



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

Western Regional Office • 436 Dwight Street, Springfield MA 01103 • 413-784-1100

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### AIR QUALITY OPERATING PERMIT

Issued by the Massachusetts Department of Environmental Protection ("Department" or "MassDEP") pursuant to its authority under M.G.L. c. 111, §142B and §142D, 310 CMR 7.00 et seq., and in accordance with the provisions of 310 CMR 7.00: Appendix C.

**ISSUED TO ["the Permittee"]:**

INEOS Melamines, LLC  
730-B Worcester Street  
Springfield, MA 01151

**INFORMATION RELIED UPON:**

Application No. Application #1-O-11-004  
Transmittal No. Transmittal #X237177

**FACILITY LOCATION:**

INEOS Melamines, LLC  
730-B Worcester Street  
Springfield, MA 01151

**FACILITY IDENTIFYING NUMBERS:**

AQ ID: 0421100  
FMF FAC NO.: 412861  
FMF RO NO.: 511019

**NATURE OF BUSINESS:**

Manufacturing of high-solids liquid melamine resins that are sold to companies for use as cross-linkers in industrial coating systems.

Standard Industrial Classification (SIC): 2821  
North American Industrial Classification System (NAICS): 325211

**RESPONSIBLE OFFICIAL:**

Name: Scott Hansen  
Title: Operations Director

**FACILITY CONTACT PERSON:**

Name: Scott Hansen  
Title: Operations Director  
Phone: (413) 730-3216  
Fax: (413) 730-3444  
Email: [scott.hansen@ineos.com](mailto:scott.hansen@ineos.com)

**This Operating Permit shall expire on**

**October 24, 2021**

For the Department of Environmental Protection

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

**October 24, 2016**

Regional Director, Western Regional Office

Date

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## SPECIAL CONDITIONS FOR OPERATING PERMIT

### 1. PERMITTED ACTIVITIES

In accordance with the provisions of 310 CMR 7.00:Appendix C and applicable rules and regulations, the Permittee is authorized to operate air emission units as shown in Table 1 and exempt, and insignificant activities as described in 310 CMR 7.00:Appendix C(5)(h) and (i). The units described in Table 1 are subject to the terms and conditions shown in Sections 4, 5, and 6 and to other terms and conditions as specified in this Permit. Emissions from the exempt activities shall be included in the total facility emissions for the emission-based portion of the fee calculation described in 310 CMR 4.00 and this Permit.

#### A. DESCRIPTION OF FACILITY AND OPERATIONS

INEOS is located at 730-B Worcester Street in Springfield, Massachusetts. Operations at the facility include the storage of virgin raw materials (melamine, formalin, methanol, n- butanol, isobutanol, isopropanol, nitric acid, and sodium hydroxide) and recycle streams, batch reactors and associated hold tanks, batch and batch-continuous filters, blend tanks and product storage tanks, packaging equipment for drums, totes, tank trucks and rail cars, and batch and continuous distillation facilities for recovery of formaldehyde and alcohols.

The facility is a major source of hazardous air pollutants ("HAP") with the potential to emit greater than or equal to ten (10) tons per year of any single HAP and greater than or equal to twenty-five (25) tons per year of all HAPs combined.

The following table summarizes the plan approvals obtained by INEOS since taking over operations from Solutia, Inc. in 2010:

Plan Approval #	Date Issued	Description
WE-12-011	July 6, 2012	Reestablish previously approved scrubber minimum flow rates, with corresponding scrubber low flow alarms. Monitoring, testing and recordkeeping were updated to be more consistent from scrubber to scrubber.
WE-12-004	August 9, 2012	Previously issued 3/30/2012 for a new cooling tower to replace the "once-thru" use of city water. The plan approval was amended 8/9/2012 to include the facility's Startup, Shutdown, and Malfunction (SSM) Plan for the new cooling tower.
WE-12-013	August 9, 2012	A SSM Plan as required by Plan Approval #WE-12-004 was approved.
WE-13-005	March 13, 2013	Added production of a new resin on existing equipment using existing wet scrubbers for VOC control.

## Regulatory Applicability

The facility is subject to the requirements of 42 U.S.C. 7401, §112(r) Accidental Release Prevention Requirements: Risk Management under Clean Air Act 112(r)(7), and did submit to EPA the facility's contingency plan for responding to an accidental release of regulated substances.

The facility is subject to the following National Emission Standards for Hazardous Air Pollutants:

- Amino and Phenolic Resins MACT (40 CFR 63 Subpart OOO);
- MACT Leak Detection and Repair program (40 CFR 63 Subpart UU);
- 40 CFR 63 Subpart SS for Closed Vent Systems; and
- Organic Liquids Distribution (OLD) MACT (40 CFR 63 Subpart EEEE). Records are maintained to document that the throughput of HAP containing materials does not exceed 800,000 gallons on an annual basis and so, according to the OLD MACT, no controls are required.

The facility is subject to the MassDEP Reasonably Available Control Technology (RACT) Leak Detection and Repair (LDAR) requirements and demonstrates compliance by following the monitoring, testing and recordkeeping *procedures* of 40 CFR 60, Subpart VV (*Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006*). However, the facility is not subject to Subpart VV.

As of the first compliance date specified in 40 CFR Part 63 Subpart OOO, INEOS was no longer subject to 40 CFR 63 Subpart Kb (40 CFR §63.1400(i)(1)).

Until its termination, the Consent Decree: *United States of America versus Solutia, Inc. and INEOS Melamines, LLC* dated May 2, 2013 will be appended as Attachment A of this Operating Permit.

## Compliance Assurance Monitoring (CAM) Applicability

INEOS is not subject to 40 CFR Part 64 (CAM) for the following reasons:

- Potential pre-control device emissions for Emission Units 081 S001, 001b, 001c, 001d, 001e, 002, 003, 004, 004b, 006, 007, 008 and 032 are each less than 50 tons of VOCs per year. These levels are below the applicable major source thresholds.
- Emission Unit #081 S002 is not subject to the CAM Rule since the cyclones and baghouses qualify as "Inherent Process Equipment" in accordance with 40 CFR Part 64.1.
- Potential pre-control device emissions for Emission Unit 081 S005 are greater than 50 tons per year of VOCs, which exceeds the major source threshold. However, this emission unit is subject to emission limits as part of a part 70 Operating Permit, which includes a continuous compliance determination method to ensure the emission limitation for VOCs is met.

## 2. EMISSION UNIT IDENTIFICATION

The following emission units (Table 1) are subject to and regulated by this Operating Permit:

<b>Table 1</b>			
<b>EU</b>	<b>Description of EU</b>	<b>EU Design Capacity</b>	<b>Pollution Control Device (PCD)</b>
081 S001	#3 Tank (n-butanol storage) Stack # TFK T320	25,800 gal.	Packed bed scrubber
	#9 Tank (n-butanol storage) Stack #TFK T321	25,800 gal.	Packed bed scrubber
	#10 Tank (8% butanol storage) Stack # TFK 323	15,600 gal.	Packed bed scrubber
081 S001b	#21 Tank (methanol storage) Stack # TFK T224	30,000 gal.	Vapor return; conservation vent
	#24 Tank (methanol storage) Stack # TFK T225	30,000 gal.	Vapor return; conservation vent
081 S001c	#22 Tank (formaldehyde solution) Stack # TFK T226	35,000 gal.	Packed bed scrubber
081 S001d	#23 Tank (formaldehyde solution) Stack #TFK T227	80,000 gal.	Packed bed scrubber
081 S001e	# 1 Tank (isobutanol storage) Stack #TFK T215	25,800 gal.	Packed bed scrubber
	#13 Tank (isopropanol storage) Stack #TFK T322	15,000 gal.	Packed bed scrubber
081 S001f	#14 Tank (methanol storage) Stack #TFK T214	28,000 gal.	Packed bed scrubber
	# 5 Tank (CD Distillate; wet butanol storage) Stack #TFK T213	25,800 gal.	Packed bed scrubber
	#17 Tank (wet methanol storage) Stack #TFK T211	36,800 gal.	Packed bed scrubber
	#18 Tank (wet methanol storage) Stack #TFK T211	22,700 gal.	Packed bed scrubber
	#19 Tank (wet methanol storage) Stack #TFK T211	30,000 gal.	Packed bed scrubber
	# 7 Tank (CD distillate storage) Stack #TFK T219	25,800 gal.	Packed bed scrubber
081 S001g	# 4 Tank (wet butanol storage) Stack #TFK T220	25,800 gal.	Packed bed scrubber
081 S001h	#6 Tank (methanol distillate storage) Stack #TFK T323	4,400 gal.	Packed bed scrubber
	#16 Tank (wet butanol storage) Stack #TFK T220	15,000 gal.	Packed bed scrubber
081 S002	Bulk Melamine Silo Stack #081 P030	7,500 ft <sup>3</sup>	Cyclone & baghouse
	#1 Kettle, Melamine Blower, Baghouse, & Weigh Hopper Stack #081 P001		Cyclone & baghouse
	#6 Kettle, Melamine Blower, Baghouse, & Weigh Hopper Stack #081 P011		Cyclone & baghouse
	#7 Kettle, Baghouse, & Weigh Hopper Stack #081 P011		Baghouse

<b>Table 1</b>			
<b>EU</b>	<b>Description of EU</b>	<b>EU Design Capacity</b>	<b>Pollution Control Device (PCD)</b>
081 S003	#1 Kettle w/condenser, vacuum jets / inter-condensers & seal tank, #1 Distillate Receiver, & #1 Hold Tank Stack #081 P002	-	Scrubber
081 S004	#6 Kettle w/condenser, vacuum jets/inter-condensers, #6 Distillate Receiver, #6B Hold Tank Stack #081 P012	-	Packed bed scrubber
081 S004b	#7 Kettle, condenser, vacuum jets / inter-condensers, #7 Distillate Receiver Stack #081 P012	-	Packed bed scrubber
	DE Filter, Filter heel tank, Heel Tote Exhaust Stack #081 P112	-	Packed bed scrubber
081 S005	Heinkel Filter System #1 Heinkel Filter Centrifuge, Cyclone, Pump Tank, Solids Tank Stack #081 P003	-	Packed bed scrubber
	Heinkel Filter System #6 Heinkel Filter Centrifuge, Cyclone, Pump Tank, Solids Tank Stack #081 P036	-	Packed bed scrubber
	#7 Heinkel Filter Centrifuge, Cyclone, Pump Tank, Solids Tank Stack #081 P035	-	Packed bed scrubber
081 S006	Product Blending & Storage Tanks #5 Blend Tank Stack #081 P019	15,000 gal.	Packed bed scrubber
	#6 Blend Tank Stack #081 P020	15,000 gal.	Packed bed scrubber
	#7 Blend Tank Stack #081 P021	14,125 gal.	Packed bed scrubber
	#7 Hold Tank Stack #081 P015	8,300 gal.	Packed bed scrubber
	#8 Blend Tank Stack #081 P019	14,000 gal.	Packed bed scrubber
	#9 Blend Tank Stack #081 P037	24,500 gal.	Packed bed scrubber
	#10 Blend Tank Stack #081 P038	24,500 gal.	Packed bed scrubber
081 S007	Formaldehyde Recovery Distillation Column, Condenser, Reflux Drum, Day Tank, & De-acidifiers Stack #081 P023	36,000 gal.	Packed bed scrubber
081 S008	Butanol Recovery Distillation Column, Still Pots, Condenser, Phase Separator, Reflux Drum & Wet Receiver Stack #081 P025	-	Packed bed scrubber
081 S009	HAP Liquid Transfer Loading Racks Stack # - truck vent	-	None
081 S031	Methanol Column, Condenser, Ion Exchange Unit, and Reflux Drum	-	Condenser (Inherent Process Equipment in accordance with 40 CFR §64.1)
081 S032	CD Column and Reflux Drum Stack #081 P043	Varies	Condenser (Inherent Process Equipment in accordance with 40 CFR §64.1)

