDS and/or spreadsheets provided (see Table 4), including verification that these values are contained in the emission calculation spreadsheets. Table 4 contains a list of materials that are used in this emission unit, their styrene contents, and VOC contents.

Of note is that the 575540 GE Resin, according to its SDS, has a styrene content of 30 – 40%. The AQD always takes a conservative approach to content ranges and uses the highest content percentage when determining compliance. According to the SDS, the styrene content is out of compliance with the styrene content limit of 39.0% by weight. J. Mason provided an email from the supplier of this material, stating that the average styrene content for this material is 36%. The AQD does not allow averaging to be used for demonstration of compliance

with Material Limits. According to the 2022 and 2023 records provided, MPI did not use the 575540 GE Resin during these 2 years. I have informed J. Mason that if MPI plans to use this resin in the future, they will need to apply for a permit modification to allow for styrene contents with greater than 39.0% OR they must provide more definitive documentation that the maximum styrene content is no more than 39.0%. Without doing one of these two recommendations, MPI will be out of compliance with their Material Limits and likely be issued a violation notice for exceeding the styrene content limit.

Material	VOC Content (wt%)	Styrene Content (wt%)	Comments
647570 AOC H884-IVA-20 Resin	32.0	32.0	Styrene & VOC content via SDS
595838 AOC DX C431-JKA- 12 resin	37.1	37.1	Styrene content via SDS, VOC content via MPI spreadsheet
23173DD M Red Catalyst	2	NA	Styrene content via SDS, VOC content via MPI spreadsheet
82036A Trigonox Catalyst**	45	NA	Styrene content via SDS, VOC content via MPI spreadsheet
203443 Dion FR 7704-00	3.28 lb/gal (394 g/l)	27.7	Styrene & VOC content via SDS
531232 Spray Up**	33	33	Styrene & VOC content via SDS
575540 GE Resin**	41.0	40	Styrene & VOC content via SDS

Table 4. EU-SPRAYBOOTHRS1 Materials and Associated Styrene and VOC contents

**Note that those resins/catalysts that are asterisked in Table 3 were not used in 2022 and 2023 according to the records provided by MPI.

Process/Operational Restrictions

All waste materials are required to be stored in closed containers and disposed of in a manner in compliance with all state rules and federal regulations. As stated under FG-GELCOAT, the AQD will be sending a violation notice to address waste buckets and totes being uncovered and unidentifiable (lack of labels).

Reporting

All required reporting has been submitted by the timelines specified in the ROP.

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EU-MISC2382 (PTI 131-22)

EU-MISC2382, permitted under PTI 131-22, replaces the flexible group, FG-MOLDRELEASE, currently present in MI-ROP-N0034-2019. EU-MISC2382 includes all mold releases, mold cleaning compounds, repair compounds, cleaning solvents and acetone used at 2382 Jarco Drive for open molding and gelcoat operations. Some solvents used in EU-MISC2382 may be subject to the MACT Subpart WWWW, and therefore EU-MISC2382 is part of flexible group FGMACTWWWW.

There are no Material Limits, Design/Equipment Parameters, Testing/Sampling, Reporting, or Stack/Vent Restriction at this time.

Emission Limits & Monitoring/Recordkeeping

MPI is limited to 16.2 tons of Acetone (CAS# 67-64-1) and 4.1 tons of VOC, both per 12-month-rolling time period and is required to keep records on a monthly basis for the following: identity and amount (in lbs) of each mold release, mold cleaner, repair compound, and cleaning solvent used; the VOC and acetone contents of each material used; and the monthly and 12-month rolling basis emissions for acetone and VOC. Data sheets are required to be used and provided to the AQD for VOC and acetone content determinations.

The aforementioned records were requested for January 2022 – November 2023. The monthly and 12-month rolling records were reviewed. The highest VOC emissions were 9.9 tons from September 2021 – August 2022 and the highest Acetone emissions were 9.2 tons from June 2021 - May 2022. Based on review of the records, MPI is out of compliance with the VOC Emission Limits, as defined in Table 5. A Violation Notice will be issued to address these instances of non-compliance.

12-month Rolling Period	VOC emissions (tons)	Limit (tons per 12-month rolling period)
February 2021 – January 2022	9.0	4.1
March 2021 -February 2022	9.4	
April 2021 – March 2022	9.6	
May 2021 – April 2022	9.6	
June 2021 – May 2022	9.7	
July 2021 – June 2022	9.6	
August 2021 – July 2022	9.9	

Table 5. EU-MISC2382 VOC Emission Limit Exceedances.

September 2021 – August 2022	9.9
October 2021 – September 2022	9.3
November 2021 – October 2022	9.9
December 2021 – November 2022	9.5
January 2022 – December 2022	4.8
February 2022 – January 2023	7.8
March 2022 – February 2023	8.1
April 2022 – March 2023	8.0
May 2022 – April 2023	8.1
June 2022 – May 2023	8.2
July 2022 – June 2023	8.1
August 2022 – July 2023	8.1
September 2022 – August 2023	7.9
October 2022 – September 2023	7.2
November 2022 – October 2023	7.1
December 2022 – November 2023	6.8

Process/Operational Restrictions

All waste materials are required to be stored in closed containers and disposed of in a manner in compliance with all state rules and federal regulations. As described under FG-GELCOAT, a Violation Notice will be sent to address the open containers of waste materials (both identifiable and unidentifiable).

FG-RULE 287(2)(c)

This flexible group covers emission units that are exempt from the requirements of Rule 201 under Rule 287(2)(c). Currently EU-PAINTBOOTH, a spray booth with an oven used to apply paint to molded parts, is the only Emission Unit that falls under this flexible group. The oven associated with this paint booth was moved to plant 2. The paint booth was in-use during the inspection.

There are no Emission Limits, Process/Operational Restrictions, Testing/Sampling requirements, or Stack/Vent Restrictions at this time.

Material Limits & Monitoring/Recordkeeping

MPI is limited to 200 gallons of coating (minus water, as applied) per month. MPI is required to keep records of the following: the volume of coating used, minus water, in gallons.

I requested records for January 2022 – November 2023. Records were reviewed on a monthly basis during this time period. Records indicate compliance with the monthly Material Limit of 200 gallons. The month with the highest coating usage was 64.24 gallons in January 2023.

Design/Equipment Parameters

The paint booth exhaust system is required to be equipped with a dry filter control or water wash control which is installed, maintained, and operated in accordance with manufacturer's specifications. The booth was in use during the inspection and therefore I was unable to determine whether the filters were installed properly. We observed the stack from the outside of the building and did not see any visible emissions emitting from the stack.

Paint booth filter replacement logs were provided.

FG-COLDCLEANERS

This unit represents any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278, 278a and Rule 281(2)(h) or Rule 285(2)(r)(iv). Based on the inspection, there are 2 cold cleaners at MPI: a Model 1055 Auto Paint Spray Gun & Equip Parts Washer (Tag No 0001055SK11019327, Existing prior to 1/1/2020) and a Model 30 Solvent Parts Washer (Tag No 00001140SK14114347, Existing prior to 1/1/2020).

Both parts washers had their lids closed and are under the 10 ft2 surface area requirement of the Rule 281(2)(h) exemption. Operating instructions were missing from both, however, and so the AQD has sent 2 copies of the orange operating instruction sheets to MPI to post on these cold cleaners to ensure compliance with the Part 6 Rules.

There are no Testing/Sampling requirements for FGGELCOAT at this time.

FGMACTDDDD

This flexible group covers EU-GERREF OVEN and EU-DUKES OVEN.

EU-DUKES OVEN was removed from MPI and EU-GERREFOVEN (0.8 MMBtu/hr) was moved to Plant 2, 2345 Jarco Dr.

Material Limits

J. Mason confirmed that only natural gas is used in EU-GERREFOVEN.

Process/Operational Restrictions & Other Requirements

Tune-ups are required every 5 years for boilers/process heaters rated less than or equal to 5 MMBtu/hr. The last tune-up was conducted March 15, 2021. Although the form is for the MACT Subpart JJJJJJ, the tune-up requirements according to SC IX.4 of FGMACTDDDD are the exact same as those in the MACT Subpart JJJJJJJ form provided to me. The next tune up is due by March 15, 2026.

The tune-up log includes CO emissions in ppmv before (54) and after (50) the tune-up.

FGMACTPPPP

This flexible group includes EU-PAINTBOOTH for sources engaged in the surface coating of plastic parts and products.

There are no Process/Operational Restrictions, Design/Equipment Parameters, or Stack/Vent Restriction requirements for FGMACTPPPP at this time.

Emission Limits, Material Limits & Monitoring/Recordkeeping

GLC has chosen to comply with the "Emission rate without add-on controls" Compliance Option. The lb organic HAP per lb of coating solids emissions are calculated on a 12-month rolling period. According to MPI's records, MPI only uses "General Use Coatings" in EUPAINTBOOTH. I reviewed the records from January 2022 – November 2023 and all organic HAP emission limits appear to meet the limit of 0.16 lb/lb of coating solids limit (highest 12-month rolling spanned several 12-month rolling periods at 0.06 lb organic HAP/ lb coating solids.

Reporting

All required reporting has been submitted by the timelines specified in the ROP.

FGMACTWWWW

This flexible group was previously named FG-COMPOSITESMACT. With the issuance of PTI 131-22, this flexible group was renamed to FGMACTWWWW.

FGMACTWWWW includes the following emission units: EU-SPRAYBOOTHGL1, EU-SPRAYBOOTHRS1, EU-EXPRS2, EU-EXPGEL2, EU-MANUAL, EU-XRTM, and EU-MISC2382. The MACT WWWW applies to each new or reconstructed affected source at reinforced plastic composites production facilities (defined in 63.5785). Reinforced plastic composites production includes cleaning, mixing, HAP-containing materials storage, and repair operations associated with the production of plastic composites.

There are no Material Limits, Design/Equipment Parameters, or Stack/Vent Restrictions at this time.

Emission Limits, Testing/Sampling & Monitoring/Recordkeeping

Organic HAP Emission Limits are based on the type of resins, gelcoats, and applicator style that is used in open molding applications. The limits are based on 12-month rolling averages, as determined at the end of each calendar month. MPI has chosen to use the compliance option specified in 40 CFR 63.5810(a) (SC I.12a).

The "12-month rolling Organic HAP Emission Rate" columns in the attached "MACT Subpart WWWW" spreadsheet were reviewed for compliance. All appear to be in compliance with the Emission Limits established in SC I.1 – I.11 for January 2022 – November 2023.

Process/Operational Restrictions & Other Requirements

MPI shall not use cleaning solvents that contain HAP, except that styrene may be used as a cleaner in closed systems, and organic HAP-containing cleaners may be used to clean cured resin from application equipment. I was told by J. Mason that they only use acetone and that any HAP-containing cleaners are used for mold-stripping and cleaning, only, which are exempt from the MACT WWWW.

I did not observe any mixing operations occurring during the inspection. Future inspections would benefit from review of mixing operations to ensure compliance with covers on the mixers.

Reporting

All required reporting has been submitted by the timelines specified in the ROP.

Compliance Statement

At this time Molded Plastic Industries appears to be in non-compliance with MI-ROP-N2430-2019a and PTI 131-22. A violation notice has been issued to address these deficiencies.



Image 1(Waste Shed - buckets) : Waste buckets uncovered.



Image 2(Waste) : Waste tote's bung open to atmosphere, waste buckets uncovered.

SECTION VI: FACILITY INFORMATION AND CERTIFICATION (§63.11225(b)(1) and (2))9

Facility Name: MOLDED PLASTIC	<u></u>
Facility Street Address: 2389 JARCO	<u>DS</u>
HOLT	$-\frac{MI}{\text{State}} - \frac{48841}{7\text{in}}$

I certify that my facility has complied with the requirements in §63.11223 to conduct a biennial or 5-year tune-up, as applicable, of each boiler.

By my signature, I am certifying that my facility has complied with all relevant standards and other requirements of 40 CFR part 63 subpart JJJJJJ and certifying the truth, accuracy and completeness of this document.

Name of Responsible Official (please print)

Phone Number

2

Signature of Responsible Official

^g This certification does *not* need to be submitted, but it must be maintained on site as a record and may be requested by the delegated authority.

Date

Title

Email Address

SECTION IV: RECORD OF MANUFACTURER SPECIFICATIONS (§63.11225(c)(2))

If your boiler has manufacturer specifications for adjusting the flame patterns or optimizing total emissions of carbon monoxide, maintain a copy of these specifications in your records.

SECTION V: RECORD OF FUEL TYPE AND AMOUNT USED OVER THE 12 MONTHS PRIOR TO THE TUNE-UP, BUT ONLY IF THE BOILER WAS PHYSICALLY AND LEGALLY CAPABLE OF USING MORE THAN ONE TYPE OF FUEL DURING THAT PERIOD (§63.11223(b)(6)(iii))

Amount of fuel used or delivered for the 12 mont		nths preceding the tune-up ^e) ^e			
Fuel	Delivery Date						
Туре ^d	Or Period of Consumption						Units of measure ^f
NATURAL	- 6AS	NA					
•							

[Add rows to the table for additional fuels, as necessary.]

If you have more than one boiler that must conduct a tune-up, please repeat Sections II, III, IV, and V for each boiler. Otherwise, proceed to Section VI below.

^d Report all fuels used in each of the units subject to the standard (e.g., bituminous coal, #6 fuel oil, #2 fuel oil, natural gas, bark, lumber, etc.). See the definition of fuel type in §63.11237.

^e EPA recognizes that not all facilities have fuel metering capabilities. Records of fuel delivery- instead of fuel consumption- will also meet the rule requirements. Affected sources have discretion on the periods of fuel records maintained on-site. The records may be annual, monthly, or periodic, depending on fuel delivery frequencies. ^f e.g., Gallons, tons, standard cubic feet (scf), etc.

SECTION III: RECORD OF TUNE-UP PROCEDURES (§63.11225(c)(2) and (§63.11223(b)(6))

Check the applicable box when the procedure is completed. If the procedure does not apply to you, indicate 'not applicable' or 'NA' in the comments column.

Requ	uirement	Description		Inspector Comments/ Corrective Actions Taken	
X	Inspect the burner ^b	Clean or replace any components of the burner, as necessary		ALL PARTS LOOD	
X	Inspect the flame pattern	Adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available.		NO CHANGE NEEDED	
X	Inspect air-to-fuel ratio control system ⁶	Ensure system is calibrated and functioning properly, if such a system is installed on the boiler		NO CHANGE NEEDED	
X	Optimize emissions of carbon monoxide (CO)	Optimize emissions consistent with the manufacturer's specifications, if available, and with any nitrogen oxide requirement to which the boiler is subject.		NO CHANGE NEEDED	
X	Measure CO and O ₂	Parameter	Before	After	NO CHANGE NEEDED
before and after tune-		Basis (wet or dry)			
	up ^c	CO (ppmv)	5-4	SO	
		O ₂ (% by volume)	20.6	20.9	

^b You may delay the inspection until the next scheduled unit shutdown, but you must inspect each burner at least once every 36 months if subject to biennial tune-ups, and at least once every 72 months if subject to 5-year tune-ups.

^c Measurements may be made on either a dry or wet basis, as long as it is the same basis before and after the tune-up adjustments are made. CO concentration measurements must be made in units of parts per million by volume (ppmv). Oxygen (O_2) concentration measurements must be made as percent by volume.

The first Compliance Certification Report (Section VI of this form) must be prepared by March 1 of the year following the calendar year during which the first biennial or 5-year tune-up is completed. Later certifications must be prepared by March 1 of the year following the calendar year during which a biennial or 5-year tune-up is completed.

Where do I send this form (§63.11225(b))?

This certification does *not* need to be submitted, but it must be maintained on site as a record and may be requested by the delegated authority.

SECTION II: RECORD OF GENERAL BOILER INFORMATION

Date: 3-15-21	
Reporting Period:	
Boiler Operator:	
Boiler Emission Unit ID ^a :	
Tune-Up Conducted By:	AARON ROBISON

^a Use the boiler emission unit ID consistent with the ID provided in the Initial Notification Report.

EXAMPLE Tune-up Record and Compliance Certification

National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers 40 CFR Part 63 Subpart JJJJJJ

This form shows examples of what on site records should be maintained to document your tune-up. Your regulated boiler may require additional detail, depending on your boiler design. This list is not allinclusive, because it is not modeled after a particular system, but instead gives only general information that is applicable to most systems.

What is the purpose of this form?

You may use this form to meet the requirements for completing and documenting a tune-up under the National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers. However, you may also record the information in another form or format.

SECTION I: INSTRUCTIONS

Check the applicable box below:

My boiler is subject to a tune-up requirement.



If you did not check the box above, do not use this example record. See <u>http://www.epa.gov/ttn/atw/boiler/boilerpg.html</u> for additional implementation tools.

When is this form due (§63.11225(b))?

Existing Sources: For each tune-up conducted, Sections I-V of this form are records that you should keep to demonstrate compliance with this rule. The first tune-up should be completed by March 21, 2014. Subsequent biennial or 5-year tune-ups, as applicable, should be completed no later than 25 months or 61 months, respectively, after the previous tune-up.

The first Compliance Certification Report (Section VI of this form) must be prepared by March 1, 2015. Later certifications must be prepared by March 1 of the year following the calendar year during which a biennial or 5-year tune-up is completed.

New Sources:

For each tune-up conducted, Sections I-V of this form are records that you should keep to demonstrate compliance with this rule. The first biennial or 5-year tune-up, as applicable, must be no later than 25 months or 61 months, respectively, after the initial startup of the boiler. Subsequent biennial or 5-year tune-ups, as applicable, should be completed no later than 25 months or 61 months, respectively, after the previous tune-up.

For More Information: The complete regulatory text for the National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers final rule, 40 CFR part 63, subpart JJJJJJ, can be found at <u>http://edocket.access.gpo.gov/2011/pdf/2011-4493.pdf</u> (March 21, 2011 final rule) and <u>http://www.gpo.gov/fdsys/pkg/FR-2013-02-01/pdf/2012-31645.pdf</u> (February 1, 2013 amendments to final rule).