<b>Table 1</b>			
<b>EU</b>	<b>Description of EU</b>	<b>EU Design Capacity</b>	<b>Pollution Control Device (PCD)</b>
Facility-Wide	Leak Detection & Repair Valves, Pumps, etc.	Various	Various or none
	Process heat exchange systems Formaldehyde Cooler; Butanol Decant Cooler; Methanol Sub-cooler	Various	Various

**Table 1 Key**

EU = Emission Unit  
 gal = gallon  
 CFR = Code of Federal Regulations

PCD = Pollution Control Device  
 ft<sup>3</sup> = cubic feet

**Table 1 Footnotes:** none

**3. IDENTIFICATION OF EXEMPT ACTIVITIES**

The following are considered exempt activities in accordance with the criteria contained in 310 CMR 7.00: Appendix C(5)(h):

<b>Table 2</b>	
<b>Description of Current Exempt Activities</b>	<b>Reason</b>
The list of current exempt activities is contained in the Operating Permit application and shall be updated by the Permittee to reflect changes at the facility over the Permit term. An up-to-date copy of exempt activities list shall be kept on-site at the facility and a copy shall be submitted to the MassDEP's Regional Office. Emissions from these activities shall be reported on the annual emissions statement pursuant to 310 CMR 7.12.	310 CMR 7.00:Appendix C(5)(h)

**Table 2 Footnotes:** none

#### 4. APPLICABLE REQUIREMENTS

##### A. OPERATIONAL AND/OR PRODUCTION EMISSION LIMITS AND RESTRICTIONS

The Permittee is subject to the limits/restrictions as contained in Table 3 below:

<b>Table 3</b>				
<b>EU #</b>	<b>Fuel or Raw Material</b>	<b>Pollutant</b>	<b>Emission Limits / Restrictions</b>	<b>Applicable Regulation and/or Approval No.</b>
081 S001	solvents & liquid/solid resins	VOC/HAP <sup>1</sup>	Scrubber efficiency $\geq$ 90%	MassDEP RACT Approval (6/20/1989) MassDEP Approval Trans. #8292 (10/9/1992) Regulation 310 CMR 7.18(17) MassDEP Approval #1-P-09-002 (SSM Plan 5/26/2009) MassDEP Approval #WE-12-011 (7/6/2012) MassDEP Approval #WE-12-004 (8/9/2012) MassDEP Approval #WE-12-013 (8/9/2012)
081 S001b	solvents & liquid/solid resins	VOC/HAP <sup>1,2</sup>	Vapor recovery control efficiency $\geq$ 90%	MassDEP Approval #1-P-95-078 (11/17/1995)
			organic HAP emissions, control efficiency $\geq$ 95% (For Operations beginning on October 9, 2017)	40 CFR Part 63 Subpart OOO (Amino/Phenolic Resins)
081 S001c	solvents & liquid/solid resins	VOC/HAP <sup>1,2</sup>	Scrubber efficiency $\geq$ 95%	MassDEP Approval #1-P-96-039 (8/23/96; amended 7/28/1998) MassDEP Approval #1-P-09-002 (SSM Plan 5/26/2009) MassDEP Approval #WE-12-011 (7/6/2012)
			organic HAP emissions, control efficiency $\geq$ 95% (For Operations beginning on October 9, 2017)	40 CFR Part 63 Subpart OOO (Amino/Phenolic Resins)
081 S001d	solvents & liquid/solid resins	VOC/HAP <sup>1,2</sup>	Scrubber efficiency $\geq$ 95%	MassDEP Approval #1-P-96-039 (8/23/96; amended 7/28/1998) MassDEP Approval #1-P-09-002 (SSM Plan 5/26/2009) MassDEP Approval #WE-12-011 (7/6/2012) 40 CFR Part 63 Subpart OOO (Amino/Phenolic Resins)

<b>Table 3</b>				
<b>EU #</b>	<b>Fuel or Raw Material</b>	<b>Pollutant</b>	<b>Emission Limits / Restrictions</b>	<b>Applicable Regulation and/or Approval No.</b>
081 S001e	solvents & liquid/solid resins	VOC	scrubber efficiency $\geq$ 90%	MassDEP RACT Approval (6/20/1989) MassDEP Approval Trans. #8292 (10/9/1992) Regulation 310 CMR 7.18(17) MassDEP Approval 1-P-09-002 (SSM Plan 5/26/2009) MassDEP Approval #WE-12-011 (7/6/2012)
081 S001f	solvents & liquid/solid resins	VOC/HAP <sup>1,2</sup>	scrubber efficiency $\geq$ 90%  organic HAP emissions, scrubber efficiency $\geq$ 95% (For Operations beginning on October 9, 2017)	MassDEP RACT Approval (6/20/1989) MassDEP Approval Trans. #8292 (10/9/1992) Regulation 310 CMR 7.18(17) MassDEP Approval 1-P-09-002 (SSM Plan 5/26/2009) MassDEP Approval #WE-12-011 (7/6/2012) MassDEP Approval #WE-12-004 (8/9/2012) MassDEP Approval #WE-12-013 (8/9/2012)  40 CFR §63.1404(a)(1) (Subpart OOO Amino/Phenolic Resins)
081 S001g	solvents & liquid/solid resins	VOC	scrubber efficiency $\geq$ 90%  organic HAP emissions, scrubber efficiency $\geq$ 95% (For Operations beginning on October 9, 2017)	MassDEP RACT Approval (6/20/1989) MassDEP Approval Trans. #8292 (10/9/1992) Regulation 310 CMR 7.18(17) MassDEP Approval 1-P-09-002 (SSM Plan 5/26/2009) MassDEP Approval #WE-12-011 (7/6/2012)  40 CFR §63.1404(a)(1) (Subpart OOO; Amino/Phenolic Resins)
081 S001h	solvents & liquid/solid resins	VOC/HAP <sup>1,2</sup>	scrubber efficiency $\geq$ 90%	MassDEP RACT Approval (6/20/1989) MassDEP Approval Trans. #8292 (10/9/1992) Regulation 310 CMR 7.18(17) MassDEP Approval 1-P-09-002 (SSM Plan 5/26/2009) MassDEP Approval #WE-12-011 (7/6/2012)
081 S002	melamine	PM	Baghouse/cyclone efficiency $\geq$ 99%	MassDEP Approval #PV-87-IF-011 (11/30/1987) MassDEP Approval #1-P-09-002 (SSM Plan 5/26/2009)
081 S003	solvents & liquid/solid resins	VOC/HAP <sup>1,2</sup>	Scrubber efficiency $\geq$ 93%	MassDEP Approval #PV-87-IF-011 (11/30/1987) MassDEP Approval #1-P-95-063 (10/5/1995) MassDEP Approval #1-P-09-002 (SSM Plan 5/26/2009)

<b>Table 3</b>				
<b>EU #</b>	<b>Fuel or Raw Material</b>	<b>Pollutant</b>	<b>Emission Limits / Restrictions</b>	<b>Applicable Regulation and/or Approval No.</b>
081 S003			Organic HAP emissions for the batch cycle reduced by $\geq 83\%$	MassDEP Approval #WE-12-011 (7/6/2012)  40 CFR §63.1406(a)(2)ii (Subpart OOO; Amino/Phenolic Resins)
081 S004	Solvent & liquid/solid resins	VOC/HAP <sup>1,2</sup>	Packed bed scrubber efficiency $\geq 93\%$ , or  $\leq 0.010$ lb/hr formaldehyde; $\leq 0.030$ lb/hr butanol; $\leq 0.010$ lb/hr methanol, whichever is less restrictive, and  organic HAP emissions for the batch cycle reduced by $\geq 83\%$	MassDEP Approval #1-P-93-031 (3/11/1994 & 9/12/2000) MassDEP Approval #1-P-04-029 (9/14/2004; amended 10/18/2004) MassDEP Approval #1-P-09-002 (SSM Plan 5/26/2009) MassDEP Approval #WE-12-004 (8/9/2012) MassDEP Approval #WE-12-011 (7/6/2012) MassDEP Approval #WE-12-013 (8/9/2012)  40 CFR §63.1406(a)(2)ii (Subpart OOO; Amino/Phenolic Resins)
081 S004b	Solvents & liquid/solid resins	VOC/HAP <sup>1,2</sup>	Scrubber efficiency $\geq 93\%$ , or  $\leq 0.010$ lb/hr formaldehyde; $\leq 0.030$ lb/hr butanol; $\leq 0.010$ lb/hr methanol, whichever is less restrictive, and  Organic HAP emissions for the batch cycle reduced by $\geq 83\%$	MassDEP Approval #1-P-93-031 (3/11/1994 & 9/12/2000) MassDEP Approval #1-P-04-029 (9/14/2004; amended 10/18/2004) MassDEP Approval #1-P-07-023 (9/4/2007; amended 11/20/2007) MassDEP Approval #1-P-09-002 (SSM Plan 5/26/2009) MassDEP Approval #WE-12-011 (7/6/2012) MassDEP Approval #WE-12-004 (8/9/2012) MassDEP Approval #WE-12-013 (8/9/2012)  40 CFR §63.1406(a)(2)ii (Subpart OOO; Amino/Phenolic Resins)

<b>Table 3</b>				
<b>EU #</b>	<b>Fuel or Raw Material</b>	<b>Pollutant</b>	<b>Emission Limits / Restrictions</b>	<b>Applicable Regulation and/or Approval No.</b>
081 S005	Solvents & liquid/solid resins	VOC/HAP <sup>1,2</sup>	Scrubber efficiency $\geq 90\%$  Organic HAP emissions for the batch cycle reduced by $\geq 62\%$	MassDEP Approval #PV-86-IF-009 (8/11/1986) MassDEP Approval #1-P-87-IF-009 (7/30/1987) MassDEP Approval #1-P-88-007 (8/17/88, 8/29/1988) MassDEP Approval #1-P-95-018 (10/5/1995) MassDEP Approval #1-P-09-002 (SSM Plan 5/26/2009) MassDEP Approval #WE-12-011 (7/6/2012)  40 CFR §63.1407(a)(3)ii (Subpart OOO; Amino/Phenolic Resins)
081 S006	Solvents & liquid/solid resins	VOC/HAP <sup>1</sup>	Scrubber efficiency $\geq 90\%$	MassDEP Approval #PV-78-IF-004 (5/26/1978) MassDEP Approval #PV-87-IF-009 (7/30/1987) MassDEP RACT Approval (6/20/1989) MassDEP Approval Trans. #8292 (10/9/1992) Regulation 310 CMR 7.18(17) MassDEP Approval #1-P-09-002 (SSM Plan 5/26/2009) MassDEP Approval #WE-12-011 (7/6/2012)
081 S007	Solvents & liquid/solid resins	VOC/HAP <sup>1</sup>	$\geq 2.1$ gpm flow to the packed bed scrubber outlet concentration $\leq 23$ ppm formaldehyde  organic HAP emissions of $\leq 1.9$ pounds per ton of resin produced (For Operations beginning on October 9, 2017)	MassDEP Approval #PV-79-IF-009 (7/27/1979) MassDEP Approval #1-P-09-002 (SSM Plan 5/26/2009) MassDEP Approval #WE-12-011 (7/6/2012)  40 CFR §63.1405(a)(3) (Subpart OOO; Amino/Phenolic Resins)
081 S008	Solvents & liquid/solid resins	VOC/HAP <sup>1,2</sup>	Scrubber efficiency $\geq 90\%$  Organic HAP emissions for the batch cycle reduced by $\geq 62\%$	MassDEP RACT Approval (6/20/1989) MassDEP Approval Trans. #8292 (10/9/1992) MassDEP Approval #1-P-95-016 (7/13/1995) Regulation 310 CMR 7.18(17) MassDEP Approval #1-P-09-002 (SSM Plan 5/26/2009) MassDEP Approval #WE-12-011 (7/6/2012) MassDEP Approval #WE-12-004 (8/9/2012) MassDEP Approval #WE-12-013 (8/9/2012)  40 CFR §63.1407(a)(3)ii (Subpart OOO; Amino/Phenolic Resins)

<b>Table 3</b>				
<b>EU #</b>	<b>Fuel or Raw Material</b>	<b>Pollutant</b>	<b>Emission Limits / Restrictions</b>	<b>Applicable Regulation and/or Approval No.</b>
081 S003 081 S004 081 S004b 081 S005 081 S006	Solvents & liquid/solid resins	VOC/HAP <sup>1</sup>	Only applicable when producing material containing 2-ethylhexanol ("2-EHA"): ≤ 1.6 lb VOC per batch	MassDEP Approval #WE-13-005 (3/13/2013)
081 S009	Methanol formaldehyde	HAP <sup>3</sup>	Throughput of HAP liquid at or above 98% HAP loaded into mobile vessels at an uncontrolled loading rack must be < 800,000 gallons annually (rolling 12-month total)	40 CFR §63.2346(b); Table 2 to Subpart EEEE of Part 63 Emission Limits, and Operating Permit Application #1-O-11-004; Transmittal #X237177
081 S031	Solvents & liquid/solid resins	VOC/HAP <sup>2</sup>	organic HAP emissions of ≤ 1.9 pounds per ton of resin produced (For Operations beginning on October 9, 2017)	40 CFR §63.1405(a)(3) (Subpart OOO; Amino/Phenolic Resins)
081 S032	Solvents & liquid/solid resins	VOC/HAP <sup>2</sup>	organic HAP emissions of ≤ 1.9 pounds per ton of resin produced (For Operations beginning on October 9, 2017)	40 CFR §63.1405(a)(3) (Subpart OOO; Amino/Phenolic Resins)
081 S001 081 S001f 081 S004 081 S004b 081 S008	≥5% HAP (by weight) on the process side	HAP <sup>2</sup>	Operate heat exchange system with minimum pressure on the cooling side at least 35 kilopascals greater than the maximum pressure on the process side; or  Monitor cooling water for heat exchanger leaks in accordance with 40 CFR §63.1409(b), and repair leaks in accordance with 40 CFR §63.1409(d) and/or (e)	40 CFR §63.1409 Heat Exchange Systems (Subpart OOO; Amino/Phenolic Resins)
Facility-Wide	solvents & resins that contain or contract ≥ 5% (by weight) HAP and operates ≥ 300 hours per year	HAP <sup>1,2</sup>	For all applicable components in HAP service, refer to 40 CFR 63 Subpart UU for leak thresholds, which vary depending on type of equipment, type of solution, and type of service.	40 CFR 63 Subpart UU: Leak Detection and Repair
	solvents & resins that contain or contract ≥ 5% (by weight) HAP	HAP <sup>2</sup>	For all applicable pressure relief devices in HAP service, refer to 40 CFR §63.1411 for leak thresholds.	40 CFR §63.1411 Pressure Relief Devices (Subpart OOO; Amino/Phenolic Resins)
	solvents & resins that contain or contract	VOC	> 10,000 ppm reading constitutes a leak for subject valves, pumps, process drains, manhole	Leak Detection and Repair Program Approval (4/14/1987)

<b>Table 3</b>				
<b>EU #</b>	<b>Fuel or Raw Material</b>	<b>Pollutant</b>	<b>Emission Limits / Restrictions</b>	<b>Applicable Regulation and/or Approval No.</b>
Facility-Wide	≥ 10% (by weight) VOC and operates ≥ 300 hours per year		covers, agitators, and flanges. All components that meet the definition of leaking will be repaired in accordance with the Applicable Regulations and/or Approval #.	Regulation 310 CMR 7.18(17) MassDEP RACT Approval (6/20/1989)
	any	opacity	≤ 20%, except 20 to ≤ 40% for ≤ 2 minutes during any one hour	310 CMR 7.06(1)(b)
	any	noise	Per 310 CMR 7.10	310 CMR 7.10

**Table 3 Key:**

EU = Emission Unit

VOC = Volatile Organic Compounds

PM = Total Particulate Matter

gpm = gallons per minute

lbs/hr = pounds per hour

≥ = greater than or equal to

≤ = less than or equal to

% = percent

ppm = parts per million

> = greater than

RACT = Reasonably Available Control Technology

MassDEP = Massachusetts Department of Environmental Protection

PM<sub>10</sub> = Particulate Matter less than or equal to 10 microns in diameter

PM<sub>2.5</sub> = Particulate Matter less than or equal to 2.5 microns in diameter

HAP (total) = total Hazardous Air Pollutants.

HAP (single) = maximum single Hazardous Air Pollutant

CFR = Code of Federal Regulations

CMR = Code of Massachusetts Regulations

USEPA = United States Environmental Protection Agency

**Table 3 Footnotes:**

1. A list of hazardous air pollutants (HAPs) for purposes of MassDEP provisions can be found at 42 U.S.C. 7412 as modified in 40 CFR Subpart C.
2. A list of HAPs for purposes of 40 CFR 63, Subpart OOO provisions can be found in Table 2 of 40 CFR 63, Subpart F.
3. A list of HAPs for purposes of 40 CFR 63, Subpart EEEE provisions can be found in Table 1 of the subpart

**B. COMPLIANCE DEMONSTRATION**

The Permittee is subject to the monitoring/testing, record keeping, and reporting requirements as contained in Tables 4, 5, and 6 below and 310 CMR 7.00 Appendix C (9) and (10) and applicable requirements contained in Table 3:

<b>Table 4</b>	
<b>EU</b>	<b>Monitoring And Testing Requirements</b>
081 S001 081 S001e 081 S001f 081 S001g 081 S001h 081 S006 081 S008	<ol style="list-style-type: none"> <li>1. In accordance with 310 CMR 7.00 Appendix C(9) and MassDEP Approval #WE-12-011 (7/6/2012), continuously monitor the scrubber water flow using flow meters or flow switches.</li> <li>2. In accordance with MassDEP Approval Trans. #8292 (10/9/1992), set, operate and maintain a low/no flow<sup>2</sup> alarm system that will trigger at no less than the flow rate that results in <math>\geq 90\%</math> removal efficiency for non-hydrophobic hydrocarbons. See Table 8 of this Operating Permit for the required minimum water flow rate to the scrubbers.</li> <li>3. In accordance with 310 CMR 7.00 Appendix C(9) and MassDEP Approval #WE-12-011 (7/6/2012), test the scrubber water flow alarm for proper operation at least once per calendar quarter.</li> <li>4. In accordance with 310 CMR 7.00 Appendix C(9) and MassDEP Approval #WE-12-011 (7/6/2012), ensure the scrubber water low/no flow<sup>2</sup> alarm is operating at all times the scrubber is operating, except for periods of calibration checks, zero and span adjustments, preventive maintenance, and malfunction(s).</li> <li>5. INEOS shall obtain valid data from the scrubber water flow monitor for at least 75% of the hours per day for 75% of the days per calendar month that the emission unit operates, and for at least 90% of the hours per calendar quarter that the emission unit operates, except for periods of calibration checks, zero and span adjustments, preventive maintenance, and malfunctions(s).</li> </ol>
081 S001b	<ol style="list-style-type: none"> <li>6. In accordance with 310 CMR 7.00 Appendix C(9), verify at least annually that signs are present at the loading rack(s) indicating that the vapor recovery system must be used by all trucks/rail cars unloading product. This monitoring may be performed concurrently with the leak detection and repair performed at these emission units.</li> <li>7. In accordance with 310 CMR 7.00 Appendix C(9), monitor tank trucks/rail cars that are unloading organic materials to ensure they have current leak testing markings/signage indicating they have been leak tested in accordance with applicable leak testing requirements.</li> </ol> <p><u>FOR OPERATIONS BEGINNING ON OCTOBER 9, 2017</u></p> <ol style="list-style-type: none"> <li>8. Comply with 40 CFR Part 63.1404(a) or (b) for control of storage tank vent emissions. Prior to construction, submit a Plan Approval to the MassDEP for installation of the control device and related monitoring and measuring equipment.</li> </ol>
081 S001c 081 S001d	<ol style="list-style-type: none"> <li>9. In accordance with MassDEP Approvals #1-P-96-039 (8/23/1996) and #WE-12-011 (7/6/2012), continuously monitor the scrubber water flow using flow meters or flow switches.</li> <li>10. In accordance with MassDEP Approvals #1-P-96-039 (8/23/1996) and #WE-12-011 (7/6/2012), set the scrubber water flow alarm to activate when water flow is less than the flow rate specified in Table 8, Provision 26.</li> <li>11. In accordance with 310 CMR 7.00 Appendix C(9), test the scrubber water flow alarm for proper operation at least once per calendar month.</li> <li>12. In accordance with 310 CMR 7.00 Appendix C(9), ensure the scrubber water flow monitor is operating at all times the scrubber is operating, except for periods of calibration checks, zero and span adjustments, preventive maintenance, and malfunction(s).</li> <li>13. INEOS shall obtain valid data from the scrubber water flow monitor for at least 75% of the hours per day for 75% of the days per calendar month that the emission unit operates, and for at least 90% of the hours per calendar quarter that the emission unit operates, except for periods of calibration checks, zero and span adjustments, preventive maintenance, and malfunctions(s).</li> </ol>