3 | Page

- Each 5-year tune-up must be conducted no more than 61 months after the previous tune-up. For a new or reconstructed boiler subject to a 5-year tune-up, the first 5-year tune-up must be no later than 61 months after the initial startup.
- If the unit is not operating on the required date for a tune-up (because it is a seasonal boiler, or because it is down for maintenance, for example), the tune-up must be conducted within 30 days of startup (§63.11223(b)(7)).

How do I meet the tune-up requirements?

<u>For Initial Tune-up</u>: You must conduct a performance tune-up for each affected existing boiler according to §63.11223(b)-(f) and, by July 19, 2014, you must include a signed statement in the Notification of Compliance Status (§63.11225(a)(4)(ii)) that indicates that you conducted a tune-up of the boiler. If you already conducted your initial tune-up and submitted the Notification of Compliance Status, you do **not** need to resubmit the notification.

You are required to submit the Notification of Compliance Status electronically using the Compliance and Emissions Data Reporting Interface (CEDRI) through EPA's Central Data Exchange (<u>www.epa.gov/cdx</u>) (§63.11225(a)(4)(vi)). CEDRI is a web-based application for the electronic reporting of various reports required in 40 CFR Parts 60 and 63. Paper submittal of the Notification of Compliance Status will be accepted up to the time that the CEDRI form is available. After that time, the Notification of Compliance Status *must* be submitted electronically.

Your first Compliance Certification Report certifying that you complied with the requirements in §63.11223 to conduct a tune-up of your existing boiler must be prepared by March 1, 2015. You do **not** need to submit this report, but it can be requested by your delegated authority (§63.11225(b)).

New affected boilers subject only to tune-up requirements (and, therefore, not subject to initial tuneups) are not required to prepare and submit a Notification of Compliance Status. New sources must conduct their first biennial or 5-year tune-up no later than 25 months or 61 months, respectively, after start-up, and must prepare their first Compliance Certification Report by March 1 of the year following the tune-up.

For Subsequent Tune-up: You must conduct a performance tune-up for each affected existing and new boiler according to §63.11223(b)-(f) every 2 years or 5 years, as applicable, and you must certify every 2 years or 5 years, as applicable, in your Compliance Certification Report that you complied with the requirements in §63.11223 to conduct a tune-up. You do **not** need to submit this report, but it can be requested by your delegated authority (§63.11225(b)).

For existing and new boilers that are required only to conduct a biennial or 5-year tune-up and are not subject to emission or operating limits, you may prepare only a biennial or 5-year Compliance Certification Report. Reports should be prepared by March 1 of the year after the calendar year during which a tune-up is completed.

<u>For All Tune-ups</u>. You must conduct the tune-up while burning the type of fuel (or fuels for boilers that routinely burn two fuels at the same time) that provided the majority of the heat input to the boiler for the 12 months before the tune-up (§63.11223(a)). You must keep records of the date of the tune-up, the procedures followed, and the manufacturer's specifications to which the boiler was tuned (§63.11225(c)). Following each tune-up, you must prepare and maintain onsite a report that contains (i) the concentrations of CO and oxygen before and after the tune-up, (ii) a description of any corrective actions taken as a part of the tune-up, and (iii) the type and amount of fuel used over the 12 months prior to the tune-up of the boiler, but only if the boiler was physically and legally capable of using more than one type of fuel during that period (§63.11223(b)). The records must be maintained on site and submitted to the delegated authority if requested. You may use the example form to document the tune-up, keep records, and meet these reporting requirements.

Tune-up Information

Revised April 2013

National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers

40 CFR Part 63 Subpart JJJJJJ

Who must conduct a tune-up (§63.11214)?

- Owners and operators of new and existing coal-fired area source boilers having a heat input capacity of less than 10 million Btu per hour.
- Owners and operators of all biomass-fired and oil-fired area source boilers.
- If your boiler is subject to tune-ups, you must have it tuned-up every 2 or 5 years, as applicable.

Boilers that are required to have a tune-up biennially (every 2 years) include:

- New and existing coal-fired boilers having a heat input capacity of less than 10 million Btu per hour that do not meet the definition of limited-use boiler or do not use oxygen trim systems that maintain an optimum air-to-fuel ratio.
- New and existing biomass-fired boilers that do not meet the definition of seasonal boiler or limited-use boiler, or use oxygen trim systems that maintain an optimum air-to-fuel ratio.
- New and existing oil-fired boilers having a heat input capacity greater than 5 million Btu per hour that do not meet the definition of seasonal boiler or limited-use boiler, or do not use oxygen trim systems that maintain an optimum air-to-fuel ratio.

Boilers that are required to have a tune-up every 5 years include:

- New and existing seasonal boilers.
- New and existing limited-use boilers.
- New and existing oil-fired boilers having a heat input capacity equal to or less than 5 million Btu per hour.
- New and existing boilers with oxygen trim systems that maintain an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune-up.

By when must I complete the initial tune-up (§63.11196)?

- Existing Sources: No later than March 21, 2014.
- <u>New Sources</u>: Not required to conduct an initial tune-up.

By when must I complete subsequent tune-ups (§63.11223)?

• Each biennial tune-up must be conducted no more than 25 months after the previous tune-up. For a new or reconstructed boiler subject to a biennial tune-up, the first biennial tune-up must be no later than 25 months after the initial startup of the new or reconstructed boiler.



SAFETY DATA SHEET

Revision Date 04/Sep/2018

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier Product Description:

DION® FR 7704-00

Other means of identification SAP ID(s): Material Code: Chemical Family

17217 ; 20522; 25083; 199928 7704-00 Polyester Resin

Recommended use of the chemical and restrictions on useRecommended UseFire Retardant ResinUses advised againstNo information available

Details of the supplier of the safety data sheet

Manufacturer/Supplier: Polynt Composites USA, Inc. 99 East Cottage Avenue Carpentersville IL 60110

In Canada Polynt Composites Canada Inc 29 Regan Road Brampton, Ontario L7A 1B2

Emergency Telephone

Chemtrec: 1-800-424-9300 (in U.S. & Canada) +1-703-741-5970 (international)

E-mail address

MSDS@polynt.com

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation Serious eye damage/eye irritation Skin sensitization Carcinogenicity Reproductive toxicity Specific target organ toxicity (single exposure) Specific target organ toxicity (repeated exposure) Chronic aquatic toxicity Flammable liquids Category 2 Category 2A Category 1 Sub-category 1B Category 2 Category 3 Category 1 Category 3 Category 3 Category 3

Label elements

Danger

Emergency Overview

Hazard statements Causes skin irritation Causes serious eye irritation May cause an allergic skin reaction May cause cancer Suspected of damaging fertility or the unborn child May cause respiratory irritation

Causes damage to hearing through prolonged or repeated exposure if inhaled Harmful to aquatic life with long lasting effects Flammable liquid and vapor Appearance Clear Amber Physical State Liquid Odor Pungent Precautionary Statements - Prevention Obtain special instructions before use Do not handle until all safety precautions have been read and understood Wear protective gloves/protective clothing/eye protection/face protection Wash face, hands and any exposed skin thoroughly after handling Contaminated work clothing must not be allowed out of the workplace Do not breathe mist, vapors, sprav

Do not eat, drink or smoke when using this product

Use only outdoors or in a well-ventilated area

Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Keep container tightly closed

Ground/bond container and receiving equipment

Use explosion-proof electrical/ventilating/lighting/equipment

Use only non-sparking tools

Take precautionary measures against static discharge

Keep cool

Avoid release to the environment

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eve irritation persists: Get medical advice/attention

If skin irritation or rash occurs: Get medical advice/attention

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower

Wash contaminated clothing before reuse

IF INHALED: Remove person to fresh air and keep comfortable for breathing In case of fire: Use CO2, dry chemical, or foam to extinguish

Collect spillage

Precautionary Statements - Storage

Store locked up Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to industrial incineration plant Dispose of in accordance with federal, state and local regulations

Hazards not otherwise classified (HNOC) Not applicable Other Information None known

Unknown acute toxicity Unknown aquatic toxicity 2.3 % of the mixture consists of ingredient(s) of unknown toxicity 66.9 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%	Trade Secret
Styrene	100-42-5	27.7	
Alpha-Methyl Styrene	98-83-9	2.5	
Triethyl phosphate	78-40-0	1 - 3	
Cobalt compounds	Proprietary	< 0.25	*

* The exact percentage (concentration) of composition has been withheld as a trade secret. If CAS number is "proprietary", the specific chemical identity has been withheld as a trade secret.

4. FIRST AID MEASURES **First Aid Measures Eye Contact** Immediately flush eyes for at least 15 minutes. Get medical attention. Skin Contact Wash off with warm water and soap. Remove contaminated clothing and shoes. If skin irritation persists, call a physician. Wash contaminated clothing before reuse. Inhalation Remove person to fresh air. If signs/symptoms continue, get medical attention. Keep patient warm and at rest. If not breathing, give artificial respiration. If breathing is labored, administer oxygen. Get medical attention immediately. Ingestion Do NOT induce vomiting. Potential for aspiration if swallowed. This material may enter the lungs during vomiting. Immediately give the victim one or two glasses of water or milk to drink. Never give anything by mouth to an unconscious person. GET IMMEDIATE MEDICAL ATTENTION. Most important symptoms and effects, both acute and delayed Irritating to eyes, respiratory system and skin. Harmful by inhalation, in contact with skin Most Important Symptoms and and if swallowed. May cause allergic skin reaction. Effects Indication of any immediate medical attention and special treatment needed Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Carbon dioxide (CO2), Foam, Dry chemical, Water spray

Unsuitable Extinguishing Media

Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Hazardous combustion products	Combustion may produce carbon monoxide, carbon dioxide and irritating or toxic vapors and gases
Combustion/explosion hazards	Flammable. Vapors may form explosive mixtures with air. Flash back possible over considerable distance. This material may polymerize (react) when its container is exposed to heat (as during a fire). This polymerization increases pressure inside a closed container and may result in the violent rupture of the container. Empty containers may retain product residue (liquid and/or vapor). Do not pressurize, cut, weld, braze, solder, drill, grind, or expose these containers to heat, flame, sparks, static electricity, or other sources of ignition as the container may explode and may cause injury or death.

Protective Equipment and Precautions for Firefighters

Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective clothing. Thoroughly decontaminate all protective

equipment after use. Evacuate all persons from the fire area to a safe location. Move non-burning material, as feasible, to a safe location as soon as possible. Fire fighters should be protected from potential explosion hazard while extinguishing the blaze. DO NOT extinguish a fire resulting from the flow of this flammable liquid until the flow of liquid is effectively shut off. This precaution will help prevent the accumulation of an explosive vapor-air mixture after the initial fire is extinguished. Use water spray to cool fire-exposed containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions	Remove all sources of ignition. Evacuate personnel to safe areas. Use personal protective equipment as required. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Avoid contact with skin and eyes.
Other Information	All equipment used when handling the product must be grounded.
Environmental precautions	
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent product from entering drains. Soak up with inert absorbent material and dispose of as hazardous waste. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Methods and material for containme	ent and cleaning up
Methods for Containment	Prevent spilled material from 1) contaminating soil, 2) entering sanitary sewers, storm sewers, and drainage systems, and 3) entering bodies of water or ditches that lead to waterways. Prevent spreading over a wide area (e.g. by containment or oil barriers).
Methods for Clean-up	Soak up with inert absorbent material. Remove from surface water (e.g. by skimming or siphoning). Dispose of contaminated material as waste according to item 13.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Do not breathe vapor or mist. Avoid contact with skin, eyes or clothing. Wash hands before breaks and immediately after handling the product. Take off contaminated clothing and wash before reuse. Ensure adequate ventilation. Ground and bond containers when transferring material. Use spark-proof tools and explosion-proof equipment. Consult your supplier of promoters and catalysts for additional instructions on proper mixing and usage. Empty containers may retain product residue (liquid and/or vapor). Do not pressurize, cut, weld, braze, solder, drill, grind, or expose these containers to heat, flame, sparks, static electricity, or other sources of ignition as the container may explode and may cause injury or death. Empty drums should be completely drained and properly bunged. Empty drums should be promptly returned to a drum reconditioner or properly disposed. Do not use compressed air for filling, discharging or handling.

Conditions for safe storage, including any incompatibilities

Storage Keep away from heat and sources of ignition. No smoking. Protect from direct sunlight. Keep containers tightly closed in a cool, well-ventilated place. To ensure maximum stability and maintain optimum resin properties, resins should be stored in closed containers at temperatures below 77°F (25°C).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits

Styrene (CAS #: 100-42-5)

AGGITTEV	40 ppm STEL
	A4 Not Classifiable as a Human Carcinogen
OSHA PEL	100 ppm TWA 200 ppm Ceiling
Industry PEL	While the federal workplace exposure limit for styrene is 100
	ppm, OSHA accepted the styrene industry's proposal to
	Term Exposure Limit (STEL) of 100 ppm, 15 minute exposure.
Canada - Alberta OELs	40 ppm STEL
	170 mg/m ³ STEL
	20 ppm TWA 85 mg/m ³ TWA
Canada - Ontario OELs	35 ppm TWA
	100 ppm STEL
Canada - British Columbia OELs	50 ppm TWA
NIOSH IDI H	75 ppm STEL 700 ppm
Mexico OEL	100 ppm STEL
	425 mg/m ³ STEL
	50 ppm TWA
	(skin)
Alpha-Methyl Styrene (CAS #: 98-83	-9)
ACGIH TLV	10 ppm TWA
	A3 Confirmed Animal Carcinogen with Unknown Relevance to
OSHA PEL	100 ppm Ceiling
	480 mg/m ³ Ceiling
Canada - Alberta OELs	100 ppm STEL
	50 ppm TWA
	242 mg/m ³ TWA
Canada - Ontario OELs	50 ppm TWA
Canada - British Columbia OELs	100 ppm STEL
Canada - Bhiish Columbia OEEs	75 ppm STEL
	100 ppm Ceiling
NIOSH IDLH	700 ppm
Mexico OEL	100 ppm STEL 485 mg/m ³ STEL
	50 ppm TWA
	240 mg/m ³ TWA
Triethyl phosphate (CAS #: 78-40-0)	$7.45 mg/m^3 T/M$
Legend	7.45 mg/m TWA
ACGIH (American Conference of Gove	ernmental Industrial Hygienists)
TLV® (Threshold Limit Value)	
STEL - Short Term Exposure Limit	
OSHA - Occupational Safety and Heal	th Administration
PEL - Permissible Exposure Limit	
OEL - Occupational Exposure Limit	ional Safety and Health
IDLH - Immediately Dangerous to Life	or Health
SKIN: Skin Absorption	
Appropriate engineering controls	
Engineering Controls	Use general ventilation to maintain airborne concentrations to levels that are below
	regulatory and recommended occupational exposure limits. Local ventilation may be required during certain operations. Use explosion-proof electrical equipment.

Individual protection measures, such as personal protective equipment

Eye/face Protection	Safety glasses with side-shields. If splashes are likely to occur:. Tight sealing safety goggles. Ensure that eyewash stations and safety showers are close to the workstation location.
Skin Protection	Wear protective nitrile rubber or Viton [™] gloves. Gloves made of nitrile rubber or polyvinyl chloride (PVC) may be used for splash protection and brief or intermittent contact with styrenated polyester resin. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Impervious clothing. Rubber or plastic boots.
Respiratory Protection	None required if hazards have been assessed and airborne concentrations are maintained below the exposure limits listed in Section 8. Wear an approved air-purifying respirator with organic vapor cartridges and particulate filters where airborne concentrations may exceed exposure limits in Section 8 and/or there is exposure to dust or mists due to sanding, grinding, cutting, or spraying. Use an approved positive-pressure air-supplied respirator with emergency escape provisions if there is any potential for an uncontrolled release, airborne concentrations are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.
General Hygiene Considerations	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES	
-------------------------------------	--

Appearance	Clear Amber
Odor	Pungent
Odor threshold	0.2 ppm (Styrene)
Physical State	Liquid
pH	No information available
Flash point	32 °C / 89 °F
Flash Point Method:	Seta closed cup
Autoignition Temperature	490°C / 914°F (Styrene)
Boiling point / boiling range	146°C / 295°F (Styrene)
Melting point / freezing point	No information available
Flammability Limit in Air	
Lower	0.9%
Upper	6.6%
Specific Gravity	1.22 - 1.25 @ 25°C
Solubility	Insoluble (Water)
Evaporation rate	0.49 (BuAc = 1) (Styrene)
Vapor Pressure	5 mmHg @ 20°C (Styrene)
	6.7 hPa (Styrene)
Vapor density	3.6 - 4.1 (Air = 1)
Explosive properties	No information available
Oxidizing Properties	No information available
Percent Volatile	32 - 35 % by weight
VOC Content	394 g/l (calculated) product as supplied
Viscosity	425 - 525 cps @ 25°C
Partition coefficient	No information available
Decomposition temperature	No information available

10. STABILITY AND REACTIVITY

<u>Reactivity</u> Unstable upon depletion of inhibitor.

Chemical Stability

Stable under normal conditions. Stable under recommended storage conditions.

Possibility of Hazardous Reactions

Hazardous polymerization

Polymerization can occur. Hazardous polymerization will occur if contaminated with peroxides, metal salts and polymerization catalysts. Product will undergo hazardous polymerization at temperatures above 150 F (65 C). Hazardous polymerization may occur upon depletion of inhibitor - may cause heat and pressure build-up in closed containers.

Conditions to Avoid

Heat, flames and sparks. Contamination by those materials referred to under Incompatible materials. Unstable upon depletion of inhibitor. Elevated temperature.

Incompatible materials

Strong acids. Strong oxidizing agents. Metal salts. Polymerization catalysts.