**Table 4**

EU	Monitoring And Testing Requirements
081 S001b 081 S001c 081 S001f 081 S001g	<p><b>FOR OPERATIONS BEGINNING ON OCTOBER 9, 2017:</b></p> <p>14. In accordance with 40 CFR §63.1404(a)(1), set, operate and maintain a low/no flow<sup>2</sup> alarm system that will trigger at no less than the flow rate that results in ≥ 95% removal efficiency for organic HAPs. See Table 8 of this Operating Permit for the required minimum water flow rate to the scrubbers.</p> <p>15. In accordance 40 CFR §63.1415(b)(1), continuously monitor the scrubber water influent using flow meters or flow switches. Gas stream flow shall be determined using one of the procedures listed in 40 CFR §63.1415(b)(1)(ii)(A thru C).</p> <p>16. In accordance with 40 CFR §63.1415(b)(1)(i), continuously monitor pH of the scrubber effluent using a continuous recorder.</p> <p>17. In accordance with 40 CFR §63.1415(c), the facility may request alternative monitoring parameters using the procedures specified in 40 CFR §63.1417(j).</p>
081 S002	<p>18. In accordance with 310 CMR 7.00 Appendix C(9), obtain valid data from the bag-break detector monitoring equipment for at least 75% of the hours per day for 75% of the days per calendar month that the emission unit operates, and for at least 90% of the hours per calendar quarter that the emission unit operates, except for periods of calibration checks, zero and span adjustments, preventive maintenance, and malfunctions(s).</p>
081 S003 <sup>1</sup>	<p>19. In accordance with MassDEP Approvals #1-P-95-063 (10/5/1995) , #WE-12-011 (7/6/2012), and 40 CFR §63.1415(b)(1), continuously monitor the scrubber water flow using flow meters or flow switches.</p> <p>20. In accordance with 310 CMR 7.00 Appendix C(9) and MassDEP Approval #WE-12-011 (7/6/2012), test the scrubber water flow alarm for proper operation at least once per calendar quarter.</p> <p>21. In accordance with 310 CMR 7.00 Appendix C(9) and MassDEP Approval #WE-12-011 (7/6/2012), ensure the scrubber water low/no flow<sup>2</sup> alarm is operating at all times the scrubber is operating, except for periods of calibration checks, zero and span adjustments, preventive maintenance, and malfunction(s).</p> <p>22. In accordance with 310 CMR 7.00 Appendix C(9), obtain valid data from the scrubber water flow monitor equipment for at least 75% of the hours per day for 75% of the days per calendar month that the emission unit operates, and for at least 90% of the hours per calendar quarter that the emission unit operates, except for periods of calibration checks, zero and span adjustments, preventive maintenance, and malfunctions(s).</p>
081 S004 <sup>1</sup>	<p>23. In accordance with MassDEP Approvals #1-P-93-031 (3/11/1994 &amp; 9/12/2000) and #WE-12-011 (7/6/2012), and 40 CFR §63.1415(b)(1), continuously monitor the scrubber water flow using flow meters or flow switches.</p> <p>24. In accordance with 310 CMR 7.00 Appendix C(9) and MassDEP Approval #WE-12-011 (7/6/2012), test the scrubber water flow alarm for proper operation at least once per calendar quarter.</p> <p>25. In accordance with 310 CMR 7.00 Appendix C(9)(b)2 and MassDEP Approval #WE-12-011 (7/6/2012), ensure the scrubber water low/no flow<sup>2</sup> alarm is operating at all times the scrubber is operating, except for periods of calibration checks, zero and span adjustments, preventive maintenance, and malfunction(s).</p> <p>26. In accordance with 310 CMR 7.00 Appendix C(9), obtain valid data from the scrubber water flow monitor for at least 75% of the hours per day for 75% of the days per calendar month that the emission unit operates, and for at least 90% of the hours per calendar quarter that the emission unit operates, except for periods of calibration checks, zero and span adjustments, preventive maintenance, and malfunctions(s).</p>

**Table 4**

EU	Monitoring And Testing Requirements
081 S004b <sup>1</sup>	27. In accordance with MassDEP Approvals #1-P-93-031 (3/11/1994 & 9/12/2000), #1-P-07-023 (9/4/2007; amended 11/20/2007), #WE-12-011 (7/6/2012), and 40 CFR §63.1415(b)(1), continuously monitor the scrubber water flow using flow meters or flow switches. 28. In accordance with 310 CMR 7.00 Appendix C(9) and MassDEP Approval #WE-12-011 (7/6/2012), test the scrubber water flow alarm for proper operation at least once per calendar quarter. 29. In accordance with 310 CMR 7.00 Appendix C(9) and MassDEP Approval #WE-12-011 (7/6/2012), ensure the scrubber water low/no flow <sup>2</sup> alarm is operating at all times the scrubber is operating, except for periods of calibration checks, zero and span adjustments, preventive maintenance, and malfunction(s). 30. In accordance with 310 CMR 7.00 Appendix C(9), obtain valid data from the scrubber water flow monitor for at least 75% of the hours per day for 75% of the days per calendar month that the emission unit operates, and for at least 90% of the hours per calendar quarter that the emission unit operates, except for periods of calibration checks, zero and span adjustments, preventive maintenance, and malfunctions(s).
081 S005 <sup>1</sup>	31. In accordance with MassDEP Approval #1-P-95-018 (10/5/1995), 310 CMR 7.00 Appendix C(9), MassDEP Approval #WE-12-011 (7/6/2012), and 40 CFR §63.1415(b)(1), continuously monitor the scrubber water influent using flow meters or flow switches. 32. In accordance with 310 CMR 7.00 Appendix C(9) and MassDEP Approval #WE-12-011 (7/6/2012), test the scrubber water flow alarms for proper operation at least once per calendar quarter. 33. In accordance with 310 CMR 7.00 Appendix C(9) and MassDEP Approval #WE-12-011 (7/6/2012), ensure the scrubber water low/no flow <sup>2</sup> alarm is operating at all times the scrubber is operating, except for periods of calibration checks, zero and span adjustments, preventive maintenance, and malfunction(s). 34. In accordance with 310 CMR 7.00 Appendix C(9), obtain valid data from the scrubber water flow monitors for at least 75% of the hours per day for 75% of the days per calendar month that the emission unit operates, and for at least 90% of the hours per calendar quarter that the emission unit operates, except for periods of calibration checks, zero and span adjustments, preventive maintenance, and malfunctions(s).
081 S007	35. In accordance with MassDEP Approval #PV-79-IF-009 (7/27/1979), 310 CMR 7.00 Appendix C(9), and MassDEP Approval #WE-12-011 (7/6/2012), monitor scrubber water flow at least once per calendar day. See Table 8 Provision 26 for minimum scrubber water flow rate.  <u>FOR OPERATIONS BEGINNING ON OCTOBER 9, 2017:</u> 36. In accordance with 40 CFR §63.1405, set, operate and maintain a low/no flow <sup>2</sup> alarm system that will trigger at no less than the flow rate that results in organic HAP emissions of 1.9 pounds per ton of resin produced (annual average). See Table 8 of this Operating Permit for the required minimum water flow rate to the scrubbers. 37. In accordance 40 CFR §63.1415(b)(1), continuously monitor the scrubber water influent using flow meters or flow switches. Gas stream flow shall be determined using one of the procedures listed in 40 CFR §63.1415(b)(1)(ii)(A thru C). 38. In accordance with 40 CFR §63.1415(b)(1)(i), continuously monitor pH of the scrubber effluent using a continuous recorder. 39. In accordance with 40 CFR §63.1415(c), the facility may request alternative monitoring parameters using the procedures specified in 40 CFR §63.1417(j).
081 S008 <sup>1</sup>	40. In accordance with MassDEP Approval #WE-12-011 (7/6/2012) and 40 CFR §63.1415(b)(1), continuously monitor the scrubber water influent using flow meters or flow switches. 41. In accordance with 40 CFR §63.1407(a)(3)(ii), set, operate and maintain a low/no flow <sup>2</sup> alarm system that will trigger at no less than the flow rate that results in ≥ 62% removal efficiency for organic HAPs for the batch cycle. See Table 8 of this Operating Permit for the required minimum water flow rate to the scrubbers.