Hazardous decomposition products

Hydrocarbons. Carbon monoxide. Carbon dioxide (CO2). Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Primary Routes of Entry	Eye contact, Ingestion, Inhalation, Skin Contact, Skin absorption
Acute toxicity Styrene Oral LD50 Inhalation LC50 Alpha-Methyl Styrene Oral LD50 Triethyl phosphate Oral LD50 Dermal LD50 Inhalation LC50	= 1000 mg/kg (Rat) = 11.8 mg/l (4 H) (Rat) = 4900 mg/kg (Rat) = 1165 mg/kg (Rat) > 2000 mg/kg (Rat) > 2050 ppm (Rat) 6H
Information on toxicological effects	_
Symptoms	Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting
Delayed and immediate effects as w	ell as chronic effects from short and long-term exposure
Eyes	Causes serious eye irritation.
Skin	Contact causes skin irritation. Prolonged skin contact may defat the skin and produce dermatitis.
Inhalation	Harmful by inhalation. May cause irritation of respiratory tract. Inhalation of high vapor concentrations can cause central nervous system depression and narcosis.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Aspiration hazard if swallowed - can enter lungs and cause damage. Ingestion is not an anticipated route of exposure for this material in industrial use.
Irritation	Irritating to eyes and skin.
Corrosivity	Not corrosive.
Sensitization	May cause sensitization of susceptible persons by skin contact.
Repeated dose toxicity	In humans, styrene may cause a transient decrease in color discrimination and effects or hearing. Repeated or prolonged exposure may cause skin irritation and dermatitis, due to defatting properties of the product. May cause damage to the kidneys, liver, eyes, brain, respiratory system, central nervous system through prolonged or repeated exposure if

	inhaled. May cause damage to the liver, eyes, brain, respiratory system, central nervous system through prolonged or repeated exposure if inhaled.		
Mutagenic effects	Styrene has given mixed positive and negative results in a number of mutagenicity tests. Styrene was not mutagenic without metabolic activation but gave negative and positive mutagenic results with metabolic activation.		
Carcinogenicity			
<u>Styrene</u> ACGIH IARC NTP <u>Alpha-Methyl Styrene</u> IARC <u>Cobalt compounds</u> IARC	A4 - Not Classifiable as a Human Carcinogen Group 2A - Probably Carcinogenic to Humans Reasonably anticipated to be human carcinogen Group 2B - Possibly Carcinogenic to Humans Group 2B - Possibly Carcinogenic to Humans		
Legend	IARC - International Agency for Research on Cancer NTP - National Toxicology Program ACGIH (American Conference of Governmental Industrial Hygienists)		
Reproductive Toxicity	No information available.		
Neurological effects	No information available.		
STOT - single exposure	No information available.		
STOT - repeated exposure	No information available.		
Target organ effects	Liver, Kidney, Central nervous system (CNS), Respiratory system.		
Aspiration hazard	o information available.		
Unknown acute toxicity	2.3 % of the mixture consists of ingredient(s) of unknown toxicity.		
The following values are calculated ATEmix (oral) ATEmix (dermal) ATEmix (inhalation-vapor)	based on chapter 3.1 of the GHS document . 12878 mg/kg 7226 mg/kg 42.6 mg/L		

12. ECOLOGICAL INFORMATION

Ecotoxicity	
Styrene	

L

Partition coefficient	2.95		
Bioconcentration factor (BCF)	13.5 fish		
Algae	EC50 = 1.4 mg/L (Pseudokirchneriella subcapitata) (72h) EC50 0.46 - 4.3 mg/L		
	(Pseudokirchneriella subcapitata) (72h)		
Fish	LC50 3.24 - 4.99 mg/L (Pimephales promelas) (96 h) flow-through		
	LC50 19.03 - 33.53 mg/L (Lepomis macrochirus) (96 h) static		
	LC50 6.75 - 14.5 mg/L (Pimephales promelas) (96 h) static		
	LC50 58.75 - 95.32 mg/L (Poecilia reticulata) (96 h) static		
Crustacea	3.3 - 7.4: 48 h Daphnia magna mg/L EC50		
Alpha-Methyl Styrene			
Partition coefficient	3.265		
Algae	EC50 52.6 mg/l (Pseudokirchneriella subcapitata) (72 h)		
Fish	LC50 15 mg/l (Oryzias latipes) (96 h)		
Triethyl phosphate			
Partition coefficient	0.8 - 1.11		
Fish	LC50 > 100 mg/L (Leuciscus idus) 96H		
Crustacea	EC50 2,705 mg/L 24H		
	NOEC 31.6 mg/L 21d		

Cobalt compounds Algae

EC50 = 0.639 mg/L

Unknown aquatic toxicity

66.9 % of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Persistence/Degradability

No information available.

Bioaccumulation

No information available.

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods	
Disposal Considerations	Hazardous waste. Can be incinerated, when in compliance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.
US EPA Waste Number	D001 (IGNITABLE): When discarded in its purchased form, this material would be regulated under 40 CFR 261.21 as EPA Hazardous Waste Number D001 based on the characteristic of ignitability.

14. TRANSPORT INFORMATION

UN1866 RESIN SOLUTION 3 III 127
UN1866 RESIN SOLUTION CLASS 3 PG III
127 UN1866 RESIN SOLUTION CLASS 3 PG III
127 UN1866 RESIN SOLUTION 3 III 355; 366 127

IMDG/IMO

1866
SIN SOLUTION
ASS 3
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	15. REGULATORY INFORMATION
International Inventories_ TSCA Inventory Status:	All components of this material are listed on the US Toxic Substances Control Act (TSCA) inventory.
Canadian Inventory Status:	All components of this material are listed on the Canadian Domestic Substances List (DSL)
Australian Inventory Status:	This product contains one or more chemicals currently not on the Australian Inventory of Chemical Substances
Korean Inventory Status:	This product contains only chemicals which are currently listed on the Korean Chemical Substances List
Philippine Inventory:	This product contains one or more chemicals currently not on the Philippine Inventory of Chemicals and Chemical Substances
Japan ENCS:	This product contains one or more chemicals currently not on the Japanese Inventory of Existing and New Chemical Substances
Chinese IECS:	This product contains one or more chemicals currently not on the Chinese Inventory of Existing Chemical Substances
New Zealand Inventory:	This product contains one or more chemicals currently not on the New Zealand Inventory of Chemicals

US Federal Regulations

TSCA 12(b) - Export Notification:

This material does not contain any components that are subject to the US Toxic Substances Control Act (TSCA) Section 12(b) Export Notification requirements.

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS No.	Weight-%	SARA 313 Status
Styrene	100-42-5	27.7	Listed
Cobalt compounds		< 0.25	Listed

EPCRA: Emergency Planning and Community Right-to-Know Act

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product contains the following listed substances:

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Styrene 100-42-5	1000 lb			Listed

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product contains the following HAPs:

Chemical Name	CAS No.	Weight-%	HAPS data
Styrene	100-42-5	27.7	

bətsiJ	< 0.25	Cobalt compounds

CERCLA

This product contains the following reportable quantities:

	454 kg	_
	4000 L	Styrene
40 CFR 355 EHS TPQs	40 CEK 305.4 KQ	SmeN IspimehD

Chemical Weapons Convention (CWC)

This product contains a Schedule 3 Toxic chemical precursor.

California Proposition 65

WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

Canada

Former date

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

16. OTHER INFORMATION				
	t γilidstanl	E trilidsmmsla	S dilsəH	gnitsЯ A9∃N
		y Department	Polynt Regulatory Department	
			8102/q92/40	Pate noisive
	ersion in section(s):	v suoiverq edt mort segnedo snistnoo	None This data sheet o 15, 16	ətoN noizivəЯ

28 December 2017

This information is provided in good faith and is correct to the best of Polynt's knowledge as of the date hereof and is designed to assist our customets; however, Polynt makes no representation as to its completeness or accuracy. Our products are intended for themselves as to suitability for their specific applications. Any use which Polynt customets or third parties make of this information, or any reliance on, or decisions made based upon it, are the responsibility of such customet or third party. Polynt disclaims REPRESENTATIONS, EXPRESS OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A responsibility for damages, or liability, of any kind resulting from the use of this information. THERE ARE NO WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A stepsonsibility for decisions made based upon it, are the responsibility of such customer or third party. Polynt disclaims responsibility for decisions made based upon it, are the responsibility of such customer or third party. Polynt disclaims REPRESENTATIONS, EXPRESS OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A REPRESENTATIONS, EXPRESS OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A starter and the use of this information. THERE ARE NO WARRANTIES OR starter and the use of this information. THERE ARE NO WARRANTIES OR is a starter and the use of this information. THERE ARE NO WARRANTIES OR starter and the use of this information. THERE ARE NO WARRANTIES OR starter and the use of this information. THERE ARE NO WARRANTIES OR starter and the use of this information. THERE ARE NO WARRANTIES OR starter and the use of this information. THERE ARE NO WARRANTIES OR starter and the use of the use of this information. THERE ARE NO WARRANTIES of the use of the information of the use o

End of Safety Data Sheet



Section 1. Chemical product and company identification			
Trade name	C431-JKA-12		
Product type	Polyester Resin Solution		
Chemical family	Aromatic.		
Material uses	Used in the manufacture of thermoset plastic parts.		
Manufacturer	AOC, LLC 950 Highway 57 East Collierville, TN U.S.A. 38017 Website: www.aoc-resins.com Phone Number: (901) 854-2800 8am-5pm (Central Time) Mon-Fri	In case of emergency CHEMTREC (US): 24 hours/7 days (800) 424-9300 CANUTEC (Canada): 24 hours/7 days (613) 996-6666	

Section 2. Hazards identification			
OSHA status	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).		
Routes of entry	Eye contact, Skin contact, Inhalation, Ingestion		
Potential acute health effects	 Eyes: Severe eye irritant which may result in redness, burning, tearing and blurred vision. Skin: Skin irritant which may result in burning sensation. Repeated or prolonged skin contact may cause dermatitis. Ingestion: Ingestion may result in mouth, throat and gastrointestinal irritation, nausea, vomiting and diarrhea. Inhalation: Inhalation of spray mist or liquid vapors may cause upper respiratory irritation and possible central nervous system effects including headaches, nausea, vomiting, dizziness, drowsiness, loss of coordination, impaired judgement and general weakness. 		
Potential chronic health effects	CARCINOGENIC EFFECTS: <u>Styrene:</u> Classified A4 (not classifiable for human or animal) by ACGIH. Classified 2B (possible for human) by IARC. An increased incidence of lung tumors was observed in mice from a recent inhalation study. The relevance of this finding is uncertain since data from other long-term animal studies and from epidemiology studies of workers exposed to styrene do not provide a basis to conclude that styrene is carcinogenic to humans. Lung effects have been observed in mouse studies following repeated exposure. <u>Cobalt Compounds:</u> Classified A3 (proven for animal) by ACGIH. Classified 2B (possible for human) by IARC. MUTAGENIC or TERATOGENIC EFFECTS: No known effect according to our database.		

Section 3. Composition/information on ingredients			
Name	CAS#	% by weight	
1) Styrene 2) Trade Secret Ingredient(s) 3) Cobalt Compounds	100-42-5 Proprietary Mixture	37.1 1 - 5 0.1 - 1	

MSDS no.: 15038V1

Section 4. First aid measures	
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Eye contact	Flush with a continuous flow of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Use of buffered baby shampoo will aid in removal. Seek medical attention.
Skin contact	Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. If irritation persists, seek medical attention.
Inhalation	Move the victim to a safe area as soon as possible. Allow the victim to rest in a well-ventilated area. If breathing is difficult, give oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.
Ingestion	Do not induce vomiting. Seek immediate medical attention.

Section 5. Fire fighting measures		
The product is:	Flammable liquid, Class IC.	
Auto-ignition temperature	914°F(490°C) Styrene	
Flash point	87.6°F (31°C) Styrene	
Flammable limits	Lower: 0.9% Upper: 6.8% (Styrene)	
Products of combustion	May produce carbon monoxide, carbon dioxide, and irritating or toxic vapors, gases or particulate.	
Fire hazard	Flammable in the presence of open flames, sparks, or heat.	
Explosion hazard	Can react with oxidizing materials. Explosive in the form of vapor when exposed to heat or flame. Material may polymerize when container is exposed to heat (fire) and polymerization will increase pressure in a closed container which may cause the container to rupture violently.	
Fire-fighting media and instructions SMALL FIRE: Use carbon dioxide, foam, dry chemical or water fog to extinguish. LARGE FIRE: Evacuate surrounding areas. Use carbon dioxide, foam, dry chemical or water fog Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective clothing. Cool cor vessels with water spray in order to prevent pressure build-up, autoignition or explosion. Prevent sewers or other water ways.		

Section 6. Accidental release measures		
Small spill	Absorb with an inert material and place in an appropriate waste disposal container.	
Large spill	Stop leak if without risk. Eliminate all ignition sources. Contain with an inert material, recover as much as possible and place the remainder in an appropriate waste disposal container. Warn unauthorized personnel to move away. Prevent entry into sewers or confined areas.	

Section 7. Handling and storage			
Handling	WARNING! Use only in well-ventilated areas. Store away from direct sunlight. Avoid inhalation and contact with eyes, skin, and clothing. Wear appropriate personal protective equipment for your task. Ground and bond all containers when transferring the material. Empty containers may retain product and product vapor. Do not expose to heat, flame, sparks or other ignition sources such as cutting, welding, drilling, grinding or static electricity. Do not pressurize. Provide adequate safety showers and eyewashes in the area of use. Note: If product contains metal compounds (Section III), avoid dust from dried product or grinding of articles made from this material.		
Storage	Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well- ventilated place. Containers should be grounded.		

	G431-JKA-12	
Section 8. Exposure conf	trols/personal protection	
Exposure limits	Styrene	ACGIH TLV (United States, 1/2009). Skin TWA: 20 ppm 8 hour(s). TWA: 85 mg/m ³ 8 hour(s). STEL: 40 ppm 15 minute(s). STEL: 170 mg/m ³ 15 minute(s). OSHA PEL Z2 (United States, 11/2006). TWA: 100 ppm 8 hour(s). CEIL: 200 ppm AMP: 600 ppm 5 minute(s). NIOSH REL (United States, 6/2009). TWA: 50 ppm 10 hour(s). TWA: 215 mg/m ³ 10 hour(s). STEL: 100 ppm 15 minute(s). STEL: 425 mg/m ³ 15 minute(s).
	Trade Secret Ingredient(s) Cobalt Compounds	Not available. OSHA PEL (United States). TWA: 0.1 mg/m ³ ACGIH TLV (United States). TWA: 0.02 mg/m ³
	While the federal workplace exposure proposal to voluntarily meet a PEL of §	limit for styrene is 100 ppm, OSHA accepted the styrene industry's 50 ppm on an 8 hours TWA.
Engineering controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Provide adequate safety showers and eyewashes in the area of use.	
Personal protection	Personal protective equipment may vary depending on the job being performed. Eye/face: Wear eye protection such as safety glasses with side shields, splash goggles or face shield with safety glasses. Skin: Avoid skin contact. Impervious gloves should be worn. Other items may include long sleeves, lab coats, or impervious jackets. Respiratory: Determine if airborne concentrations are below the recommended exposure limits in accordance your company's PPE program and regulatory requirements. If they are not, select a NIOSH-approved respirator that provides adequate protection from the concentration levels encountered. Air-purifying respirators are generally adequate for organic vapors. Use positive pressure, supplied-air respirators if there is potential for an uncontrolled release, if exposure levels are unknown, or under circumstances where air-purifying respirators may not provide adequate protection. Reference OSHA 29 CFR 1910.134.	
Personal protection in case of a large spill	Chemical resistant gloves, full protective suit, and boots. Respiratory protection in accordance with OSHA regulation 29 CFR 1910.134. A self-contained breathing apparatus should be used to avoid inhalation of the product vapors.	
Section 9. Physical and c	chemical properties	

Physical state	Liquid.	
Color	Brown.	
Odor	Aromatic.	
Molecular weight (g/mol)	1000 to 15000	
Boiling point	293°F(145°C) Styrene	
Melting point	Not available.	
pH (1% soln/water)	Not applicable.	
Vapor pressure	4.5 mm Hg@ 68°F (20°C) Styrene	
Vapor density	3.59 Styrene (Air = 1)	
Specific gravity	1.1 (Water = 1)	
Water/oil dist. coeff.	Not available.	
Effective Date: 06/11/2010	Supersedes Date: Not applicable.	Page: 3/5
MSDS no. : 15038V1

Section 9. Physical and chemical properties

Evaporation rate	Not available.
Odor threshold	0.14 ppm Styrene
Solubility in water	Slight.
Dispersibility properties	Not dispersed in water.

Section 10. Stability and reactivity		
Stability	This product is normally stable, but can become unstable at elevated temperatures.	
Instability temperature	>170°F (77°C)	
Conditions of instability	Heat.	
Incompatibility with various substances	Polymerizes in the presence of organic peroxides, oxidizing materials, or heat.	
Corrosivity	Our database contains no additional remark on the corrosivity of this product	

Section 11. Toxicological information					
Toxicity to animals	Name	Result	Species	Dose	Exposure
	Styrene	LD50 Oral LC50 Inhalation Vapor	Rat Rat	2650 mg/kg 5634.2 ppm	- 4 hours
	Cobalt Compounds	LD50 Oral	Rat	6171 mg/kg	-
Special remarks on toxicity to animals	Lung effects have been observed in mouse studies following repeated exposure.				
Special remarks on chronic effects on humans	No additional remark.				
Special remarks on other toxic effects on humans	No additional remark.				

Section 12. Ecological information

Ecotoxicity Toxic to aquatic organisms. Should not be released to sewage system or other bodies of water at concentrations above limits established in regulations or permits.

Section 13. Disposal considerations

Waste disposal

Recycle to process, if possible. Consult your local or regional authorities. Ignitable characteristic.

Section 14. Transport information DOT UN1866; Resin Solution; 3; III. Labels TDG UN1866; Resin Solution; 3; III. Image: Colspan="2">Image: Colspan="2" Image: Colspan

Section 14. Transport information

Additional information US regulations require the reporting of spills when the amount exceeds the Reportable Quantity (RQ) for specific components of this material. See CERCLA in Section 15, Regulatory Information, for the Reportable Quantities.