**Table 4**

EU	Monitoring And Testing Requirements
081 S001 081 S001f 081 S004 081 S004b 081 S008	<p>42. In accordance with MassDEP Approval #WE-12-004 (8/9/2012), continuously monitor and record the cooling tower water outlet temperature on an instantaneous basis and on a 12-hour and a 24-hour rolling average basis.</p> <p>43. In accordance with 310 CMR 7.00 Appendix C(9), ensure the cooling tower water temperature alarm is operating at all times the cooling tower is operating, except for periods of calibration checks, zero and span adjustments, preventive maintenance, and malfunction(s).</p> <p>44. INEOS shall obtain valid data from the cooling tower water outlet temperature monitor for at least 75% of the hours per day for 75% of the days per calendar month that the subject emission unit operates, and for at least 90% of the hours per calendar quarter that the subject emission unit operates, except for periods of calibration checks, zero and span adjustments, preventive maintenance, and malfunctions(s).</p> <p>45. In accordance with MassDEP Approval #WE-12-004 (8/9/2012) and MassDEP Approval #WE-12-013 (8/9/2012), ensure that the cooling tower water outlet temperature is alarmed to provide in the control room an audible and visible indication of either an instantaneous, a rolling 12-hour average over-temperature, or a rolling 24-hour average over-temperature.</p> <p>46. In accordance with MassDEP Approval #WE-12-013 (8/9/2012) and with the procedures specified in the Startup/Shutdown/Malfunction Plan, if the 12-hour rolling average alarm sounds, initiate actions to lower the demand for cooling tower water.</p> <p>47. In accordance with MassDEP Approval #WE-12-013 (8/9/2012) and the procedures specified in the Startup/Shutdown/Malfunction Plan, if the 24-hour rolling average alarm sounds, begin trouble shooting the cooling tower or make process changes to bring down the temperature. If the alarm condition cannot be corrected within 4 hours, initiate actions to either shut down process equipment that uses tower water or switch from tower water to the city water supply.</p> <p>48. In accordance with 310 CMR 7.00 Appendix C(9), test the cooling tower water outlet temperature alarm for proper operation at least once per calendar month.</p> <p>49. In accordance with MassDEP Approval #WE-12-004 (8/9/2012), conduct field verification tests at kettle sources affected by the cooling tower project in order to verify the emission estimates provided in the Air Quality Plan Approval application.</p> <p>50. In accordance with 40 CFR §63.1409, for each applicable heat exchange system, monitor the cooling side and maximum process side pressures to determine if cooling side pressure is <math>\geq 35</math> kilopascals compared to the maximum pressure on the process side, and to determine the applicability of Provision 51 below.</p> <p>51. In accordance with 40 CFR §63.1409(b), for each applicable heat exchange system with greater than or equal to 5% HAP by weight on the process side and where the cooling side pressure is not at least 35 kilopascals greater than the maximum pressure on the process side, monitor the cooling water for total HAP content in accordance with the procedures specified in that subpart.</p>
081 S003 081 S004 081S004b 081 S005 081 S006	<p>52. In accordance with MassDEP Approval #WE-13-005 (3/13/2013), monitor the number of batches of resin produced using 2-ethylhexanol as a process step as described in the MassDEP approval referenced, and include these process VOC emissions in the facility emission reporting requirements. VOC emissions shall be calculated based on the number of batches multiplied by no less than 1.6 pounds of VOC per batch.</p>
081 S009	<p>53. In accordance with 40 CFR §63.2346(b) (40 CFR Part 63, Subpart EEEE); Table 2 and Operating Permit Application #1-O-11-004; Transmittal # X237177, monitor the total actual annual facility-level organic liquid loading volume through transfer racks.</p>
Facility-Wide	<p>54. In accordance with 40 CFR §63.1410, for all applicable components in HAP service, monitor for leaks by complying with the requirements of 40 CFR Part 63, Subpart UU (national emission standards for equipment leaks) for all equipment, as defined under 40 CFR §63.1402, that contains or contacts 5 weight-percent HAP or greater and operates 300 hours per year or more.</p> <p>55. In accordance with MassDEP RACT Leak Detection and Repair Program Approval (4/14/1987), MassDEP RACT Approval (6/20/1989), and 310 CMR 7.00 Appendix C(9), for all applicable components in VOC service, implement leak detection and repair procedures according to 40 CFR Part 60 Subpart VV, <i>Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemical Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006</i>. An exception to 40 CFR §60.485(b)(1)(ii) is made when using a photoionization detection (PID) instrument. In this case the facility shall calibrate the instrument with a calibration gas recommended by the instrument manufacturer. In cases</p>

**Table 4**

EU	Monitoring And Testing Requirements
Facility-Wide	<p>where the specific equipment components with the potential to leak VOC from this process are not addressed in this document, the CTG document "Control of Volatile Organic Compound Leaks from Synthetic Organic Chemical and Polymer Manufacturing Equipment" dated March 1984 and past MassDEP policy will serve to determine what procedures will be implemented, except that the more frequent leak checking intervals and quicker repair turnarounds specified in the former document will apply.</p> <p>56. In accordance with 310 CMR 7.00: Appendix C(9), monitor emission units to demonstrate compliance with the opacity limits contained in Table 3 and 310 CMR 7.06(1)(b).</p> <p>57. In accordance with Regulation 310 CMR 7.13(1), if and when MassDEP determines that stack testing is necessary to ascertain compliance with MassDEP's regulations or design approval provisos, cause such stack testing:</p> <ul style="list-style-type: none"> <li>a. to be conducted by a person knowledgeable in stack testing,</li> <li>b. to be conducted in accordance with procedures contained in a test protocol approved by MassDEP,</li> <li>c. to be conducted in the presence of a representative of MassDEP when such is deemed necessary.</li> </ul> <p>58. In accordance with Regulation 310 CMR 7.13(2), if MassDEP determines that stack testing (to ascertain the mass emission rates of air contaminants emitted under various operating conditions) is necessary for the purposes of regulation enforcement or determination of regulation compliance, cooperate with MassDEP to provide:</p> <ul style="list-style-type: none"> <li>a. entrance to a location suitable for stack sampling,</li> <li>b. sampling ports at locations where representative samples may be obtained,</li> <li>c. staging and ladders to support personnel and equipment for performing the tests,</li> <li>d. a suitable power source at the sampling location for the operation of sampling equipment, and</li> <li>e. such other reasonable facilities as may be requested by MassDEP.</li> </ul> <p>Emissions from Compliance Testing (Stack Testing) shall be determined in accordance with Regulation 310 CMR 7.13, and 40 CFR Part 60, Appendix A (Method 7 for oxides of nitrogen (NO<sub>x</sub>), Method 6 for sulfur dioxide (SO<sub>2</sub>), Method 10 for carbon monoxide (CO), Methods 1 to 5 for particulate matter, Method 3A for Oxygen (O<sub>2</sub>), Method 9 for opacity, or any other test method approved by MassDEP or USEPA. Prior to Stack Testing, appropriate testing ports shall be constructed so as to accommodate the requirements as stipulated in 40 CFR Part 60, Appendix A.</p> <p>59. In accordance with 310 CMR 7.00 Appendix C(9)(b)2, unless otherwise specified, for all required continuous monitoring equipment (including but not limited to scrubber water flow monitors, bag-break detectors, and cooling tower water outlet temperature), obtain valid data for at least 75% of the hours per day for 75% of the days per calendar month that the emission unit operates, and for at least 90% of the hours per calendar quarter that the emission unit operates, except for periods of calibration checks, zero and span adjustments, and preventive maintenance.</p> <p>60. In accordance with 310 CMR 7.12, monitor operations such that information may be compiled for the annual preparation of a Source Registration/Emission Statement Form.</p> <p><b>FOR OPERATIONS BEGINNING ON OCTOBER 9, 2017:</b></p> <p>61. In accordance with 40 CFR §63.1411, for all applicable pressure relief devices in HAP service, which are vented directly to the atmosphere, monitor for releases by complying with the requirements of 40 CFR §63.1411(c).</p> <p>62. In accordance with 40 CFR §63.1411(a), within 5 days following a release from a pressure relief device in HAP service, conduct Method 21 monitoring (40 CFR Part 60, Appendix A) to verify the pressure relief device is operating with an instrument reading of less than 500 ppm above background. If a rupture disc is in-line with the pressure relief device, install a replacement rupture disc as soon as possible but no later than 5 calendar days following the release.</p>

**Table 4 Key:**

EU = Emission Unit	CMR = Code of Massachusetts Regulations
VOC = Volatile Organic Compound	MassDEP = Massachusetts Department of Environmental Protection
≥ = greater than or equal to	USEPA = United States Environmental Protection Agency
ppm = parts per million	RACT = Reasonably Available Control Technology
% = percent	HAPs (total) = total Hazardous Air Pollutants.
CFR = Code of Federal Regulations	HAP (single) = maximum single Hazardous Air Pollutant

**Table 4 Footnotes:**

1 – A request for alternative monitoring was requested in a letter from INEOS to the USEPA on January 18, 2002 (Pre-compliance Report) in accordance with 40 CFR §63.996(d) and 40 CFR §63.1415(c). In this request, INEOS asked to use an engineering assessment to estimate organic HAP emissions rather than monitoring pH. In addition, INEOS requested to eliminate the need to measure gas stream flow. As no response was provided, the alternative monitoring was implemented.

2 – “low/no flow” is defined herein as the minimum scrubber water flow rate specified in Table 8, Provision 26.