Section 15. Regulatory information

Other regulations	This section does not reference all applicable regulatory compliance lists.
	TSCA : All ingredients are listed or compliant with TSCA.
	DSL: All ingredients are listed or compliant with the NSNR.
	Proposition 65 Warning: This product contains a chemical(s) known to the State of California to cause cancer, birth defects and/or reproductive harm.
	SARA 302 component(s): None.
	SARA 313 component(s): Styrene, Cobalt Compounds.
	CERCLA(RQ): Styrene - 1000 lbs. (453.6 kg)

Section 16. Other information

Prepared by

AOC, LLC - Corporate Regulatory Affairs.

FL

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SAFETY DATA SHEET

Revision Date 04/Sep/2018

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier Product Description:

POLYLITE® TLP 33234-24

Other means of identification SAP ID(s): Material Code: Chemical Family

6105 ; 6106; 187027; 191893 33234-24 Polyester Resin

Recommended use of the chemical and restrictions on useRecommended UseMarine-Low Profile ResinUses advised againstNo information available

Details of the supplier of the safety data sheet

Manufacturer/Supplier: Polynt Composites USA, Inc. 99 East Cottage Avenue Carpentersville IL 60110

In Canada Polynt Composites Canada Inc 29 Regan Road Brampton, Ontario L7A 1B2

Emergency Telephone

Chemtrec: 1-800-424-9300 (in U.S. & Canada) +1-703-741-5970 (international)

E-mail address

MSDS@polynt.com

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Inhalation (Vapors) Skin corrosion/irritation Serious eye damage/eye irritation Carcinogenicity Reproductive toxicity Specific target organ toxicity (single exposure) Specific target organ toxicity (repeated exposure) Chronic aquatic toxicity Flammable liquids Category 4 Category 2 Category 2A Sub-category 1B Category 2 Category 3 Category 1 Category 3 Category 3 Category 3

Label elements

Emergency Overview

Danger

Hazard statements

Harmful if inhaled Causes skin irritation Causes serious eye irritation May cause cancer Suspected of damaging fertility or the unborn child May cause respiratory irritation

Causes damage to hearing through prolonged or repeated exposure if inhaled Harmful to aquatic life with long lasting effects Flammable liquid and vapor Appearance Pink Opaque Physical State Liquid Odor Pungent **Precautionary Statements - Prevention** Obtain special instructions before use Do not handle until all safety precautions have been read and understood Use personal protective equipment as required Use only outdoors or in a well-ventilated area Wash face, hands and any exposed skin thoroughly after handling Wear protective gloves/protective clothing/eye protection/face protection Do not breathe mist, vapors, spray Do not eat, drink or smoke when using this product Keep away from heat/sparks/open flames/hot surfaces. - No smoking Keep container tightly closed Ground/bond container and receiving equipment Use explosion-proof electrical/ventilating/lighting/equipment Use only non-sparking tools Take precautionary measures against static discharge Keep cool Avoid release to the environment **Precautionary Statements - Response** IF exposed or concerned: Get medical advice/attention IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention If skin irritation occurs: Get medical advice/attention IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower Wash contaminated clothing before reuse IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing In case of fire: Use CO2, dry chemical, or foam to extinguish

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to industrial incineration plant Dispose of in accordance with federal, state and local regulations

Hazards not otherwise classified (HNOC)

Not applicable <u>Other Information</u> None known

Unknown acute toxicity Unknown aquatic toxicity 65.6 % of the mixture consists of ingredient(s) of unknown toxicity 66.6 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%	Trade Secret
Styrene	100-42-5	33	
Cobalt compounds	Proprietary	< 0.15	*

* The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES		
First Aid Measures		
Eye Contact	Immediately flush eyes for at least 15 minutes. Get medical attention.	
Skin Contact	Wash off with warm water and soap. Remove contaminated clothing and shoes. If skin irritation persists, call a physician. Wash contaminated clothing before reuse.	
Inhalation	Remove person to fresh air. If signs/symptoms continue, get medical attention. Keep patient warm and at rest. If not breathing, give artificial respiration. If breathing is labored, administer oxygen. Get medical attention immediately.	
Ingestion	Do NOT induce vomiting. Potential for aspiration if swallowed. This material may enter the lungs during vomiting. Never give anything by mouth to an unconscious person. GET IMMEDIATE MEDICAL ATTENTION.	
Most important symptoms and effects, both acute and delayed		
Most Important Symptoms and Effects	No information available.	
Indication of any immediate medical attention and special treatment needed		
Notes to Physician	Treat symptomatically.	
5. FIRE-FIGHTING MEASURES		

Suitable Extinguishing Media

Carbon dioxide (CO2), Foam, Dry chemical, Water spray

Unsuitable Extinguishing Media

Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Hazardous combustion products	Combustion may produce carbon monoxide, carbon dioxide and irritating or toxic vapors and gases
Combustion/explosion hazards	Flammable. Vapors may form explosive mixtures with air. Flash back possible over considerable distance. This material may polymerize (react) when its container is exposed to heat (as during a fire). This polymerization increases pressure inside a closed container and may result in the violent rupture of the container. Empty containers may retain product residue (liquid and/or vapor). Do not pressurize, cut, weld, braze, solder, drill, grind, or expose these containers to heat, flame, sparks, static electricity, or other sources of ignition as the container may explode and may cause injury or death.

Protective Equipment and Precautions for Firefighters

Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective clothing. Thoroughly decontaminate all protective equipment after use. Evacuate all persons from the fire area to a safe location. Move non-burning material, as feasible, to a safe location as soon as possible. Fire fighters should be protected from potential explosion hazard while extinguishing the blaze. DO NOT extinguish a fire resulting from the flow of this flammable liquid until the flow of liquid is effectively shut off. This precaution will help prevent the accumulation of an explosive vapor-air mixture after the initial fire is extinguished. Use water spray to cool fire-exposed containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions	Remove all sources of ignition. Evacuate personnel to safe areas. Avoid contact with skin and eyes. Use personal protective equipment as required. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.		
Other Information	All equipment used when handling the product must be grounded.		
Environmental precautions			
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent product from entering drains. Soak up with inert absorbent material and dispose of as hazardous waste. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.		
Methods and material for containment and cleaning up			
Methods for Containment	Prevent spilled material from 1) contaminating soil, 2) entering sanitary sewers, storm sewers, and drainage systems, and 3) entering bodies of water or ditches that lead to waterways. Prevent spreading over a wide area (e.g. by containment or oil barriers).		
Methods for Clean-up	Soak up with inert absorbent material. Remove from surface water (e.g. by skimming or siphoning). Dispose of contaminated material as waste according to item 13.		

7. HANDLING AND STORAGE

Precautions for safe handling

Handling

Do not breathe vapor or mist. Avoid contact with skin, eyes or clothing. Take off contaminated clothing and wash before reuse. Ensure adequate ventilation. Ground and bond containers when transferring material. Use spark-proof tools and explosion-proof equipment. Consult your supplier of promoters and catalysts for additional instructions on proper mixing and usage. Empty containers may retain product residue (liquid and/or vapor). Do not pressurize, cut, weld, braze, solder, drill, grind, or expose these containers to heat, flame, sparks, static electricity, or other sources of ignition as the container may explode and may cause injury or death. Empty drums should be completely drained and properly bunged. Empty drums should be promptly returned to a drum reconditioner or properly disposed. Do not use compressed air for filling, discharging or handling. Wash hands before breaks and immediately after handling the product.

Conditions for safe storage, including any incompatibilities

StorageKeep away from heat and sources of ignition. No smoking. Protect from direct sunlight.
Keep containers tightly closed in a cool, well-ventilated place. To ensure maximum stability
and maintain optimum resin properties, resins should be stored in closed containers at
temperatures below 77°F (25°C).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits

Components with workplace control parameters.

Styrene (CAS #: 100-42-5)	
ACGIH TLV	20 ppm TWA
	40 ppm STEL
	A4 Not Classifiable as a Human Carcinogen
OSHA PEL	100 ppm TWA
	200 ppm Ceiling
Industry PEL	While the federal workplace exposure limit for styrene is 100

	ppm, OSHA accepted the styrene industry's proposal to voluntarily meet a PEL of 50 ppm on an 8 hour TWA and a Short Term Exposure Limit (STEL) of 100 ppm, 15 minute exposure.
Canada - Alberta OELs	40 ppm STEL
	170 mg/m ³ STEL
	20 ppm TWA
	85 mg/m ³ TWA
Canada - Ontario OELs	35 ppm TWA
	100 ppm STEL
Canada - British Columbia OELs	50 ppm TWA
	75 ppm STEL
NIOSH IDLH	700 ppm
Mexico OEL	100 ppm STEL
	425 mg/m ³ STEL
	50 ppm TWA
	215 mg/m ³ TWA
	(skin)

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)
TLV® (Threshold Limit Value)
TWA (time-weighted average)
STEL - Short Term Exposure Limit
OSHA - Occupational Safety and Health Administration
PEL - Permissible Exposure Limit
OEL - Occupational Exposure Limit
NIOSH - National Institute for Occupational Safety and Health
IDLH - Immediately Dangerous to Life or Health
SKIN: Skin Absorption

Appropriate engineering controls

Engineering Controls	Use general ventilation to maintain airborne concentrations to levels that are below regulatory and recommended occupational exposure limits. Local ventilation may be required during certain operations. Use explosion-proof electrical equipment.
Individual protection measures, su	ch as personal protective equipment
Eye/face Protection	Safety glasses with side-shields. If splashes are likely to occur:. Tight sealing safety goggles. Ensure that eyewash stations and safety showers are close to the workstation location.
Skin Protection	Wear protective nitrile rubber or Viton [™] gloves. Gloves made of nitrile rubber or polyvinyl chloride (PVC) may be used for splash protection and brief or intermittent contact with styrenated polyester resin. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Impervious clothing. Rubber or plastic boots.
Respiratory Protection	None required if hazards have been assessed and airborne concentrations are maintained below the exposure limits listed in Section 8. Wear an approved air-purifying respirator with organic vapor cartridges and particulate filters where airborne concentrations may exceed exposure limits in Section 8 and/or there is exposure to dust or mists due to sanding, grinding, cutting, or spraying. Use an approved positive-pressure air-supplied respirator with emergency escape provisions if there is any potential for an uncontrolled release, airborne concentrations are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.
General Hygiene Considerations	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Odor Pink Opaque Pungent

- Odor threshold Physical State pH Flash point Flash Point Method: Autoignition Temperature Boiling point / boiling range Melting point / freezing point Flammability Limit in Air Lower Upper Specific Gravity Solubility Evaporation rate Vapor Pressure
- Vapor density Explosive properties Oxidizing Properties Percent Volatile VOC Content Viscosity Partition coefficient Decomposition temperature

0.2 ppm (Styrene) Liquid Not applicable 32 °C / 89 °F Seta closed cup 490°C / 914°F (Styrene) 146°C / 295°F (Styrene) No information available 1.1% (Styrene) 6.1% (Styrene) 1.08 - 1.12 @ 25°C Insoluble (Water) 0.49 (BuAc = 1) (Styrene) 5 mmHg @ 20°C (Styrene) 6.7 hPa (Styrene) 3.6 (Air = 1) (Styrene) No information available No information available 32.75 - 36.25 % by weight 369 g/l (calculated) product as supplied 400 - 500 cps @ 25°C No information available No information available

10. STABILITY AND REACTIVITY

Reactivity

No dangerous reaction known under conditions of normal use.

Chemical Stability

Stable under normal conditions. Stable under recommended storage conditions.

Possibility of Hazardous Reactions

Hazardous polymerization

Polymerization can occur. Hazardous polymerization will occur if contaminated with peroxides, metal salts and polymerization catalysts. Hazardous polymerization may occur upon depletion of inhibitor - may cause heat and pressure build-up in closed containers. Product will undergo hazardous polymerization at temperatures above 150 F (65 C).

Conditions to Avoid

Heat, flames and sparks. Contamination by those materials referred to under Incompatible materials. Unstable upon depletion of inhibitor. Elevated temperature.

Incompatible materials

Strong acids. Strong oxidizing agents. Metal salts. Polymerization catalysts.

Hazardous decomposition products

Hydrocarbons. Carbon monoxide. Carbon dioxide (CO2). Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Primary Routes of Entry	Eye contact, Ingestion, Inhalation, Skin Contact, Skin absorption
Acute toxicity Styrene	
Oral LD50 Inhalation LC50	= 1000 mg/kg (Rat) = 11.8 mg/l (4 H) (Rat)

Information on toxicological effects

Symptoms	Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.		
Delayed and immediate effects as well as chronic effects from short and long-term exposure			
Eyes	Irritating to eyes.		
Skin	Harmful by skin absorption. Contact causes skin irritation. Prolonged skin contact may defat the skin and produce dermatitis.		
Inhalation	Harmful by inhalation. May cause irritation of respiratory tract. Inhalation of high vapor concentrations can cause central nervous system depression and narcosis.		
Ingestion	Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Aspiration hazard if swallowed - can enter lungs and cause damage. Ingestion is not an anticipated route of exposure for this material in industrial use.		
Sensitization	Not sensitizing.		
Repeated dose toxicity	In humans, styrene may cause a transient decrease in color discrimination and effects on hearing. Repeated or prolonged exposure may cause skin irritation and dermatitis, due to defatting properties of the product. May cause damage to the liver, eyes, brain, respiratory system, central nervous system through prolonged or repeated exposure if inhaled. May cause damage to the kidneys, liver, eyes, brain, respiratory system, central nervous system through prolonged or repeated exposure if inhaled.		
Mutagenic effects	Styrene has given mixed positive and negative results in a number of mutagenicity tests. Styrene was not mutagenic without metabolic activation but gave negative and positive mutagenic results with metabolic activation.		
Carcinogenicity			
<u>Styrene</u> ACGIH IARC NTP <u>Cobalt compounds</u> IARC	A4 - Not Classifiable as a Human Carcinogen Group 2A - Probably Carcinogenic to Humans Reasonably anticipated to be human carcinogen Group 2B - Possibly Carcinogenic to Humans		
Legend	IARC - International Agency for Research on Cancer NTP - National Toxicology Program		
Reproductive Toxicity	No information available.		
Neurological effects	No information available.		
STOT - single exposure	No information available.		
STOT - repeated exposure	No information available.		
Target organ effects	Liver, Central nervous system (CNS), Respiratory system, Kidney.		
Aspiration hazard	No information available.		
Unknown acute toxicity	65.6 % of the mixture consists of ingredient(s) of unknown toxicity.		
The following values are calculated ATEmix (oral) ATEmix (dermal) ATEmix (inhalation-vapor)	based on chapter 3.1 of the GHS document . 2968 mg/kg 2002 mg/kg 11.6 mg/L		

12. ECOLOGICAL INFORMATION

Ecotoxicity St

2.95
13.5 fish
EC50 = 1.4 mg/L (Pseudokirchneriella subcapitata) (72h) EC50 0.46 - 4.3 mg/L
(Pseudokirchneriella subcapitata) (72h)
LC50 3.24 - 4.99 mg/L (Pimephales promelas) (96 h) flow-through
LC50 19.03 - 33.53 mg/L (Lepomis macrochirus) (96 h) static
LC50 6.75 - 14.5 mg/L (Pimephales promelas) (96 h) static
LC50 58.75 - 95.32 mg/L (Poecilia reticulata) (96 h) static
3.3 - 7.4: 48 h Daphnia magna mg/L EC50
EC50 = 0.639 mg/L

Unknown aquatic toxicity

66.6 % of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Persistence/Degradability No information available.

Bioaccumulation

No information available.

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods	
Disposal Considerations	Hazardous waste. Can be incinerated, when in compliance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.
US EPA Waste Number	D001 (IGNITABLE): When discarded in its purchased form, this material would be regulated under 40 CFR 261.21 as EPA Hazardous Waste Number D001 based on the characteristic of ignitability.

14. TRANSPORT INFORMATION

DOT	
UN/ID no.	UN1866
Proper shipping name	RESIN SOLUTION
Hazard Class	3
Packing Group	111
NAERG:	127
TDG UN/ID no. Proper shipping name Hazard Class Packing Group NAERG:	UN1866 RESIN SOLUTION CLASS 3 PG III 127
<u>MEX</u> UN/ID no.	UN1866

Proper shipping name Hazard Class Packing Group NAERG:	RESIN SOLUTION CLASS 3 PG III 127
IATA UN/ID no. Proper shipping name Hazard Class Packing Group Packing Instructions NAERG:	UN1866 RESIN SOLUTION 3 III 355; 366 127
IMDG/IMO UN/ID no. Proper shipping name Hazard Class Packing Group EmS-No NAERG:	UN1866 RESIN SOLUTION CLASS 3 PG III F-E, S-E 127
	15. REGULATORY INFORMATION
International Inventories TSCA Inventory Status:	All components of this material are listed on the US Toxic Substances Control Act (TSCA) inventory.
Canadian Inventory Status:	All components of this material are listed on the Canadian Domestic Substances List (DSL)
Australian Inventory Status:	This product contains only chemicals which are currently listed on the Australian Inventory of Chemical Substances
Korean Inventory Status:	This product contains only chemicals which are currently listed on the Korean Chemical Substances List
Philippine Inventory:	All components of this material are listed on or are exempt from the Philippine Inventory of Chemicals and Chemical Substances
Japan ENCS:	This product contains one or more chemicals currently not on the Japanese Inventory of Existing and New Chemical Substances
Chinese IECS:	This product contains only chemicals that are currently listed on the Chinese Inventory of Existing Chemical Substances
New Zealand Inventory:	This product contains only chemicals which are currently listed on the New Zealand Inventory of Chemicals
Taiwan Existing Chemical Substances Inventory:	Not determined

US Federal Regulations

TSCA 12(b) - Export Notification:

This material does not contain any components that are subject to the US Toxic Substances Control Act (TSCA) Section 12(b) Export Notification requirements.

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS No.	Weight-%	SARA 313 Status
Styrene	100-42-5	33	Listed
Cobalt compounds		< 0.15	Listed

EPCRA: Emergency Planning and Community Right-to-Know Act

classifications. Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate

CWA (Clean Water Act)

9-27-00L

bəteid			91 000 L	Styrene
CWA - Hazardous Substances	CWA - Priority Pollutants	CWA - Toxic Pollutants	CWA - Reportable Quantities	Shemical Name
		:	ellowing listed substances	This product contains the f

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product contains the following HAPs:

Listed	< 0.15	Cobalt compounds	
	33	100-42-5	Styrene
BJBD CYAH	%-зибіәм	.0N 6AJ	Smen isjimenj

CERCLA

This product contains the following reportable quantities:

40 CFR 355 EHS TPQs	40 CEK 305.4 KG	Chemical Name
	910001	Styrene
	DA 454 KO	

(OWO) noitnevnoO znogseW IsoimedO

This product contains a Schedule 3 Toxic chemical precursor.

California Proposition 65

WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

epeueo

Former date

NSDS contains all the information required by the CPR. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the

	0.91		
PFPA Rating	Lealth 2	Flammability 3	r vilidstanl
Prepared By	Polynt Regulate	ory Department	
9160 Date	8102/q92\40		
ətoN noisivəЯ	None This data sheet 15, 16	contains changes from the previous	s version in section(s):

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28 December 2017

End of Safety Data Sheet



Safety Data Sheet

FOR INDUSTRIAL USE ONLY

UNSATURATED POLYESTER RESIN IN MONOMER

Section 1. Product and company identification

Product Name:	UNSATURATED POLYESTER RESIN IN MONOMER
	STYPOL 040-2832
SDS Number:	0402832B1
Product Use:	Industrial
Manufacturer, Importer, Supplier	Polynt Composites USA, Inc. 99 East Cottage Avenue Carpentersville IL 60110
	E-Mail: MSDS@pccrusa.com
Telephone	For Emergency Transportation Information CHEMTREC US Domestic (800) 424-9300 CHEMTREC International (703) 527-3887

For additional health and safety or regulatory information, call 1 847-836-3627.

Section 2. Hazard(s) identification

EMERGENCY OVERVIEW: May cause sensitization by inhalation and skin contact. Risk of serious damage to the lungs (by aspiration).

GHS Classification

Acute Tox. 4 Inhalation, Acute Tox. 4 Oral, Carc. 2, Eye Irrit. 2, Flam. Liq. 3, Repr. 1A, Skin Irrit. 2, Skin Sens. 1, STOT RE 1

Symbol(s) of Product



Signal Word Danger

Possible Hazards

1% of the mixture consists of ingredient(s) of unknown acute toxicity

GHS HAZARD STATEMENTS

Flammable Liquid, category 3	H226	Flammable liquid and vapour.
Acute Toxicity, Oral, category 4	H302	Harmful if swallowed.
Skin Irritation, category 2	H315	Causes skin irritation.
Skin Sensitizer, category 1	H317	May cause an allergic skin reaction.

Date Printed: 3/11/2016

Eye Irritation, category 2	H319	Causes serious eye irritation.	
Acute Toxicity, Inhalation, category 4	H332	Harmful if inhaled.	
Carcinogenicity, category 2	H351	Suspected of causing cancer. Classified as Category 2 based on limited evidence on human and/or animal studies. Mixtures with concentrations of suspected carcinogens ingredients at concentration present between 0.1% and 1.0% labelling the SDS will be optional depending on authorities. If Category 2 carcinogenic present at a concentration of 1% or above labelling the SDS will be expected. Routes of exposure are dependant on ingredient form.	
Reproductive Toxicity, category 1A	H360	May damage fertility or the unborn child. Classified Category 1A known human reproductive toxicant Category 1B presumed human reproductive toxicant. Irreversible effects such as structural malfunctions, embryo/foetal lethality, post natal functional deficiencies.	
STOT, repeated exposure, category 1	H372	Causes damage to organs <or affected,="" all="" if="" known="" organs="" state=""> through prolonged or repeated exposure <state cause="" conclusively="" exposure="" hazard="" if="" is="" it="" no="" of="" other="" proven="" route="" routes="" that="" the="">.</state></or>	
GHS LABEL PRECAUTIONARY STATE	MENTS		
P201	Obtain spec	al instructions before use.	
P210	Keep away f smoking.	rom heat, hot surfaces, sparks, open flames and other ignition sources. No	
P233	Keep container tightly closed.		
P260	Do not breathe dust/fume/gas/mist/vapours/spray.		
P280	Wear protec	tive gloves/protective clothing/eye protection/face protection.	
P281	Use persona	al protective equipment as required.	
P302+P352	IF ON SKIN:	Wash with plenty of soap and water.	
P305+P351+P338	IF IN EYES: present and	Rinse cautiously with water for several minutes. Remove contact lenses, if easy to do. Continue rinsing.	
P308+P313	IF exposed of	or concerned: Get medical advice/attention.	
P312	Call a POIS	ON CENTER or doctor/physician if you feel unwell.	
P333+P313	If skin irritation	on or rash occurs: Get medical advice/attention.	
P337+P313	If eye irritation	on persists: Get medical advice/attention.	
P362	Take off con	taminated clothing.	
P403+P235	Store in a we	ell-ventilated place. Keep cool.	
P501	Dispose of c regulations.	ontents/container to in accordance with local/regional/national/international	
GHS SDS PRECAUTIONARY STATEME	INTS		
P240	Ground/bone	d container and receiving equipment.	
P241	Use explosio	on-proof electrical/ventilating/lighting// equipment.	
P242	Use only nor	n-sparking tools.	
P243	Take precau	tionary measures against static discharge.	
P270	Do no eat, d	rink or smoke when using this product.	
P363	Wash contai	minated clothing before reuse.	

Section 3. Composition/Information on ingredients

Chemical Name	CAS-No.	<u>Wt. %</u>	GHS Symbols	GHS Statements
STYRENE MONOMER	100-42-5	30 - 40	GHS02-GHS07- GHS08	H226-302-315-319-332-351-361 -372
TRI (BETA-CHLOROETHYL) PHOSPHATE	115-96-8	5.0 - 10	GHS06-GHS08	H301-331-351-360
EPOXY RESIN	25068-38-6	1.0-5.0	GHS07	H315-317-319
ETHYLBENZENE	100-41-4	0.1-1.0	GHS02-GHS07- GHS08	H225-304-332-373

The text for GHS Hazard Statements shown above (if any) is given in the "Other information" Section.

Section 4. First-aid measures

FIRST AID - EYE CONTACT: If symptoms persist, call a physician. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

FIRST AID - INGESTION: Aspiration hazard if swallowed - cap enter lungs and cause damage. If ingested, consult a physician. Do

NOT induce vomiting.

FIRST AID - INHALATION: Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effect, such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system. Give oxygen or artificial respiration if needed. Move to fresh air in case of accidental inhalation of vapours. Remove person to fresh air. If signs/symptoms continue, get medical attention.

FIRST AID - SKIN CONTACT: Wash contaminated clothing before reuse. Wash skin with soap and water for several minutes. Get medical attention if irritation develops. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Prolonged skin contact may defat the skin and produce dermatitis.

Section 5. Fire-fighting measures

Extinguishing Media:

SuitableCarbon Dioxide, Dry Chemical, Foam, Water FogNot suitableWater Jet

SPECIAL FIREFIGHTING PROCEDURES: Use full protective clothing. Use a properly-fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Water spray. Dry powder. Carbon dioxide (CO2). Do not use a solid water stream as it may scatter and spread fire. Cool containers / tanks with water spray. Vapors may be ignited by heat, pilot lights, other flames and ignition sources. Self-accelerating decomposition may occur if the specific control temperature is not maintained. Vapors may accumulate in confined areas (basement, tanks, hopper/tank cars, etc.).

UNUSUAL FIRE AND EXPLOSION HAZARDS: No Information

Section 6. Accidental release measures

ENVIRONMENTAL MEASURES: Prevent entry into waterways, sewers, basements or confined areas. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Dike to prevent entering any sewer or waterway. Transfer liquid to a holding container. Avoid breathing vapors or mists. Use non-sparking tools and equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Remove all sources of ignition. Do not flush into surface water or sanitary sewer system. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

PRECAUTIONARY MEASURES: No Information

Section 7. Handling and storage



HANDLING: Avoid contact with skin, eyes and clothing. Ground/bond container and equipment. Wear personal protective equipment. Use only in well-ventilated areas. Keep away from heat and sources of ignition. Do not breathe vapors, mist or gas.

STORAGE: Store contents under 100F (37.8C). Store drums with bung in the upright position. Electrical equipment must be grounded; suitable for the classification of the area where it is installed and conform to the National Electric Code (see NFPA 70). Keep container closed when not in use. Store and dispose according to national, state and local regulations.

HYGIENIC PRACTICES: When using, do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing. General industrial hygiene practice. Wash hands before eating, drinking, or smoking.

WORK PRACTICES: Put on appropriate personal protective equipment. Wash hands after handling chemicals and before eating, drinking, or smoking. Read and understand entire SDS before handling chemical.

SPECIAL HANDLING PROCEDURES: Put on appropriate personal protective equipment. Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, and processed. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use.

Section 8. Exposure controls/personal protection

Ingredients with Occupational Exposure Limits

Chemical Name	ACGIH TLV-TWA	ACGIH-TLV STEL	<u>OSHA PEL-TWA</u>	OSHA CEILING
STYRENE MONOMER TRI (BETA-CHLOROETHYL) PHOSPHATE	20 ppm N.E.	40 ppm N.E.	100 ppm N.E.	200 ppm N.E.

	EIHYLBENZENE
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Further Advice: MEL = Maximum Exposure Limit OES = Occupational Exposure Standard SUP = Supplier's Recommendation Sk = Skin Sensitizer N.E. = Not Established

Personal Protection



RESPIRATORY PROTECTION: When concentrations exceed the exposure limits specified, use of a NIOSH-approved dust, mist and fume respirator is recommended. Where the protection factor of the respirator may be exceeded, use of a full facepiece, supplied air, or Self Contained Breathing Apparatus (SCBA) may be necessary. Use a properly-fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.



SKIN PROTECTION: Wear suitable protective equipment. Wear chemical resistant footwear and clothing such as gloves, an apron or a whole body suit as appropriate.



EYE PROTECTION: Ensure that eyewash stations and safety showers are close to the workstation location. Safety glasses with side-shields. Wear chemical-resistant glasses and/or goggles and a face shield when eye and face contact is possible due to splashing or spraying of material.



OTHER PROTECTIVE EQUIPMENT: Use good hygiene practices. Wash face and hands before eating, drinking, and smoking. Eye wash and safety showers should be readily available.



HYGIENIC PRACTICES: When using, do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing. General industrial hygiene practice. Wash hands before eating, drinking, or smoking.

Section 9. Physical and chemical properties

Color:	Pink	Physical State:	Liquid
Odor:	Styrene	Odor Threshold:	Not Available
Density, g/cm3:	0.000	pH:	Not Available
Freeze Point, °C:	Not Available	Viscosity:	Not Available
Solubility in Water:	Insoluble	Partition Coefficient, n-octanol/ water:	Not Available
Decompostion Temp., °C:	Not Available	Flash Point, °C / F°	31 / 88
Boiling Range, °C:	0	Explosive Limits, vol%:	Not Available
Vapor Pressure:	Not Available	Auto-ignition Temp., °C:	Not Available

(See "Other information" Section for abbreviation legend)

Section 10. Stability and reactivity

STABILITY: The product is normally supplied in a stabilized form. If the permissible storage period and/or storage temperature is noticeably exceeded, the product may polymerise with heat evolution. Stable under normal conditions.

CONDITIONS TO AVOID: Avoid improper addition of promotor and/or catalyst. Avoid direct contact of MEKP catalyst with accelerator. If adding accelerator like cobalt drier, mix accelerator with base material before adding catalyst. Burning may produce obnoxious and toxic fumes. Hazardous polymerization may occur. Keep product away from heat, sparks, pilot lights, static electricity, and open flame.

INCOMPATIBILITY: Aluminium. Free radical initiators. Bases. Copper. Strong acids. Strong acids, strong bases, strong oxidizing agents. Strong oxidizing and reducing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: None under normal use.

Section 11. Toxicological information



Practical Experiences

EFFECT OF OVEREXPOSURE - EYE CONTACT: Presumed to be moderately irritating to the eyes. Exposure may cause mild irritation. Symptoms may include stinging, tearing, and redness.

EFFECT OF OVEREXPOSURE - INGESTION: May cause severe gastrointestinal disturbance with headache, nausea, vomiting and diarrhea.

EFFECT OF OVEREXPOSURE - INHALATION: Inhalation may cause irritation to the respiratory tract (nose, mouth, mucous membranes). Prolonged, repeated or high exposures may cause central nervous system depression leading to headaches, nausea, drowsiness, dizziness, and possibly narcosis. In extreme cases, may cause loss of consciousness. Ingestion of large doses may cause headaches, dizziness, nausea, vomiting, and drowsiness. Irritating to skin.

EFFECT OF OVEREXPOSURE - SKIN CONTACT: No Information

EFFECT OF OVEREXPOSURE - CHRONIC HAZARDS: Repeated or prolonged exposure may cause central nervous system damage. Prolonged skin contact may defat the skin and produce dermatitis. Prolonged or repeated exposure may cause liver and kidney effects.

CARCINOGENICITY: * This product contains the following chemicals classified by the International Agency for Research on Cancer (IARC) as 1, 2A, or 2B carcinogens:

*This product may contain a chemical which is listed in the NTP report on carcinogens.

PRIMARY ROUTE(S) OF ENTRY: Eye Contact, Ingestion, Inhalation, Skin Contact

Acute Toxicity Values

The acute effects of this product have not been tested. Data on individual components are tabulated below:

CAS-No.	Name according to EEC	Oral LD50	Dermal LD50	Vapor LC50
100-42-5	STYRENE MONOMER	1000 mg/kg Rat	N.I.	11.7 mg/L Rat
115-96-8	TRI (BETA-CHLOROETHYL) PHOSPHATE	200 mg/kg Rat	>28500 mg/kg Rabbit	>5 mg/L Rat
100-41-4	ETHYLBENZENE	3500 mg/kg Rat	15400 mg/kg Rabbit	17.2 mg/L Rat

N.I. - No Information

Section 12. Ecological information

ECOLOGICAL INFORMATION: Ecological evaluation of this material has not been performed; however, do not allow the product to be released to the environment without governmental approval/permits. Discharge into the environment must be avoided.

Section 13. Disposal considerations



DISPOSAL METHOD: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should always comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

Section 14. Transport information

SPECIAL TRANSPORT PRECAUTIONS: No Information

International transport regulations

Regulatory	UN/NA Number	Proper Shipping Name	Classes/ *PG	Reportable Quantity (RQ)
CFR	UN1866	RESIN SOLUTION	Class 3 PGIII	
IMO/IMDG	UN1866	RESIN SOLUTION	Class 3 PGIII	
ΙΑΤΑ	UN1866	RESIN SOLUTION	Class 3 PGIII	

Section 15. Regulatory information

U.S. Federal Regulations:

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Chemical Name	CAS-No.
STYRENE MONOMER	100-42-5
ETHYLENE GLYCOL	107-21-1
ETHYLBENZENE	100-41-4

SARA SECTION 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	<u>CAS-No.</u>
STYRENE MONOMER ETHYLENE GLYCOL	100-42-5 107-21-1
ETHYLBENZENE	100-41-4

TOXIC SUBSTANCES CONTROL ACT:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA components exist in this product.

U.S. State Regulations:

NEW JERSEY RIGHT-TO-KNOW:

The following hazardous materials are listed.

Chemical Name	<u>CAS-No.</u>
STYRENE MONOMER	100-42-5
ETHYLENE GLYCOL	107-21-1
MINERAL SPIRITS(PETROLEUM NAPHTHA)	64742-88-7
ETHYLBENZENE	100-41-4
HYDROQUINONE	123-31-9
MINERAL SPIRITS (STODDARD TYPE)	8052-41-3

PENNSYLVANIA RIGHT-TO-KNOW

The following hazardous ingredients are present:

Chemical Name	CAS-No.
STYRENE MONOMER	100-42-5
ETHYLENE GLYCOL	107-21-1
ETHYLBENZENE	100-41-4
DIETHYLENE GLYCOL	111-46-6
HYDROQUINONE	123-31-9
MINERAL SPIRITS (STODDARD TYPE)	8052-41-3

U.S. State Regulations: MASSACHUSETTS RIGHT-TO-KNOW:

The following hazardous materials are listed.

Chemical Name	CAS-No.
STYRENE MONOMER	100-42-5
ETHYLENE GLYCOL	107-21-1
ETHYLBENZENE	100-41-4
HYDROQUINONE	123-31-9
MINERAL SPIRITS (STODDARD TYPE)	8052-41-3

CALIFORNIA PROPOSITION 65 CARCINOGENS

Warning: The following ingredients present in the product are known to the state of California to cause Cancer:

<u>Chemical Name</u>	CAS-No.
TRI (BETA-CHLOROETHYL) PHOSPHATE	115-96-8
ETHYLBENZENE	100-41-4

CALIFORNIA PROPOSITION 65 REPRODUCTIVE TOXINS

Warning: The following ingredients present in the product are known to the state of California to cause birth defects, or other reproductive hazards.

No Proposition 65 Reproductive Toxins exist in this product.

International Regulations

CANADIAN WHMIS:

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

WHMIS Class: E	32,D2A	
Chemical Inventories	Australia inventory (AICS)	Not Determined
	Canada inventory (DSL)	Not Determined
	Japan Inventory (ENCSC)	Not Determined
	China Inventory (IECSC)	Not Determined
	Korea Inventory (KECI)	Not Determined
	New Zealand (NZIoC)	Not Determined
	Philippines (PICCS)	Not Determined
	United States Inventory (TSCA 8b)	All components are listed or exempted

Section 16. Other information, including date of preparation of the last revision

Revision Date:	11/14/2015
Reason for revision:	No Information
Datasheet produced by:	Regulatory Department

Supercedes Date:

New SDS

HMIS Ratings:

Health:	2*	Flammability:	3	Reactivity:	1	Personal Protection:	N.I.	Chronic Rating:	*

Volatile Organic Compounds, gr/ltr:

Not Determined

Text for GHS Hazard Statements shown in Section 3 describing each ingredient:

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.