**Table 5**

EU	Record Keeping Requirements
081 S001 081 S001e 081 S001f 081 S001g 081 S001h 081 S006 081 S008	<ol style="list-style-type: none"> <li>1. In accordance with MassDEP Approval Trans. #8292 (10/9/1992), MassDEP Approval #WE-12-011 (7/6/2012), and 310 CMR 7.00 Appendix C(10), maintain records of the water flows to the scrubber.</li> <li>2. In accordance with MassDEP Approval Trans. #8292 (10/9/1992), MassDEP Approval #WE-12-011 (7/6/2012), and 310 CMR 7.00 Appendix C(10), maintain a record of all scrubber low/no flow<sup>1</sup> alarms and make this log available to the MassDEP upon request.</li> <li>3. In accordance with MassDEP Approval Trans. #8292 (10/9/1992), MassDEP Approval #WE-12-011 (7/6/2012), and 310 CMR 7.00 Appendix C(10), maintain a record of all scrubber water flow monitor downtime and make this log available to the MassDEP upon request.</li> </ol>
081 S001b	<ol style="list-style-type: none"> <li>4. In accordance with 310 CMR 7.00 Appendix C(10), maintain records of the presence of signs at the loading rack(s) indicating that the vapor recovery system must be used by all trucks/rail cars unloading product. This recordkeeping may be part of the leak detection and repair recordkeeping performed at these emission units.</li> <li>5. In accordance with 310 CMR 7.00 Appendix C(10), maintain records (a checklist is acceptable) for each tank truck/rail car unloading operation indicating that the tank truck/rail car has current leak-test markings/signage indicating it has been leak tested in accordance with applicable leak testing requirements.</li> </ol>
081 S001c 081 S001d	<ol style="list-style-type: none"> <li>6. In accordance with MassDEP Approval #1-P-96-039 (8/23/1996), MassDEP Approval #WE-12-011 (7/6/2012), and 310 CMR 7.00 Appendix C(10), maintain records of the water flows to the scrubber.</li> <li>7. In accordance with MassDEP Approval #1-P-96-039 (8/23/1996) and MassDEP Approval #WE-12-011 (7/6/2012), maintain a record of all scrubber low/no flow<sup>1</sup> alarms and make this log available to the MassDEP upon request.</li> <li>8. In accordance with MassDEP Approval #WE-12-011 (7/6/2012) and 310 CMR 7.00 Appendix C(10), maintain a record of all scrubber water flow monitor downtime and make this log available to the MassDEP upon request.</li> </ol>
081 S002	<ol style="list-style-type: none"> <li>9. In accordance with 310 CMR 7.00 Appendix C(10), maintain a record of all monitoring equipment downtime and make this log available to the MassDEP upon request.</li> </ol>
081 S003	<ol style="list-style-type: none"> <li>10. In accordance with MassDEP Approval #1-P-95-063 (10/5/1995) and MassDEP Approval #WE-12-011 (7/6/2012), maintain a record of all scrubber low/no flow<sup>1</sup> alarms and make this log available to the MassDEP upon request.</li> </ol>
081 S004	<ol style="list-style-type: none"> <li>11. In accordance with MassDEP Approval #1-P-93-031 (3/11/1994 &amp; 9/12/2000), MassDEP Approval #WE-12-011 (7/6/2012), and 310 CMR 7.00 Appendix C(10), maintain a record of all scrubber low/no flow<sup>2</sup> alarms, and make this log available to the MassDEP upon request.</li> </ol>
081 S004b	<ol style="list-style-type: none"> <li>12. In accordance with MassDEP Approval #1-P-93-031 (3/11/1994 &amp; 9/12/2000), MassDEP Approval #1-P-07-023 (9/4/2007; amended 11/20/2007), MassDEP Approval #WE-12-011 (7/6/2012), and 310 CMR 7.00 Appendix C(10), maintain a record of all scrubber low/no flow<sup>1</sup> alarms, and make this log available to the MassDEP upon request.</li> </ol>
081 S005	<ol style="list-style-type: none"> <li>13. In accordance with MassDEP Approval #1-P-95-018 (10/5/1995), MassDEP Approval #WE-12-011 (7/6/2012), and 310 CMR 7.00 Appendix C(10), maintain a record of all scrubber low/no flow<sup>1</sup> alarms and make this log available to the MassDEP upon request.</li> </ol>
081 S003 081 S004 081 S004b 081 S005	<ol style="list-style-type: none"> <li>14. In accordance with MassDEP Approval #WE-12-011 (7/6/2012), and 310 CMR 7.00 Appendix C(10), maintain records of the water flows to the scrubber.</li> <li>15. In accordance with MassDEP Approval #WE-12-011 (7/6/2012) and 310 CMR 7.00 Appendix C(10), maintain a record of all scrubber water flow monitor downtime and make this log available to the MassDEP upon request.</li> </ol>
081 S007	<ol style="list-style-type: none"> <li>16. In accordance with MassDEP Approval #PV-79-IF-009, MassDEP Approval #WE-12-011 (7/6/2012), and 310 CMR 7.00 Appendix C(10), maintain records of the daily flow readings for the scrubber.</li> <li>17. In accordance with MassDEP Approval #PV-79-IF-009, MassDEP Approval #WE-12-011 (7/6/2012), and 310 CMR 7.00 Appendix C(10), maintain a record of all scrubber low/no flow<sup>1</sup> alarms and make this log available to the MassDEP upon request.</li> <li>18. In accordance with MassDEP Approval #PV-79-IF-009, MassDEP Approval #WE-12-011 (7/6/2012), and 310 CMR 7.00 Appendix C(10), maintain a record of all scrubber water flow monitor downtime and make this log available to the MassDEP upon request.</li> </ol>

**Table 5**

EU	Record Keeping Requirements
081 S001 081 S001f 081 S004 081 S004b 081S008	19. In accordance with MassDEP Approval #WE-12-004 (8/9/2012), maintain records of the cooling tower water instantaneous, rolling 12-hour average, and rolling 24-hour average temperatures. 20. In accordance with MassDEP Approval #WE-12-004 (8/9/2012), maintain a daily log of cooling tower water temperature alarms. 21. In accordance with 310 CMR 7.00 Appendix C(10), maintain a record of all cooling tower water temperature monitor downtime and make this log available to the MassDEP upon request. 22. In accordance with 40 CFR §63.1409 (b), for each applicable heat exchange system served by the cooling tower (MassDEP Approval #WE-12-004 (8/9/2012) with greater than or equal to 5% HAP by weight on the process side and where the cooling side pressure is not at least 35 kilopascals greater than the maximum pressure on the process side, maintain the following records of each cooling water monitoring event; <ul style="list-style-type: none"> <li>a. the date and time of sample collection</li> <li>b. the location of sample collection</li> <li>c. the process conditions at time of sample collection.</li> <li>d. the analytical results of testing.</li> </ul> 23. In accordance with 40 CFR §63.1416(g)(4) maintain the following records: <ul style="list-style-type: none"> <li>(i) Monitoring data required by 40 CFR §63.1409 indicating a leak and the date when the leak was detected, and if demonstrated not to be a leak, the basis for that determination.</li> <li>(ii) Records of any leaks detected by procedures subject to 40 CFR §63.1409(c)(2) and the date the leak was detected.</li> <li>(iii) The dates of efforts to repair leaks.</li> <li>(iv) The method or procedure used to confirm repair of a leak and the date repair was confirmed.</li> </ul>
081 S003 081 S004 081 S004b 081 S005 081 S006	24. In accordance with MassDEP Approval #WE-13-005 (3/13/2013), keep records of the number of batches of resin produced using 2-EHA as a process step as described in the MassDEP approval referenced.
081 S009	25. In accordance with 40 CFR §63.2343(c)(3), maintain the documentation and records required therein.
Facility-Wide	26. In accordance with 40 CFR §63.1038 (Subpart UU; Leak Detection), for all applicable components in HAP service, maintain records as required therein. 27. In accordance with MassDEP RACT Leak Detection and Repair Program Approval (4/14/1987), MassDEP RACT Approval (6/20/1989), and 310 CMR 7.00 Appendix C(10)., for all applicable components in VOC service, keep original data sheets and summary records of the leak detection and repair results. 28. In accordance with 310 CMR 7.00 Appendix C(10), maintain records of all monitoring data and supporting information on-site for a period of at least five (5) years from the date of the monitoring sample, measurement, report or initial operating permit application. 29. In accordance with 310 CMR 7.12, maintain the records required to determine the nature and amounts of emissions from the facility. 30. In accordance with 310 CMR 7.12(3)(b), retain copies of Source Registration and other information supplied to MassDEP to comply with 310 CMR 7.12 for five (5) years from the date of submittal. 31. In accordance with 40 CFR §63.1416(a) and (c), maintain records as required therein. 32. In accordance with 40 CFR §63.1416(b), for all control equipment malfunctions, maintain records as required therein. 33. In accordance with 40 CFR §63.1416(d), for Batch Process Vents, maintain records as required. 34. In accordance with 40 CFR §63.1416(f), for Continuous Process Vents, maintain records as required. 35. For Emission Units subject to 40 CFR 63, Subpart OOO, maintain records as required in accordance with 40 CFR §63.1416(g).

**Table 5 Key**

EU = Emission Unit  
CFR = Code of Federal Regulations  
≥ = greater than or equal to  
ppm = parts per million  
% = percent  
VOC = Volatile Organic Compound

CMR = Code of Massachusetts Regulations  
MassDEP = Massachusetts Department of Environmental Protection  
USEPA = United States Environmental Protection Agency  
RACT = Reasonably Available Control Technology  
HAPs (total) = total Hazardous Air Pollutants.  
HAP (single) = maximum single Hazardous Air Pollutant

**Table 5 Footnotes:**

1 – “low/no flow” is defined herein as the minimum scrubber water flow rate specified in Table 8, Provision 26.

<b>Table 6</b>	
<b>EU</b>	<b>Reporting Requirements</b>
081 S001b 081 S001c 081 S001d 081 S001f 081 S001g 081 S001h 081 S003 081 S004 081 S004b 081 S005 081 S007 081 S008 081 S031 081 S032	1. In accordance with 40 CFR §63.1417 (Subpart OOO; Amino/Phenolic Resins), submit semi-annual compliance reports to the MassDEP and USEPA as required therein.
081 S001b 081 S001c 081 S001f 081 S001g 081 S007 081 S031 081 S032	<b>FOR OPERATIONS BEGINNING ON OCTOBER 9, 2017:</b> 2. In accordance with 40 CFR §63.1417(e) (Subpart OOO; Amino/Phenolic Resins), for sources subject to new standards with a compliance date of October 9, 2017, submit a Notification of Compliance Status report to the MassDEP and USEPA within 150 days after the compliance date as required therein.
081 S001 081 S001e 081 S001f 081 S001g 081 S001h 081 S006 081 S008	3. In accordance with MassDEP Approval #WE-12-011 (7/6/2012), ensure that MassDEP is notified in writing prior to scheduled maintenance activities for these scrubbers.
081 S009	4. In accordance with 40 CFR §63.2343 (c) and (d), submit reports as required therein.
Facility-Wide	5. In accordance with MassDEP RACT Leak Detection and Repair Program Approval (4/14/1987), MassDEP RACT Approval (6/20/1989), and 310 CMR 7.00 Appendix C(10), for all applicable components in VOC service, submit a report each calendar quarter (Jan.-March, April-June, July-Sept., and Oct.-Dec.) by the end of the month following the end of the calendar quarter summarizing the leak detection and repair results.
	6. In accordance with 40 CFR §63.1039 (Subpart UU; Leak Detection), for all applicable components in HAP service, submit reports to the MassDEP and USEPA as required therein.
	7. In accordance with 310 CMR 7.00 Appendix C(10)(a), submit to MassDEP any record relevant to this operating permit or to the emissions of any air contaminant from the facility within 30 days of the request by MassDEP or USEPA.
	8. In accordance with 310 CMR 7.00 Appendix C(10)(f), the Permittee shall report to MassDEP's Regional Bureau of Waste Prevention all instances of deviations from permit requirements. ( <b>See Provision 25 in "GENERAL CONDITIONS FOR OPERATING PERMIT"</b> ).
	9. Submit a Source Registration/Emission Statement Form to MassDEP on an annual basis as required by 310 CMR 7.12.
	10. In accordance with 310 CMR 7.13(1) and 7.13(2), if determined by the Department that stack testing is necessary to ascertain compliance with the Department's regulations or design approval provisos shall cause such stack testing to be summarized and submitted to the Department as prescribed in the agreed to pretest protocol.
	11. In accordance with 310 CMR 7.00: Appendix C(10)(c), the Permittee shall report a summary of all monitoring data and related supporting information to MassDEP at least every six months (January 30 and July 30 of each calendar year).
	12. Submit Annual Compliance report to MassDEP and USEPA by January 30 of each year and as required by General Condition 10 of this Permit.