May cause an allergic skin reaction.
Causes serious eye irritation.
Toxic if inhaled.
Harmful if inhaled.
Suspected of causing cancer. Classified as Category 2 based on limited evidence on human and/or animal studies. Routes of exposure are dependent on ingredient form.
May damage fertility or the unborn child.
Suspected of damaging fertility or the unborn child. Classifed Category 2 suspected human reproductive toxicant.
Causes damage to organs through prolonged or repeated exposure.
May cause damage to organs through prolonged or repeated exposure.

Icons for GHS Pictograms shown in Section 3 describing each ingredient:



Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined, N.I. - No Information

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Material Safety Data Sheet

For U.S. Only

MSDS #: 17202V1

WHMIS (Canada)	NFPA (USA)	HMIS (USA)	Protective clothing
	Fire 3 Health Reactivity	Health hazards * 2 Flammability 3	
B-2 D-2A D-2B	Specific hazard	Physical hazards1Personal protectionX	

Section 1. Chemical product and company identification			
Trade name	H884-IVA-20		
Product type	Polyester Resin Solution		
Chemical family	Aromatic.		
Material uses	Used in the manufacture of thermoset plastic parts.		
Manufacturer	AOC, LLC 950 Highway 57 East Collierville, TN U.S.A. 38017 Website: www.aoc-resins.com Phone Number: (901) 854-2800 8am-5pm (Central Time) Mon-Fri		
Section 2. Haza	rds identification		
OSHA status This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.12			
Routes of entry Eye contact, Skin contact, Inhalation, Ingestion			
Potential acute he effects	 Eyes: Severe eye irritant which may result in redness, burning, tearing and blurred vision. Skin: Skin irritant which may result in burning sensation. Repeated or prolonged skin contact may cause dermatitis. Ingestion: Ingestion may result in mouth, throat and gastrointestinal irritation, nausea, vomiting and diarrhea. Inhalation: Inhalation of spray mist or liquid vapors may cause upper respiratory irritation and possible central nervous system effects including headaches, nausea, vomiting, dizziness, drowsiness, loss of coordination, impaired judgement and general weakness. 		
Potential chronic effects	health CARCINOGENIC EFFECTS: Styrene: Classified A4 (not classifiable for human or animal) by ACGIH. Classified 2B (possible for human) by IARC. Classified as "reasonably anticipated to be a human carcinogen" by NTP. An increased incidence of lung tumors was observed in mice from a recent inhalation study. The relevance of this finding is uncertain since data from other long-term animal studies and from epidemiology studies of workers exposed to styrene do not provide a basis to conclude that styrene is carcinogenic to humans. Cobalt 2-Ethylhexanoate: Classified A3 (proven for animal) by ACGIH. Classified 2B (possible for human) by IARC.		

MUTAGENIC or TERATOGENIC EFFECTS: No known effect according to our database.

H884-IVA-20

Section 3. Composition/information on ingredients

Name	CAS #	% by weight
1) Styrene 2) Cobalt 2-Ethylhexanoate	100-42-5 136-52-7	32.0 0.1 - 1

Section 4. First aid measures		
Eye contact	Flush with a continuous flow of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Use of buffered baby shampoo will aid in removal. Seek medical attention.	
Skin contact	Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. If irritation persists, seek medical attention.	
Inhalation	Move the victim to a safe area as soon as possible. Allow the victim to rest in a well-ventilated area. If breathing is difficult, give oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.	
Ingestion	Do not induce vomiting. Seek immediate medical attention.	

Section 5. Fire-fighting measures

The product is:	Flammable liquid, Class IC.
Auto-ignition temperature	914°F(490°C) Styrene
Flash point	87.6°F (31°C) Styrene
Flammable limits	Lower: 0.9% Upper: 6.8% (Styrene)
Products of combustion	May produce carbon monoxide, carbon dioxide, and irritating or toxic vapors, gases or particulate.
Fire hazard	Flammable in the presence of open flames, sparks, or heat.
Explosion hazard	Can react with oxidizing materials. Explosive in the form of vapor when exposed to heat or flame. Material may polymerize when container is exposed to heat (fire) and polymerization will increase pressure in a closed container which may cause the container to rupture violently.
Fire-fighting media and instructions	SMALL FIRE: Use carbon dioxide, foam, dry chemical or water fog to extinguish. LARGE FIRE: Evacuate surrounding areas. Use carbon dioxide, foam, dry chemical or water fog to extinguish. Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective clothing. Cool containing vessels with water spray in order to prevent pressure build-up, autoignition or explosion. Prevent run off to sewers or other water ways.

Section 6. Accidental release measures

Small spill	Absorb with an inert material and place in an appropriate waste disposal container.
Large spill	Stop leak if without risk. Eliminate all ignition sources. Contain with an inert material, recover as much as possible and place the remainder in an appropriate waste disposal container. Warn unauthorized personnel to move away. Prevent entry into sewers or confined areas.

Section 7. Handling and storage

Handling

WARNING! Use only in well-ventilated areas. Store away from direct sunlight. Avoid inhalation and contact with eyes, skin, and clothing. Wear appropriate personal protective equipment for your task. Ground and bond all containers when transferring the material. Empty containers may retain product and product vapor. Do not expose to heat, flame, sparks or other ignition sources such as cutting, welding, drilling, grinding or static electricity. Do not pressurize. Provide adequate safety showers and eyewashes in the area of use.

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Section 7. Handling and storage

Storage

Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, wellventilated place. Containers should be grounded.

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Exposure limits	Styrene Cobalt 2-Ethylhexanoate	ACGIH TLV (United States, 3/2012). Absorbed through skin. TWA: 20 ppm 8 hours. TWA: 85 mg/m ³ 8 hours. STEL: 40 ppm 15 minutes. STEL: 170 mg/m ³ 15 minutes. OSHA PEL Z2 (United States, 11/2006). TWA: 100 ppm 8 hours. AMP: 600 ppm 5 minutes. CEIL: 200 ppm NIOSH REL (United States, 6/2009). TWA: 50 ppm 10 hours. Form: TWA: 215 mg/m ³ 10 hours. STEL: 100 ppm 15 minutes. STEL: 425 mg/m ³ 15 minutes. OSHA PEL (United States). TWA: 0.1 mg/m ³	
Engineering controls	Provide exhaust ventilation or other engineering their respective occupational exposure limits. Pruse.	controls to keep the airborne concentrations of vapors below ovide adequate safety showers and eyewashes in the area of	
Personal protection	 Personal protective equipment may vary depending on the job being performed. Eye/face: Wear eye protection such as safety glasses with side shields, splash goggles or face shield with safety glasses. Skin: Avoid skin contact. Impervious gloves should be worn. Other items may include long sleeves, lab coats, or impervious jackets. Respiratory: Determine if airborne concentrations are below the recommended exposure limits in accordance your company's PPE program and regulatory requirements. If they are not, select a NIOSH-approved respirator that provides adequate protection from the concentration levels encountered. Air-purifying respirators are generally adequate for organic vapors. Use positive pressure, supplied-air respirators if there is potential for an uncontrolled release, if exposure levels are unknown, or under circumstances where air-purifying respirators may not provide adequate protection. Reference OSHA 29 CFR 1910.134. 		
Personal protection in case of a large spill	Chemical resistant gloves, full protective suit, an regulation 29 CFR 1910.134. A self-contained b product vapors.	d boots. Respiratory protection in accordance with OSHA reathing apparatus should be used to avoid inhalation of the	
Section 9. Physical and o	chemical properties		
Physical state	Liquid.		
Color	Amber.		
Odor	Aromatic.		
Molecular weight (g/mol)	1000 to 15000		
Boiling point	293°F(145°C) Styrene		
Melting point	Not available.		
pH (1% soln/water)	Not applicable.		
Vapor pressure	4.5 mm Hg@ 68°F (20°C) Styrene		
Vapor density	3.59 Styrene (Air = 1)		
Specific gravity	1.1 (Water = 1)		
Partition coefficient: n- octanol/water	Not available.		

Section 9. Physical and chemical properties

Evaporation rate	Not available.	
Odor threshold	0.14 ppm Styrene	
Solubility in water	Slight.	
Dispersibility properties	Not dispersed in water.	

Section 10. Stability and reactivity		
Stability	This product is normally stable, but can become unstable at elevated temperatures.	
Instability temperature	>170°F (77°C)	
Conditions of instability	Heat.	
Incompatibility with various substances	Polymerizes in the presence of organic peroxides, oxidizing materials, or heat.	
Corrosivity	Our database contains no additional remark on the corrosivity of this product	

Section 11. Toxicological information

•					
Toxicity to animals	Name	Result	Species	Dose	Exposure
	Cobalt 2-Ethylhexanoate	LD50 Dermal	Rabbit	>5 g/kg	-
		LD50 Oral	Rat	1.22 g/kg	-
		LD50 Oral	Rat	6171 mg/kg	-
	Styrene	LC50 Inhalation Gas.	Rat	2770 ppm	4 hours
		LC50 Inhalation	Rat	11800 mg/m ³	4 hours
		Vapor		·	
		LD50 Oral	Rat	2650 mg/kg	-
Special remarks on toxicity to animals	Lung effects that have been observed i mouse specific enzymes (not in human	n mouse studies have s) that enable the med	been sho chanism fo	wn in some studies r producing cancer	to be the result of in mice.
Special remarks on chronic effects on humans	A study of long term effects of workers indicated a possible mild hearing loss.	exposed to styrene lev	vels in the	range of 25-35 ppr	n, 8 hour TWA,
Special remarks on other toxic effects on humans	No additional remark.				

Section 12. Ecological information

Ecotoxicity Toxic to aquatic organisms. Should not be released to sewage system or other bodies of water at concentrations above limits established in regulations or permits.

Section 13. Disposal considerations

Waste disposal

Recycle to process, if possible. Consult your local or regional authorities. Ignitable characteristic.

Section 14. Transport information

DOT	UN1866; Resin Solution; 3; III.	Labels
TDG	UN1866; Resin Solution; 3; III.	3
IATA/IMDG	UN1866; Resin Solution; 3; III	

MSDS #: 17202V1	H	384-IVA-20		
Section 14. Transport	information			
Additional information	US regulations require the reporting of spills when the amount exceeds the Reportable Quantity (RQ) for specific components of this material. See CERCLA in Section 15, Regulatory Information, for the Reportable Quantities.			
Section 15. Regulatory	y information			
Other regulations	This section does not reference all applicable regulatory compliance lists.			
	TSCA: All ingredients are listed or compliant with TSCA.			
	DSL: All ingredients are listed or compliant with the NSNR.			
Proposition 65 Warning: This product contains a chemical(s) known to the State of Californi cancer, birth defects and/or reproductive harm.				
	SARA 302 component(s): None.			
	SARA 313 component(s): Styrene, Cobalt 2-Ethylhexanoate.			
	CERCLA(RQ): Styrene - 1000 lbs. (453.6 kg)			
Section 16. Other info	rmation			
Prepared by	AOC, LLC - Corporate Regulatory Affairs. IN			

LEGAL DISCLAIMER

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Safety Data Sheet

FOR INDUSTRIAL USE ONLY

HAP33 BVI CLASSIC YELLOW

Section 1. Product and company identification

Product Name:	HAP33 BVI CLASSIC YELLOW
	ARMORCOTE
SDS Number:	991YP451
Product Use:	Industrial
Manufacturer, Importer, Supplier	Polynt Composites USA, Inc. 99 East Cottage Avenue Carpentersville IL 60110
	E-Mail: MSDS@pccrusa.com
Telephone	For Emergency Transportation Information CHEMTREC US Domestic (800) 424-9300 CHEMTREC International (703) 527-3887

For additional health and safety or regulatory information, call 1 847-836-3627.

Section 2. Hazard(s) identification

EMERGENCY OVERVIEW: May cause sensitization by inhalation and skin contact. Risk of serious damage to the lungs (by aspiration).

GHS Classification

Acute Tox. 4 Inhalation, Carc. 2, Eye Irrit. 2, Flam. Liq. 3, Repr. 2, Skin Irrit. 2, Skin Sens. 1, STOT RE 1

Symbol(s) of Product



Signal Word Danger

Possible Hazards

2% of the mixture consists of ingredient(s) of unknown acute toxicity

GHS HAZARD STATEMENTS		
Acute Toxicity, Inhalation, category 4	H332	Harmful if inhaled.
Carcinogenicity, category 2	H351	Suspected of causing cancer. Classified as Category 2 based on limited evidence on human and/or animal studies. Routes of exposure are dependant on ingredient form.
Eye Irritation, category 2	H319	Causes serious eye irritation.

Flammable Liquid, category 3	H226	Flammable liquid and vapour.	
Reproductive Toxicity, category 2	H361 Suspected of damaging fertility or the unborn child. Classifed Category 2 suspected human reproductive toxicant.		
STOT, repeated exposure, category 1	H372 Causes damage to organs through prolonged or repeated exposure.		
Skin Irritation, category 2	H315	Causes skin irritation.	
Skin Sensitizer, category 1	H317	May cause an allergic skin reaction.	
GHS LABEL PRECAUTIONARY STATE	MENTS		
P201	Obtain speci	al instructions before use.	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.		
P260	Do not breathe dust/fume/gas/mist/vapours/spray.		
P280	Wear protective gloves/protective clothing/eye protection/face protection.		
P281	Use personal protective equipment as required.		
P302+P352	IF ON SKIN: Wash with plenty of soap and water.		
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.		
P308+P313	IF exposed or concerned: Get medical advice/attention.		
P312	Call a POISON CENTER or doctor/physician if you feel unwell.		
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.		
P337+P313	If eye irritation persists: Get medical advice/attention.		
P362	Take off contaminated clothing.		
GHS SDS PRECAUTIONARY STATEME	NTS		
P240	Ground/bond container and receiving equipment.		
P241	Use explosion-proof electrical/ventilating/lighting// equipment.		
P242	Use only non-sparking tools.		
P243	Take precautionary measures against static discharge.		
P270	Do no eat, drink or smoke when using this product.		
P363	Wash contaminated clothing before reuse.		

Section 3. Composition/Information on ingredients

Chemical Name	CAS-No.	<u>Wt. %</u>	GHS Symbols	GHS Statements
STYRENE MONOMER	100-42-5	24.00	GHS02-GHS07- GHS08	H226-302-315-319-332-351-361 -372
METHYL METHACRYLATE	80-62-6	5.0 - 10	GHS02-GHS07	H225-315-317-332-335
TITANIUM DIOXIDE	13463-67-7	1.0-5.0	No Information	No Information
LIGHT AROMATIC NAPHTHA	64742-95-6	0.1-1.0	GHS07-GHS08	H304-332-351
COBALT 2-ETHYLHEXANOATE, 12% COBALT	136-52-7	0.1-1.0	GHS06-GHS08	H302-312-331-361

The text for GHS Hazard Statements shown above (if any) is given in the "Other information" Section.

Section 4. First-aid measures



FIRST AID - EYE CONTACT: If symptoms persist, call a physician. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

FIRST AID - INGESTION: Aspiration hazard if swallowed - can enter lungs and cause damage. If ingested, consult a physician. Do NOT induce vomiting.

FIRST AID - INHALATION: Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effect, such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system. Give oxygen or artificial respiration if needed. Move to fresh air in case of accidental inhalation of vapours. Remove person to fresh air. If signs/symptoms continue, get medical attention.

FIRST AID - SKIN CONTACT: Wash contaminated clothing before reuse. Wash skin with soap and water for several minutes. Get medical attention if irritation develops. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Prolonged skin contact may defat the skin and produce dermatitis.

Section 5. Fire-fighting measures

Extinguishing Media:

SuitableCarbon Dioxide, Dry Chemical, Foam, Water FogNot suitableWater Jet

SPECIAL FIREFIGHTING PROCEDURES: Use full protective clothing. Use a properly-fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Water spray. Dry powder. Carbon dioxide (CO2). Do not use a solid water stream as it may scatter and spread fire. Cool containers / tanks with water spray. Vapors may be ignited by heat, pilot lights, other flames and ignition sources. Self-accelerating decomposition may occur if the specific control temperature is not maintained. Vapors may accumulate in confined areas (basement, tanks, hopper/tank cars, etc.).

UNUSUAL FIRE AND EXPLOSION HAZARDS: No Information

Section 6. Accidental release measures

ENVIRONMENTAL MEASURES: Prevent entry into waterways, sewers, basements or confined areas. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Dike to prevent entering any sewer or waterway. Transfer liquid to a holding container. Avoid breathing vapors or mists. Use non-sparking tools and equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Remove all sources of ignition. Do not flush into surface water or sanitary sewer system. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

PRECAUTIONARY MEASURES: No Information

Section 7. Handling and storage



HANDLING: Avoid contact with skin, eyes and clothing. Ground/bond container and equipment. Wear personal protective equipment. Use only in well-ventilated areas. Keep away from heat and sources of ignition. Do not breathe vapors, mist or gas.

STORAGE: Store contents under 100F (37.8C). Store drums with bung in the upright position. Electrical equipment must be grounded; suitable for the classification of the area where it is installed and conform to the National Electric Code (see NFPA 70). Store in cool well ventilated space away from incompatiable materials. Keep container closed when not in use. Store and dispose according to national, state and local regulations.

HYGIENIC PRACTICES: When using, do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing. General industrial hygiene practice. Wash hands before eating, drinking, or smoking.

WORK PRACTICES: Put on appropriate personal protective equipment. Wash hands after handling chemicals and before eating, drinking, or smoking. Read and understand entire SDS before handling chemical.

SPECIAL HANDLING PROCEDURES: Put on appropriate personal protective equipment. Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, and processed. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use.

Section 8. Exposure controls/personal protection

Ingredients with Occupational Exposure Limits

Chemical Name	ACGIH TLV-TWA	ACGIH-TLV STEL	<u>OSHA PEL-TWA</u>	OSHA CEILING
STYRENE MONOMER	20 ppm	40 ppm	100 ppm	200 ppm
TITANIUM DIOXIDE	10 mg/m3	N.E.	15 mg/m3	N.E.
LIGHT AROMATIC NAPHTHA	N.E.	N.E.	N.E.	N.E.
COBALT 2-2 THE LEXANDATE, 12 %	IN.L.	IN.L.	N.L.	IN.∟.