**Table 6 Key**

EU = Emission Unit  
 CFR = Code of Federal Regulations  
 VOC = Volatile Organic Compound  
 CMR = Code of Massachusetts Regulations  
 MassDEP = Massachusetts Department of Environmental Protection  
 USEPA = United States Environmental Protection Agency  
 RACT = Reasonably Available Control Technology  
 HAP (single) = maximum single Hazardous Air Pollutant  
 HAPs (total) = total Hazardous Air Pollutants.

**Table 6 Footnotes:** none.

**C. GENERAL APPLICABLE REQUIREMENTS**

The Permittee shall comply with all generally applicable requirements contained in 310 CMR 7.00 et seq. and 310 CMR 8.00 et. seq., when subject.

**D. REQUIREMENTS NOT CURRENTLY APPLICABLE**

The Permittee is currently not subject to the following requirements:

<b>Table 7</b>	
<b>Regulation</b>	<b>Reason</b>
40 CFR Part 60, Subpart VV	Facility does not meet applicability
40 CFR Part 60, Subpart Kb	Facility does not meet applicability
310 CMR 7.71 - Greenhouse Gas Reporting (state only)	Facility does not meet applicability
310 CMR 7.16 - Reduction of Single Occupant Commuter Vehicle Use	Facility does not meet applicability
310 CMR 7.25 - Consumer and Commercial Products	Facility does not meet applicability
40 CFR Part 64 - Compliance Assurance Monitoring	Explanation is given in Facility Description and Operations (page 4 of the permit)

**Table 7 Footnotes:** none.

## 5. SPECIAL TERMS AND CONDITIONS

The Permittee is subject to and shall comply with the following special terms and conditions that are not contained in Table 3, 4, 5, and 6:

<b>Table 8.</b>	
<b>EU</b>	<b>Special Terms and Conditions</b>
081 S001 081 S001e 081 S001f 081 S001g 081 S001h 081 S006 081 S008	1. In accordance with MassDEP Approval Transmittal #8292 (10/9/1992) and Plan Approval #WE-12-011 (7/6/2012), ensure that all scheduled maintenance activities for the scrubber that necessitates reverting to the MassDEP RACT Approval (6/20/1989) permit conditions for that emission vent are only performed during the non-ozone months (October 1 through April 30). Any scheduled routine maintenance of this type that must occur during May 1 through September 30 must be approved beforehand by the MassDEP in writing.
081 S001b	2. In accordance with MassDEP Approval #1-P-95-078 (11/17/1995), post conspicuous signs at the unloading rack specifying that a properly operating and leak tight vapor recovery system must be used by all trucks/rail cars unloading product.  3. In accordance with MassDEP Approval #1-P-95-078 (11/17/1995) and 310 CMR 7.00 Appendix C(9), not permit any truck/rail car to unload product at the loading rack unless it has current leak testing markings/signage indicating it has been leak tested in accordance with applicable leak testing requirements.  4. In accordance with MassDEP Approval #1-P-95-078 (11/17/1995), include all potential sources of leaks from the vapor return system in a Leak Detection and Repair (LDAR) program.  <u>FOR OPERATIONS BEGINNING ON OCTOBER 9, 2017:</u> 5. Comply with 40 CFR §63.1404(a) or (b) for control of storage tank vent emissions. At least 90 days prior to the compliance date, obtain Plan Approval from the MassDEP for the control devices.
081 S003	6. In accordance with MassDEP Approval #WE-12-011 (7/6/2012), and 40 CFR §63.1406(a)(2)ii (Subpart OOO; Amino/Phenolic Resins), operate the scrubber with an instantaneous water flow rate of $\geq 14.0$ gpm.
081 S004	7. In accordance with MassDEP Approval #WE-12-011 (7/6/2012), and 40 CFR §63.1406(a)(2)ii (Subpart OOO; Amino/Phenolic Resins), operate the scrubber with an instantaneous water flow rate of $\geq 13.0$ gpm.
081 S001b 081 S001c 081 S001d 081 S001f 081 S001g 081 S001h 081 S003 081 S004 081 S004b 081 S005 081 S007 081 S008 081 S031 081 S032	8. In accordance with 40 CFR §63.1 thru §63.15, Subpart A, "General Provisions" [as indicated in Table 1 to Subpart OOO of 40 CFR 63, comply with all applicable provisions therein.
081 S009	9. In accordance with 40 CFR 63, Subpart EEEE (Organic Liquid Distribution-Non gasoline), including the General Conditions referenced in Table 12 of that Subpart, although no emission limits apply, comply with all applicable requirements stated therein.

**Table 8.**

EU	Special Terms and Conditions
081 S001e 081 S001f 081 S004b 081 S006	<p>10. In accordance with MassDEP Approval #1-P-07-023 (9/4/2007; amended 11/20/2007), for EU S001f (Stack #TFKT214), EU S001e (Stack #TFKT322); EU S004b (Stack #081P112), and EU S006 (Stack #081P021), test these scrubber water flow alarms for proper operation at least once per calendar month.</p> <p>11. In accordance with MassDEP Approval #1-P-07-023 (9/4/2007; amended 11/20/2007), for EU S001f (Stack #TFKT214), EU S001e (Stack #TFKT322); EU S004b (Stack #081P112), and EU S006 (Stack #081P021), ensure the scrubber water low/no flow<sup>1</sup> alarms are operating at all times the scrubbers are operating, except for periods of calibration checks, zero and span adjustments, preventive maintenance, and malfunction(s).</p> <p>12. In accordance with MassDEP Approval #1-P-07-023 (9/4/2007; amended 11/20/2007), For EU S001f (Stack #TFKT214), EU S001e (Stack #TFKT322); EU S004b (Stack #081P112), and EU S006 (Stack #081P021), obtain valid data from the low/no flow<sup>1</sup> alarm monitors for at least 75% of the hours per day for 75% of the days per calendar month that the emission unit operates, and for at least 90% of the hours per calendar quarter that the emission unit operates, except for periods of calibration checks, zero and span adjustments, preventive maintenance, and malfunctions(s).</p>
081 S004b	<p>13. In accordance with MassDEP Approval #WE-12-011 (7/6/2012), and 40 CFR Part 63 Subpart OOO, operate the scrubber (Stack #081 P012; #7 Kettle) with an instantaneous water flow rate of <math>\geq 13.0</math> gpm.</p>
081 S001 081 S001c 081 S001d 081 S001e 081 S001f 081 S001g 081 S001h 081 S002 081 S003 081 S004 081 S004b 081 S005 081 S006 081 S007 081 S008	<p>14. In accordance with MassDEP Approval #1-P-09-002 (05/26/2009) and MassDEP Approval #WE-12-013 (8/9/2012) for a Startup, Shutdown, and Malfunction Plan ("SSM Plan") for particulate control equipment, scrubbers, and condensers/cooling tower water, follow the procedures described therein, including but not limited to monitoring, recordkeeping, notifications / reporting, control device alarms, emission observations, control device repair, process operations, and emission unit shutdown.</p>
081 S001 081 S001f 081 S004 081 S004b 081 S008	<p>15. In accordance with MassDEP Approval #WE-12-004 (8/9/2012), ensure that in the event the cooling tower temperature exceeds 85 °F based on a rolling 12-hour average, the procedures specified in a MassDEP approved SSM Plan are followed. If INEOS adheres to the procedures in the SSM Plan, then any temperature deviation shall not be considered a permit violation.</p> <p>16. In accordance with MassDEP Approval #WE-12-004 (8/9/2012), ensure that tower water of <math>\leq 85^{\circ}\text{F}</math> is used only for the Kettle #6 and Kettle #7 cooling coils/condensers, the Kettle system after-condenser, methanol condenser, methanol condenser subcooler, CD condenser, the butanol column (wet) condenser, butanol recovery batch still – decant cooler, and butanol dry condenser.</p>
081 S031 081 S032	<p><b>FOR OPERATIONS BEGINNING ON OCTOBER 9, 2017:</b></p> <p>17. In accordance with 40 CFR §63.1405(a)(3), reduce emissions to less than or equal to 0.95 kilogram of total organic HAP per megagram (1.9 pounds of total organic HAP per ton) of resin produced. Prior to installation of a control device, obtain Plan Approval from the MassDEP.</p>
Facility-Wide	<p>18. In accordance with 40 CFR §63.1024 (Subpart UU; Leak Detection), for all applicable components in HAP service, repair leaking components as specified therein.</p>
Facility-Wide	<p>19. In accordance with 310 CMR 7.01(1), if any nuisance condition(s) occurs as a result of the facility operation, take appropriate steps immediately to abate said nuisance condition(s). [State Only]</p>

**Table 8.**

EU	Special Terms and Conditions		
	<p>20. In accordance with 310 CMR 7.09, not cause or allow emissions of odor or dust that cause or contribute to a condition of air pollution. [State Only]</p> <p>21. In accordance with 310 CMR 7.10, ensure that they do not willfully, negligently, or through failure to provide necessary equipment, service, or maintenance or take necessary precautions cause, suffer, allow, or permit unnecessary emissions of sound that may cause noise. [State Only]</p> <p>22. INEOS has indicated that it is subject to the requirements of 42 U.S.C. 7401, §112(r) <u>Accidental Release Prevention Requirements: Risk Management under Clean Air Act 112(r)(7)</u>, and did submit to the USEPA the facility's contingency plan for responding to an accidental releases of regulated substances.</p> <p>23. For any applicable heat exchanger leak found as a result of required monitoring, in accordance with 40 CFR §63.1409(d) and/or (e), repair the heat exchanger as required therein.</p> <p>24. The Permittee has indicated that it is subject to the requirements of 42 U.S.C. 7401, §112(r) <u>Accidental Release Prevention Requirements: Risk Management under Clean Air Act 112(r)(7)</u>, and did submit to the USEPA the facility's contingency plan for responding to an accidental releases of regulated substances.</p> <p><u>FOR OPERATIONS BEGINNING ON OCTOBER 9, 2017:</u></p> <p>25. In accordance with 40 CFR §63.1416(g)(5) (Subpart OOO; Amino/Phenolic Resins), for all applicable pressure relief devices and pressure relief device releases, maintain records as required therein.</p>		
	<p>26. In accordance with MassDEP Approval #WE-12-011 (7/6/2012), ensure that the following scrubbers operate and the scrubber low flow alarms are set at or above the minimum water flow rate specified as follows:</p>		
	EU DESCRIPTION	STACK #	MINIMUM WATER FLOW/ MINIMUM ALARM SET POINT (gpm)
081 S001	# 3 Tank (n-butanol storage) # 9 Tank (n-butanol storage) #10 Tank (8% butanol storage)	TFK T320 TFK T321 TFK T323	0.5 0.5 1.0
081 S001c	#22 Tank (formaldehyde solution)	TFK T226	2.5
081 S001d	#23 Tank (formaldehyde solution)	TFK T227	2.5
081 S001e	# 1 Tank (isobutanol storage) #13 Tank (isopropanol storage)	TKF T215 TKF T322	0.5 1.28
081 S001f	#14 Tank (methanol storage) # 5 Tank (CD Distillate; wet butanol storage) #17 Tank (wet methanol storage) #18 Tank (wet methanol storage) #19 Tank (wet methanol storage) # 7 Tank (CD distillate storage)	TFK T214 TFK T213 TFK T211 TFK T211 TFK T211 TFK T219	1.15 0.75 2.5 2.5 2.5 0.5
081 S001g	# 4 Tank (wet butanol storage)	TKF T220	1.0
081 S001h	# 6 Tank (methanol storage) #16 Tank (wet butanol storage)	TKF T323 TKF T220	1.0 1.0
081 S003	#1 Kettle w/condenser, vacuum jets / inter-condensers & seal tank, #1 Distillate Receiver, & #1 Hold Tank	087 P002	14.0
081 S004	#6 Kettle w/condenser, vacuum jets/inter-condensers, #6	081 P012	13.0