Further Advice: MEL = Maximum Exposure Limit OES = Occupational Exposure Standard SUP = Supplier's Recommendation Sk = Skin Sensitizer N.E. = Not Established



RESPIRATORY PROTECTION: When concentrations exceed the exposure limits specified, use of a NIOSH-approved dust, mist and fume respirator is recommended. Where the protection factor of the respirator may be exceeded, use of a full facepiece, supplied air, or Self Contained Breathing Apparatus (SCBA) may be necessary. Use a properly-fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.



SKIN PROTECTION: Wear suitable protective equipment. Wear chemical resistant footwear and clothing such as gloves, an apron or a whole body suit as appropriate.

EYE PROTECTION: Ensure that eyewash stations and safety showers are close to the workstation location. Safety glasses with side-shields. Wear chemical-resistant glasses and/or goggles and a face shield when eye and face contact is possible due to splashing or spraying of material.



OTHER PROTECTIVE EQUIPMENT: Use good hygiene practices. Wash face and hands before eating, drinking, and smoking. Eye wash and safety showers should be readily available.



HYGIENIC PRACTICES: When using, do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing. General industrial hygiene practice. Wash hands before eating, drinking, or smoking.

Section 9. Physical and chemical properties

Color:	Yellow orange	Physical State:	Liquid
Odor:	Moderate aromatic	Odor Threshold:	Not Available
Density, g/cm3:	1.246	pH:	Not Available
Freeze Point, °C:	Not Available	Viscosity:	Not Available
Solubility in Water:	Insoluble	Partition Coefficient, n-octanol/ water:	Not Available
Decompostion Temp., °C:	Not Available	Flash Point, °C / F°	26 / 79
Boiling Range, °C:	100	Explosive Limits, vol%:	Not Available
Vapor Pressure:	Not Available	Auto-ignition Temp., °C:	Not Available

(See "Other information" Section for abbreviation legend)

Section 10. Stability and reactivity

STABILITY: The product is normally supplied in a stabilized form. If the permissible storage period and/or storage temperature is noticeably exceeded, the product may polymerise with heat evolution. Stable under normal conditions.

CONDITIONS TO AVOID: Avoid improper addition of promotor and/or catalyst. Avoid direct contact of MEKP catalyst with accelerator. If adding accelerator like cobalt drier, mix accelerator with base material before adding catalyst. Burning may produce obnoxious and toxic fumes. Hazardous polymerization may occur. Keep product away from heat, sparks, pilot lights, static electricity, and open flame.

INCOMPATIBILITY: Aluminium. Free radical initiators. Bases. Copper. Strong acids. Strong acids, strong bases, strong oxidizing agents. Strong oxidizing and reducing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: None under normal use.

Section 11. Toxicological information



Practical Experiences

EFFECT OF OVEREXPOSURE - EYE CONTACT: Presumed to be moderately irritating to the eyes. Exposure may cause mild irritation. Symptoms may include stinging, tearing, and redness.

EFFECT OF OVEREXPOSURE - INGESTION: May cause severe gastrointestinal disturbance with headache, nausea, vomiting and Page 4 / 8

diarrhea.

EFFECT OF OVEREXPOSURE - INHALATION: Inhalation may cause irritation to the respiratory tract (nose, mouth, mucous membranes). Prolonged, repeated or high exposures may cause central nervous system depression leading to headaches, nausea, drowsiness, dizziness, and possibly narcosis. In extreme cases, may cause loss of consciousness. Ingestion of large doses may cause headaches, dizziness, nausea, vomiting, and drowsiness. Irritating to skin.

EFFECT OF OVEREXPOSURE - SKIN CONTACT: No Information

EFFECT OF OVEREXPOSURE - CHRONIC HAZARDS: Repeated or prolonged exposure may cause central nervous system damage. Prolonged skin contact may defat the skin and produce dermatitis. Prolonged or repeated exposure may cause liver and kidney effects.

CARCINOGENICITY: * This product contains the following chemicals classified by the International Agency for Research on Cancer (IARC) as 1, 2A, or 2B carcinogens:

*This product may contain a chemical which is listed in the NTP report on carcinogens.

This product may contain Titanium Dioxide, which is listed by IARC as possibly carcinogenic to humans (Group 2B). This listing is based on inadequate evidence of carcinogenicity in humans and sufficient evidence in experimental animals. This classification is relevant when exposed to titanium dioxide in dust or powder form only, including cured product that is subject to sanding, grinding, cutting, or other surface preparation activities.

PRIMARY ROUTE(S) OF ENTRY: Eye Contact, Ingestion, Inhalation, Skin Contact

Acute Toxicity Values

The acute effects of this product have not been tested. Data on individual components are tabulated below:

CAS-No.	Name according to EEC	<u>Oral LD50</u> 1000 mg/kg Bat	Dermal LD50	Vapor LC50
80-62-6	METHYL METHACRYLATE	7900 mg/kg Rat	N.I.	N.I.
13463-67-7	TITANIUM DIOXIDE	>10000 mg/kg Rat	N.I.	N.I.
64742-95-6	LIGHT AROMATIC NAPHTHA	N.I.	>2000 mg/kg Rabbit	N.I.

N.I. - No Information

Section 12. Ecological information

ECOLOGICAL INFORMATION: Ecological evaluation of this material has not been performed; however, do not allow the product to be released to the environment without governmental approval/permits. Discharge into the environment must be avoided.

Section 13. Disposal considerations



DISPOSAL METHOD: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should always comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

Section 14. Transport information

SPECIAL TRANSPORT PRECAUTIONS: No Information

International transport regulations

Regulatory	UN/NA Number	Proper Shipping Name	Classes/ *PG	Reportable Quantity (RQ)
CFR	UN1866	RESIN SOLUTION, flammable	Class 3 PGIII	
IMO/IMDG	UN1866	RESIN SOLUTION, flammable	Class 3 PGIII	
ΙΑΤΑ	UN1866	RESIN SOLUTION, flammable	Class 3 PGIII	

Section 15. Regulatory information

U.S. Federal Regulations:

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Chemical Name	CAS-No.
STYRENE MONOMER	100-42-5
METHYL METHACRYLATE	80-62-6
BENZOIC ACID	65-85-0
ETHYLENE GLYCOL	107-21-1

SARA SECTION 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	<u>CAS-No.</u>
STYRENE MONOMER METHYL METHACRYLATE ETHYLENE GLYCOL	100-42-5 80-62-6 107-21-1

TOXIC SUBSTANCES CONTROL ACT:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA components exist in this product.

U.S. State Regulations: NEW JERSEY RIGHT-TO-KNOW:

The following hazardous materials are listed.

CAS-No.
100-42-5
80-62-6
13463-67-7
107-21-1
34590-94-8
100-41-4
64742-88-7
67-63-0
150-76-5
8052-41-3
8032-32-4
123-31-9
67-56-1
123-86-4

PENNSYLVANIA RIGHT-TO-KNOW

The following hazardous ingredients are present:

Chemical Name	CAS-No.
STYRENE MONOMER	100-42-5
METHYL METHACRYLATE	80-62-6
TITANIUM DIOXIDE	13463-67-7
ETHYLENE GLYCOL	107-21-1
DIPROPYLENE GLYCOL MONOMETHYL ETHER	34590-94-8
DIETHYLENE GLYCOL	111-46-6
ETHYLBENZENE	100-41-4
DIETHYLENE GLYCOL	111-46-6
ISOPROPYL ALCOHOL	67-63-0
4-METHOXYPHENOL	150-76-5

MINERAL SPIRITS (STODDARD TYPE)	8052-41-3
T-BUTYL CATECHOL	98-29-3
MINERAL SPIRITS	8032-32-4
HYDROQUINONE	123-31-9
METHYL ALCOHOL	67-56-1
N-BUTYL ACETATE	123-86-4

U.S. State Regulations:

MASSACHUSETTS RIGHT-TO-KNOW:

The following hazardous materials are listed.

Chemical Name	CAS-No.
STYRENE MONOMER	100-42-5
METHYL METHACRYLATE	80-62-6
TITANIUM DIOXIDE	13463-67-7
ETHYLENE GLYCOL	107-21-1
DIPROPYLENE GLYCOL MONOMETHYL ETHER	34590-94-8
ETHYLBENZENE	100-41-4
ISOPROPYL ALCOHOL	67-63-0
4-METHOXYPHENOL	150-76-5
MINERAL SPIRITS (STODDARD TYPE)	8052-41-3
T-BUTYL CATECHOL	98-29-3
HYDROQUINONE	123-31-9
METHYL ALCOHOL	67-56-1
N-BUTYL ACETATE	123-86-4

CALIFORNIA PROPOSITION 65 CARCINOGENS

Warning: The following ingredients present in the product are known to the state of California to cause Cancer:

Chemical Name	CAS-No.
TITANIUM DIOXIDE	13463-67-7
ETHYLBENZENE	100-41-4
CARBON BLACK	1333-86-4

CALIFORNIA PROPOSITION 65 REPRODUCTIVE TOXINS

Warning: The following ingredients present in the product are known to the state of California to cause birth defects, or other reproductive hazards.

Chemical Name METHYL ALCOHOL CAS-No. 67-56-1

International Regulations

CANADIAN WHMIS:

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

WHMIS Class: B	2,D2A	
Chemical Inventories	Australia inventory (AICS)	Not Determined
	Canada inventory (DSL)	Not Determined
	Japan Inventory (ENCSC)	Not Determined
	China Inventory (IECSC)	Not Determined
	Korea Inventory (KECI)	Not Determined
	New Zealand (NZIoC)	Not Determined
	Philippines (PICCS)	Not Determined
	United States Inventory (TSCA 8b)	All components are listed or exempted

Section 16. Other information, including date of preparation of the last revision

Revision Date:
Reason for revision:
Datasheet produced by:

Supercedes Date:

New SDS

HMIS Ratings:

Health:	2*	Flammability:	3	Reactivity:	2	Personal Protection:	N.I.	Chronic Rating:	*
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Volatile Organic Compounds, gr/ltr: Not Determined

10/3/2016

No Information

Regulatory Department

Text for GHS Hazard Statements shown in Section 3 describing each ingredient:

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer. Classified as Category 2 based on limited evidence on human and/or animal studies. Routes of exposure are dependent on ingredient form.
H361	Suspected of damaging fertility or the unborn child. Classifed Category 2 suspected human reproductive toxicant.
H372	Causes damage to organs through prolonged or repeated exposure.

Icons for GHS Pictograms shown in Section 3 describing each ingredient:



Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined, N.I. - No Information

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12-Month Rolling Emissions Summary

Molded Plastics Industries, Incorporated, Holt, Michigan 2023

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Year

7/17/2024			12.6	15.4			4.1					
	E	U-SPRAYBOC	THGL1	EU-SPRAYBOOTHRS1			FG-MOLDRELEASE (EU-MISC2382)					
-		VOC	r		VOC		VOC			Acetone		
	/	142				112		/	142			142
	ton/	tons/12-mo	In compliance			tons/12-mo	In compliance	ton/	tons/12-mo	In compliance		tons/12-mo
Month/Year	month	rolling	(<12.6 tpy)	ton/month		rolling	(<15.4 tpy)	month	rolling	(<4.1 tpy)	ton/month	rolling
Jan-21	0.36	1.56	Yes	0.36		1.56	Yes	0.49	3.38	Yes	0.82	6.99
Feb-21	0.16	1.62	Yes	0.16		1.62	Yes	0.24	3.48	Yes	0.36	6.79
Mar-21	0.53	2.07	Yes	0.53		2.07	Yes	0.30	3.68	Yes	0.36	6.48
Apr-21	0.11	2.08	Yes	0.11		2.08	Yes	0.30	3.62	Yes	0.91	6.63
IVIay-21	0.08	2.08	Yes	0.08		2.08	Yes	0.30	3.72	Yes	0.37	6.24
Jun-21	0.03	2.06	Yes	0.03		2.06	Yes	0.10	3.34	Yes	0.36	6.05
Jui-21	0.00	1.95	Yes	0.00		1.95	Yes	0.00	3.04	Yes	-	5.53
Aug-21	0.19	2.08	Yes	0.19		2.08	Yes	0.35	2.58	Yes	0.31	5.16
Sep-21	0.07	2.03	Yes	0.07		2.03	Yes	0.66	3.21	Yes	0.95	5.70
Oct-21	0.09	1.87	Yes	0.09		1.87	Yes	0.25	3.27	Yes	0.39	5.55
Nov-21	0.26	2.04	Yes	0.26		2.04	Yes	0.34	3.44	Yes	0.37	5.56
Dec-21	0.09	1.97	Yes	0.09	1.02	1.97	Yes	0.00	3.32	Yes	-	5.20
Jan-22	0.08	1.69	Yes	1.92	1.92	3.53	Yes	1.39	8.98	NO	0.10	6.77
Feb-22	0.19	1.72	Yes	5.06	5.06	8.43	Yes	0.70	9.44	NO	2.73	9.15
IVIdI-22	0.29	1.48	Yes	8.91	8.91	10.81	Yes	0.41	9.55	NO	(0.15)	8.64
Apr-22	0.24	1.60	Yes	1.85	1.85	18.54	Yes	0.38	9.63	NO	0.94	8.67
IVIdy-22	0.24	1.76	Yes	7.00	7.00	20.12	Yes	0.33	9.67	No	(1.00)	9.19
Jun-22	0.21	1.94	Yes	4.70	4.70	30.79	Yes	0.04	9.60	No	(1.09)	7.75
Jui-22	0.12	2.00	Yes	0.04	0.04	25 /1	Yes	0.29	9.69	No	- (0.21)	7.75
Aug-22	0.13	2.00	Voc	4.17	4.17	25.41	Yes	0.38	9.93	No	(0.21)	7.22 E 14
Oct 22	0.01	1.93	Voc	0.00	0.00	25.33	Yes	0.00	9.27	No	(1.14)	1.14
Nov-22	0.03	1.91	Ves	4.00	4.00	39.00	Ves	0.04	9.80	No	(0.10)	4.05
Dec-22	0.00	1.05	Ves	4.00	4.00	43.02	Vos	0.00	4.76	No	0.31	2 30
Jan-23	0.00	1.50	Ves	0.00	15 70	56.80	No	0.01	7.8/	No	0.01	6.68
Feb-23	0.00	3.07	Ves	0.00	9.40	61 14	No	0.23	8 1 2	No	0.00	6 32
Mar-23	0.00	2 54	Yes	0.00	6.00	58 23	No	0.52	8.00	No	(0.15)	5.81
Apr-23	0.06	2.31	Yes	0.06	5 90	62.28	No	0.10	8.05	No	(0.05)	4 85
May-23	0.06	2.10	Yes	0.06	9.60	64 22	No	0.33	8.18	No	(1.09)	3 40
lun-23	0.00	2.43	Yes	0.00	4.20	63.72	No	0.04	8.12	No	(0.10)	2.94
lul-23	0.00	2.43	Yes	0.00	4.20	67.28	No	0.02	8.14	No	0.00	2.94
Aug-23	0.07	2.31	Yes	0.07	6.00	69.11	No	0.09	7.88	No	(0.21)	2.42
Sep-23	0.12	2.36	Yes	0.12	4.90	74.01	No	0.01	7.24	No	(0.15)	1.32
Oct-23	0.09	2.37	Yes	0.09	2.10	76.11	No	0.10	7.09	No	0.89	1.82
Nov-23	0.06	2.16	Yes	0.06	6.00	78.11	No	0.00	6.75	No	0.00	1.45
Dec-23	0.06	0.57	Yes	0.06	0.00	74.00	No	0.02	2.00	Yes	(0.68)	(1.52)
	2.00	2107		2100					=.55		(1.00)	(=:3=)

16.2	200		50 12.5						
	FG-RULE 2	Source-Wide							
	Coating	Styrene				Ethylbenzene			
	Gallons/month				In				
In compliance	(minus water as	In Compliance	ton/	tons/12-mo	compliance	ton/	tons/12-mo	In compliance	
(<16.2 tpy)	applied)	(<200 gal/month)	month	rolling	(<50.0 tpy)	month	rolling	(<12.5 tpy)	
Yes	99.75	Yes	0.22	1.10	Yes	0.00	0.02	Yes	
Yes	72.00	Yes	0.12	1.16	Yes	0.00	0.02	Yes	
Yes	48.00	Yes	0.43	1.53	Yes	0.00	0.02	Yes	
Yes	67.00	Yes	0.07	1.53	Yes	0.00	0.02	Yes	
Yes	26.00	Yes	0.05	1.50	Yes	0.00	0.02	Yes	
Yes	27.00	Yes	0.02	1.44	Yes	0.00	0.02	Yes	
Yes	18.00	Yes	-	1.34		0.00	0.02	Yes	
Yes	16.55	Yes	0.17	1.45	Yes	0.00	0.02	Yes	
Yes	95.00	Yes	0.02	1.40	Yes	0.00	0.02	Yes	
Yes	-	Yes	0.09	1.34	Yes	-	0.02	Yes	
Yes	52.96	Yes	0.19	1.47	Yes	0.00	0.02	Yes	
Yes	63.00	Yes	0.04	1.42	Yes	0.00	0.02	Yes	
Yes	23.00	Yes	0.61	5.05	Yes	0.00	0.02	Yes	
Yes	27.00	Yes	0.49	5.41	Yes	-	0.02	Yes	
Yes	18.00	Yes	0.30	5.29	Yes	0.00	0.02	Yes	
Yes	12.00	Yes	0.26	5.48	Yes	0.00	0.02	Yes	
Yes	17.00	Yes	0.49	5.92	Yes	0.00	0.02	Yes	
Yes	8.00	Yes	0.09	5.99	Yes	0.00	0.01	Yes	
Yes	-	Yes	0.12	6.12	Yes	-	0.01	Yes	
Yes	-	Yes	0.41	6.35	Yes	0.00	0.01	Yes	
Yes	5.00	Yes	0.01	6.33	Yes	-	0.01	Yes	
Yes	31.00	Yes	0.05	6.30	Yes	0.00	0.01	Yes	
Yes	20.00	Yes	0.20	6.31	Yes	0.00	0.01	Yes	
Yes	10.00	Yes	0.21	3.23	Yes	-	0.00	Yes	
Yes	64.25	Yes	0.61	5.05	Yes	0.00	0.03	Yes	
Yes	8.00	Yes	0.52	5.44	Yes	0.00	0.02	Yes	
Yes	10.00	Yes	0.29	5.31	Yes	-	0.02	Yes	
Yes	20.00	Yes	0.29	5.53	Yes	-	0.02	Yes	
Yes	62.25	Yes	0.52	6.00	Yes	0.00	0.02	Yes	
Yes	8.00	Yes	0.08	6.07	Yes	0.00	0.02	Yes	
Yes	2.00	Yes	0.12	6.19	Yes	-	0.02	Yes	
Yes	42.00	Yes	0.41	6.43	Yes	0.00	0.02	Yes	
Yes	14.75	Yes	0.23	6.64	Yes	0.00	0.02	Yes	
Yes	30.00	Yes	0.09	6.64	Yes	0.00	0.02	Yes	
Yes	16.50	Yes	0.25	6.70	Yes	0.00	0.02	Yes	
Yes	23.00	Yes	0.12	3.54	Yes	0.00	0.01	Yes	
Page 1 of 1

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	References			Parts	lb			WWWW HA	Plimit	
FG-MOLDRELEAS	E (EU-MISC2382)																				Boats	eal	Cleanir	ng Solvents	0		
Molded Plastics I	industries, Incorporated, Holt, Michigan	0.006152796			Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Total	1				0		0			
					1	2	3	4	5	6	7	8	9	10	11	12											
YEAR		VO	C Emissions (ton)		0.25	0.52	0.18	0.35	0.43	0.04	0.02	0.09	0.01	0.10	0.00	0.02	2.0	4.002.68	lbs								
2023		Acet	one Emissions (ton)	0.00	0.00	(0.15)	(0.05)	(1.09)	(0.10)	0.00	(0.21)	(0.15)	0.89	0.00	(0.68)	(1.5)											
		Stvr	ene Emissions (lb)		104.72	314.17	209.44	104.72	209.44	-	-	261.81	-	-	-	-	1.204.3	t									
		Ethylb	enzene Emissions (Ib)	-	0.02	-	-	0.02	0.02	-	-		0.02	0.02	0.02	0.1	ł										
		HA	P Emissions (ton)		0.23	0.41	0.31	0.13	0.22	0.04	0.12	0.26	0.14	0.05	0.09	0.14	2.1	t									
																	SC VI.3.b	1			SC VI.3.b						
																						Organic	VOC				
																	Total			Acetone	voc	HAP	Emission	Conversio			
Product Name	Product Name2	Туре	On Material Summ	Units	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Usage		Density	Content	Content	Content	Factor	n lb to			
																	2023	Total Usage	(lb/gal)	(wt%)	(wt%)	(wt%)	(wt %)	ton	Styrene Cc N	MMA Cont Et	hviBenze
217100	Acetone	Purge & Cleanup	YES	gal	300.2	300.2	300.2	300.2		300.2	300.2	300.2	300.2	600.3	300.2		3.301.7	21.753.4	6.59	100.0%	0.0%	0.0%	5.0%	0.0005	0	0	0
330031DRUM	#GPC31 Mold Cleaner	Purge & Cleanup	YES	gal	-	55.0	55.0		5.0		55.0	55.0	55.0	-		55.0	335.0	2,371.4	7.08	0.0%	100.0%	45.0%	5.0%	0.0005	0	0	0
528992	Axel #19SAM Mold Release	Mold Release	YES	gal		-	30.0	-	30.0	-	-	-	-	30.0	-	-	90.0	547.9	6.09	0.0%	100.0%	7.5%	100.0%	0.0005	0	0	0
100242G	Dynalite Body Filler	Other-Non Coating	YES	gal	36.7	110.1	73.4	36.7	73.4		-	91.7	-	-	-	-	422.0	4,014.4	9.51	0.0%	17.8%	30.0%	100.0%	0.0005	0.3	0	0
50544	tr-309	Other-Non Coating	YES	gal	86.7	86.7	-	86.7	86.7		-	-	-	-	-	-	346.9	3,556.2	10.25	0.0%	40.0%	0.0%	100.0%	0.0005	0	0	0
610140	RUBBING COMPOUND	Other-Non Coating	YES	gal	-	62.3	-	62.3	-	-	-	-	-	-	-	-	124.6	1,277.1	10.25	0.0%	40.0%	0.0%	100.0%	0.0005	0	0	0
697804	SP600-5 BLACK 490ML 10:1 5-MIN MMA STRUCT ADH	Adhesive	YES	gal	62.1	59.0	40.6	21.5	31.1	9.6	-	10.9	18.3	12.4	37.3	17.1	319.9	2,560.9	8.01	0.0%	0.0%	60.0%	0.1%	0.0005	0	0.6	0
656515	Pre clean 90	Other-Non Coating	YES	gal	-	-	-	-	72.8		-	-	-	-	-	-	72.8	528.2	7.26	0.0%	15.0%	5.0%	100.0%	0.0005	0	0	0
29015	Aerosil #200	Adhesion Promoter	YES	gal				10.0	30.0	10.0	-	20.0	-	-	-	-	70.0	1,284.4	18.35	0.0%	0.0%	0.0%	100.0%	0.0005	0	0	0
662615	#AO420 Adhesive 380 ML	Adhesive	YES	gal	7.8	7.8	4.7	9.3	4.7	4.7	10.9	4.7	1.6	4.7	1.2	1.9	63.7	510.2	8.01	0.0%	70.0%	70.0%	0.1%	0.0005	0	0.7	0
102635G	Axel #802 Mold Release	Mold Release	YES	gal	8.0	12.0	4.0	4.0	16.0	12.0	4.0			-	-	-	60.0	365.5	6.09	0.0%	100.0%	0.0%	100.0%	0.0005	0	0	0
660635	MACHINE POLISH	Other-Non Coating	YES	gal		44.0			-		-		-	-	-	-	44.0	387.1	8.79	0.0%	32.0%	0.0%	100.0%	0.0005	0	0	0
216521	green spot putty	Other-Non Coating	YES	gal		0.8	-	-	0.8	0.7	-			0.8	0.8	0.8	4.8	63.5	13.35	0.0%	35.3%	30.3%	100.0%	0.0005	0	0	0.002
06044M	marine compound	Other-Non Coating	YES	gal		4.3	-	4.3	-	-	-			-	-	-	8.7	81.8	9.42	0.0%	30.3%	0.0%	100.0%	0.0005	0	0	0
102636G	#19W (RTM) Mold Release	Mold Release	YES	gal	4.0	1.0	1.0	-	-	-	-		-	-	-	2.0	8.0	48.6	6.07	0.0%	100.0%	7.5%	100.0%	0.0005	0	0	0
50521	#TR-104 Paste Wax	Mold Release	YES	gal	0.4	0.4	0.4	-	1.1	-	-		0.3	0.8	0.4	-	3.6	30.2	8.34	0.0%	80.0%	0.0%	100.0%	0.0005	0	0	0
MA310	MA 310 PLEXUS	Adhesive	YES	gal	3.0	-	-	-	-	-	-		-	-	-	-	3.0	23.9	8.01	0.0%	5.2%	80.0%	0.1%	0.0005	0	0.8	0
648144	3M #DP8005 Adhesive (45ml)	Adhesive	YES	gal			0.9	0.9	-	-	-		-	-	-	-	1.7	15.2	8.87	0.0%	40.0%	0.0%	0.1%	0.0005	0	0	0
659157	# AO420FS Adhesive 380 ML/PLE IT800 NEW GUN	Adhesive	YES	gal	-	-	1.6	-	-	-	-	-	-	-	-	-	1.6	12.3	7.93	0.0%	100.0%	60.0%	0.1%	0.0005	0	0.6	0
524828	#31002 Black Silicone Boss	Adhesive	YES	gal	-	-	1.0	-	-	-	-	-	-	-	-	-	1.0	8.2	8.01	0.0%	3.0%	0.0%	0.1%	0.0005	0	0	0
531655	black weather strip	Adhesive	YES	gal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.51	0.0%	62.0%	36.1%	0.1%	0.0005	0	0	0.01
401-3223	Naked Gun VOC Compliant Gun Cleaner	Purge & Cleanup	YES	gal	-	-	-	-			-	-		-	-	-	-	-	6.59	100.0%	3.0%	0.0%	5.0%	0.0005	0	0	0
217100REC	Recycled Acetone	0	YES	gal	(300.0)	(300.0)	(345.0)	(315.0)	(330.0)	(330.0)	(300.0)	(363.0)	(345.0)	(330.0)	(300.0)	(205.0)	(3,763.0)	(24,792.9)	6.59	100.0%	0.0%	0.0%		0.0005	0	0	0

Pa	ge	1	of	1
		_	_	_

																														-							
																																PTI					
EU-SPRA	YBOOTHGL1 (Application of Gel Coat on Molds)																															Styre	se .				
																					8	al	P	arts								Limi	2 PTI MN	WWWW N	/ Limit (lb/tor	1)	
Molded	Plastics Industries, Incorporated, Holt, Michigan					Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Total													Tooling Gelor	oat 4!	<i>1</i> % 0'	% 440			
						1	2	3	4	5	6	7	8	9	10	11	12													White/o	off white Gelo	oat		267	1		
YEAR			TOTAL VOC Emission	is (ton)		0.000560000	0.058262900	0.000000000	0.058262900	0.058262900	0.000560000	0.000560000	0.071299000	0.116525800	0.088190065	0.058582900	0.062980100	0.57	1.148.09	1 148 09										Pig	oat		377	/			
2023		Styrene Emissions (Ib)					116.53	-	116.53	116.53			142.60	233.05	176.38	116.53	125.32	1,143.45											CR/HS	or high perfo	rmance Gelc-	oat		605			
			Ethylbenzene Emissio	ons (Ib)			-	-	-								-	-														oat		857			
						Clear production gelcor															oat		52	,													
																				Sturene E	mirrion Fa	ctor: Gales	ate are M	achanical (Non Atom	her				Productic	on Type Gelco	atr 2'	M 10	ei			
signetine emissioni rikector, dendata ane meenamean and meeta and and and and and and and and and an															110000000	in type deltos		10/	~																		
																		SC 1/1 2 3	2.01			c															
																2.74			C 41.5.C				Ê		wwww	30 11.3.0						4		-			
																									w	www w	www	Ethylben									
				On														Total					thulBa		control of the	10 0	wrono.		NOC		1 7		www	/ /			
Product	Product Name2	Type	Gelcoat Type	Material	Units	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Usage					anyabe ly	oc		denter for	yiene .	Contractore			1 7					7 10	4
Name				Summ									-					2023			cyrene n		zene v			Instant Er	nission	Emission	ennission faataa	Communities	Commente	14/5-14	de Dame	. /			
																				Density 1	Jontenic C	ontent	oncent C	unit) (muent Pa	(1) (1)	4. 3	ractor	maccor	Conversion	Conversion	A White	o Figmen	n	(n fue	tarue
651000							520							1 000	500	500	6.00		Column3	io/gai)	wt%) (wt%) (WC%) (V	ve%) (v	/0%) (10	o/ton) (ii	o/ton)	(ID/ton)	(ID/ton)	ID TO Mg	ID to ton	T Whi	e ea	Liear	Tooling Cr	L/HS nt	·
651038	BLACK SANDING GEL COAT	Gelcoat	Pigmented Geicoat	YES	ID		530		530	530			490	1,060	530	530	570	4,770		11.50	60.0%	0.0%	0.0%	35.0%	35.0%	214.42	439.7		439.7	4.54E-0	4 0.00	05 -		4			-
599226	BLACK BARRIER CUAT	Geicoat	Pigmented Geicoat	YES	ID														31.9%	9.50	31.9%	0.0%	0.0%	31.9%	31.9%	117.99	118.0		118.0	4.54E-0	4 0.00	05 -	,	4			
645862	YELLOW HAP33 ARMORCOTE GELCOAT	Gelcoat	Pigmented Gelcoat	YES	lb														34.3%	10.49	24.3%	10.0%	1.0%	36.3%	35.3%	217.39	118.3	6.2	288.3	4.54E-0	4 0.00	05 -		4 -			
23172	DDM-9 Clear Catalyst	Catalyst	0	YES	lb	56					56	56				32	32	232	0.0%	8.41	0.0%	0.0%	0.0%	2.0%	0.0%				40.0	4.54E-0	4 0.00	05 -	- · · ·				
702771	INT FV B-128-NSUL GRAY SURFACE COAT	Gercoat	Pigmented Gelcoat	YES	ıb								300					300	37.0%	10.49	37.0%	0.0%	0.0%	37.0%	37.0%	252.44	232.4		232.4	4.54E-0	4 0.00	45 -					-
702772	INT EV N-1848-NSUL BEIGE SURFACE COAT	Gercoat	Pigmented Gelcoat	YES	ıb			-	-		-				515			515	37.0%	10.49	37.0%	0.0%	0.0%	37.0%	37.0%	232.44	232.4		232.4	4.54E-0	4 0.00	05 -		4			
575515	ge gel coat	Gelcoat	Pigmented Gelcoat	YES	Ib						-							-	39.0%	11.31	39.0%	0.0%	1.0%	41.0%	40.0%	259.48	250.5	6.5	270.5	4.54E-6	J4 0.00	.05		4 - 1			

30.6%

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	2		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	References					Parts	lb							Sty	rene I WW	WW Limit (lb/	ton)		wwww	
EU-SPRAYBOOTH	RS1 (Application of Resin on molds)																							Boats	gal				white				31% 2	267		CR/HS Resin	113
Molded Plastics In	ndustries, Incorporated, Holt, Michigan					Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Total											Pigmente	ed .			33% 3	377		Non CR/HS Resin	88
						1	2	3	4	5	6	7	8	9	10	11	12																				
YEAR			VOC Emissi	ions (lb)		15.7	9.4	6.0	5.9	9.6	4.2	4.2	6.0	4.9	2.1	6.0	3.1	77											Clear				33% 5	522		Tooling Resin	254
			HAP Emissi	ions (Ib)		99.7	54.2	35.4	32.8	64.6	14.8	22.0	38.8	20.8		35.4	10.6	429																			
2023			Styrene Emis	ssions (lb)		1.121.5	599.8	379.2	362.7	706.8	167.0	246.8	420.7	234.5		379.1	113.5	4,732																		Low-flame spread	d. 497
			EthylBenzene E	missions (Ib)																																	
						-															39%	5														Shrinkage control	41 354
																		SC VI.3.a			SC II 1			SC VI 3 h					SC VI 3 c								
																					1			1				WWWW	1								
																										wwww	wwww	EthylBenze		1 1							
				On														Total							Organic	HAP	Styrene	ne	VOC	VOC	I I						
Product Name	Product Name2	Туре	Resin Type	Material	Units	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Usage			Styrene	MMA	EthylBenze	VOC	HAP	Emission	Emission	Emission	emission	emission	Conversi C	onversi					
				Summ														2023		Deprity	Content	Content	ne Conten	Content	Content	Eactor	Eastor	Eastor	factor	factor	on lib to	n lh to Col	lumn				4
																			Columna	(lb/gal)	(urt%)	(wt%)	(wt%)	(art%)	(wt%)	(lb/ton)	(lb/ton)	(lb/ton)	(%)	(lb/ton)	Ma		Calu	and collies of	New CRI	Teoline Low Re	Chainbarn
						4								_					columns	(10) 8 (1)	(wear	(west)	(were)	(000,00)	(400)	(10) (01)	(10) (01)	(10) (011)	(74)	(10/1011)		-	colu	IIII: CRYPS R	NOTICRY	rooming i cowina	a Similage
647570	AOC TOTE H884-IVA-20 RESIN	Resin	Non CR/HS Re	YES	lb		5,424	11,076	2,811	11,144	5520		8,445			11,071	2,848	52,819	18.09	9.17	32.0%	0.09	6 0.09	32.09	32.0	58.45	68.48		1%	68.48	0.00	0.0005			1.00		
595838	AOC DX C431-JKA-12 RESIN	Resin	Non CR/HS Re	YES	lb	26,864	9,918	-	6,000	7,790	4,000	5,529	2,767	5,618	5566	5966	2850	68,486		9.17	37.1%	6 0.0%	6 0.09	37.19	5 37.1	83.45	83.49		0.01	83.49	0.00	0.0005			1.00		
23173	DDM-9 Red Catalyst	Catalyst	0	YES	lb	224	168	112	112	128	128	88	88	128	104	112	96	1,488		8.41	0.0%	6 0.03	6 0.0%	2.09	6 0.0	0%	**	**	100%	40.00	0.00	0.0005			-		
203308	Polylite TLP 33234-24	Resin	CR/HS Resin	YES	lb	-	-		-		-	-	-	-	-	-	-			9.01	33.0%	6 0.03	6 0.09	34.19	33.0	70.62	70.62		1%	93.41	0.00	0.0005		1.00			-
203443	dion fr 7704	Resin	CR/HS Resin	YES	lb	-	-	-	540		-	540	540	-	-	-	540	2,160		10.43	27.7%	6 0.0%	6 0.0%	27.79	27.1	7% 59.28	59.28	l 1	1%	59.28	0.00	0.0005		1.00			
575540	GE Resin	Resin	CR/HS Resin	YES	lb	-					-		-						-	10.30	36.0%	0.0%	6 1.09	37.0%	37.0	0% 83.18	80.04		1%	80.04	0.00	0.0005		1.00			-
82036-A	Trigonox 63A Catalyst	Catalyst	0	YES	lb		-	-				-	-		-	-		•		8.67	0.0%	6 0.0%	6 0.0%	45.0%	6 0.0	0%			100%	900.00	0.00	0.0005		-	-		-
	**																														0.00	0.0005		-	-		-
				-																																	