<b>Table 8.</b>			
<b>EU</b>	<b>Special Terms and Conditions</b>		
	Distillate Receiver, #6B Hold Tank		
081 S004b	#7 Kettle, condenser, vacuum jets / inter-condensers, #7 Distillate Receiver	081 P012	13.0
	DE Filter, Filter heel tank, Tote Exhaust	081 P112	1.75
081 S005	#1 Heinkel Filter Centrifuge, Cyclone, Pump Tank, Solids Tank	087 P003	1.4
	#6 Heinkel Filter Centrifuge, Cyclone, Pump Tank, Solids Tank	081 P036	1.4
	#7 Heinkel Filter Centrifuge, Cyclone, Pump Tank, Solids Tank	081 P035	1.4
081 S006	#5 Blend Tank	081 P019	0.5
	#6 Blend Tank	081 P020	0.5
	#7 Blend Tank	081 P021	0.65
	#7 Hold Tank	081 P015	1.0
	#8 Blend Tank	081 P019	0.5
	#9 Blend Tank	081 P037	1.0
	#10 Blend Tank	081 P038	1.0
081 S007	Distillation Column, Condenser, Reflux Drum, Day Tank, & De-acidifiers	081 P023	2.1
081 S008	Distillation Column, Still Pots, Condenser, Phase Separator, Reflux Drum & Wet Receiver	081 P025	0.35

**Table 8 Key**

EU = Emission Unit	CFR = Code of Federal Regulations
VOC = volatile organic compound	U.S.C. = United States Code
gpm = gallons per minute	MassDEP = Massachusetts Department of Environmental Protection
°F = degrees Fahrenheit	RACT = Reasonably Available Control Technology
% = percent	CMR = Code of Massachusetts Regulations
< = less than	HAP = Hazardous Air Pollutant
≤ = less than or equal to	USEPA = United States Environmental Protection Agency

**Table 8 Footnotes:**

1 – “low/no flow” is defined herein as the minimum scrubber water flow rate specified in Table 8, Provision 26.

**6. ALTERNATIVE OPERATING SCENARIOS**

The Permittee did not request alternative operating scenarios in its Operating Permit application.

**7. EMISSIONS TRADING**

**A. INTRA-FACILITY EMISSION TRADING**

The Permittee did not request intra-facility emissions trading in its Operating Permit application.

**B. INTER-FACILITY EMISSION TRADING**

The Permittee did not request inter-facility emissions trading in its Operating Permit application.

**8. COMPLIANCE SCHEDULE**

The Permittee has indicated that the facility is in compliance and shall remain in compliance with the applicable requirements contained in Sections 4 and 5.

In addition, the Permittee shall comply with any applicable requirements that become effective during the Permit term.

## GENERAL CONDITIONS FOR OPERATING PERMIT

### 9. FEES

The Permittee has paid the permit application processing fee and shall pay the annual compliance fee in accordance with the fee schedule pursuant to 310 CMR 4.00.

### 10. COMPLIANCE CERTIFICATION

All documents submitted to the MassDEP shall contain certification by the responsible official of truth, accuracy, and completeness. Such certification shall be in compliance with 310 CMR 7.01(2) and contain the following language:

"I certify that I have personally examined the foregoing and am familiar with the information contained in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including possible fines and imprisonment."

The "Operating Permit Reporting Kit" contains instructions and the Annual Compliance Report and Certification and the Semi-Annual Monitoring Summary Report and Certification. The "Operating Permit Reporting Kit" is available to the Permittee via the MassDEP's web site, <http://www.mass.gov/dep/air/approvals/aqforms.htm#op>.

#### A. Annual Compliance Report and Certification

The Responsible Official shall certify, annually for the calendar year, that the facility is in compliance with the requirements of this Operating Permit. The report shall be postmarked or delivered by January 30 to the MassDEP and to the Air Compliance Clerk, U.S. Environmental Protection Agency - New England Region. The report shall be submitted in compliance with the submission requirements below.

The compliance certification and report shall describe:

- 1) the terms and conditions of the Permit that are the basis of the certification;
- 2) the current compliance status and whether compliance was continuous or intermittent during the reporting period;
- 3) the methods used for determining compliance, including a description of the monitoring, record keeping, and reporting requirements and test methods; and
- 4) any additional information required by the MassDEP to determine the compliance status of the source.

#### B. Semi-Annual Monitoring Summary Report and Certification

The Responsible Official shall certify, semi-annually on the calendar year, that the facility is in compliance with the requirements of this Permit. The report shall be postmarked or delivered by January 30 and July 30 to the MassDEP. The report shall be submitted in compliance with the submission requirements below.

The compliance certification and report shall describe:

- 1) the terms and conditions of the Permit that are the basis of the certification;
- 2) the current compliance status during the reporting period;
- 3) the methods used for determining compliance, including a description of the monitoring, record keeping, and reporting requirements and test methods;
- 4) whether there were any deviations during the reporting period;
- 5) if there are any outstanding deviations at the time of reporting, and the Corrective Action Plan to remedy said deviation;
- 6) whether deviations in the reporting period were previously reported;
- 7) if there are any outstanding deviations at the time of reporting, the proposed date of return to compliance;
- 8) if the deviations in the reporting period have returned to compliance and date of such return to compliance; and
- 9) any additional information required by the MassDEP to determine the compliance status of the source.

## **11. NONCOMPLIANCE**

Any noncompliance with a permit condition constitutes a violation of 310 CMR 7.00: Appendix C and the Clean Air Act, and is grounds for enforcement action, for Permit termination or revocation, or for denial of an Operating Permit renewal application by the MassDEP and/or EPA. Noncompliance may also be grounds for assessment of administrative or civil penalties under M.G.L. c.21A, §16 and 310 CMR 5.00; and civil penalties under M.G.L. c.111, §142A and 142B. This Permit does not relieve the Permittee from the obligation to comply with any other provisions of 310 CMR 7.00 or the Act, or to obtain any other necessary authorizations from other governmental agencies, or to comply with all other applicable Federal, State, or Local rules and regulations, not addressed in this Permit.

## **12. PERMIT SHIELD**

- A. This facility has a permit shield provided that it operates in compliance with the terms and conditions of this Permit. Compliance with the terms and conditions of this Permit shall be deemed compliance with all applicable requirements specifically identified in Sections 4, 5, 6, and 7, for the emission units as described in the Permittee's application and as identified in this Permit.

Where there is a conflict between the terms and conditions of this Permit and any earlier approval or Permit, the terms and conditions of this Permit control.

B. The MassDEP has determined that the Permittee is not currently subject to the requirements listed in Section 4, Table 7.

C. Nothing in this Permit shall alter or affect the following:

- 1) the liability of the source for any violation of applicable requirements prior to or at the time of Permit issuance.
- 2) the applicable requirements of the Acid Rain Program, consistent with 42 U.S.C. §7401, §408(a); or
- 3) the ability of EPA to obtain information under 42 U.S.C. §7401, §114 or §303 of the Act.

### **13. ENFORCEMENT**

The following regulations found at 310 CMR 7.02(8)(h) Table 6 for wood fuel, 7.04(9), 7.05(8), 7.09 (odor), 7.10 (noise), 7.18(1)(b), 7.21, 7.22, 7.70 and any condition(s) designated as "state only" are not federally enforceable because they are not required under the Act or under any of its applicable requirements. These regulations and conditions are not enforceable by the EPA. Citizens may seek equitable or declaratory relief to enforce these regulations and conditions pursuant to Massachusetts General Law Chapter 214, Section 7A

All other terms and conditions contained in this Permit, including any provisions designed to limit a facility's potential to emit, are enforceable by the MassDEP, EPA and citizens as defined under the Act.

A Permittee shall not claim as a defense in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit.

### **14. PERMIT TERM**

This Permit shall expire on the date specified on the cover page of this Permit, which shall not be later than the date 5 years after issuance of this Permit.

Permit expiration terminates the Permittee's right to operate the facility's emission units, control equipment or associated equipment covered by this Permit, unless a timely and complete renewal application is submitted at least 6 months before the expiration date.

### **15. PERMIT RENEWAL**

Upon the MassDEP's receipt of a complete and timely application for renewal, this facility may continue to operate subject to final action by the MassDEP on the renewal application.

In the event the MassDEP has not taken final action on the Operating Permit renewal application prior to this Permit's expiration date, this Permit shall remain in effect until the MassDEP takes final action on the renewal application, provided that a timely and complete renewal application has been submitted in accordance with 310 CMR 7.00: Appendix C(13).

## **16. REOPENING FOR CAUSE**

This Permit may be modified, revoked, reopened, and reissued, or terminated for cause by the MassDEP and/or EPA. The responsible official of the facility may request that the MassDEP terminate the facility's Operating Permit for cause. The MassDEP will reopen and amend this Permit in accordance with the conditions and procedures under 310 CMR 7.00: Appendix C(14).

The filing of a request by the Permittee for an Operating Permit revision, revocation and reissuance, or termination, or a notification of a planned change or anticipated noncompliance does not stay any Operating Permit condition.

## **17. DUTY TO PROVIDE INFORMATION**

Upon the MassDEP's written request, the Permittee shall furnish, within a reasonable time, any information necessary for determining whether cause exists for modifying, revoking and reissuing, or terminating the Permit, or to determine compliance with the Permit. Upon request, the Permittee shall furnish to the MassDEP copies of records that the Permittee is required to retain by this Permit.

## **18. DUTY TO SUPPLEMENT**

The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information. The Permittee shall also provide additional information as necessary to address any requirements that become applicable to the facility after the date a complete renewal application was submitted but prior to release of a draft permit.

The Permittee shall promptly, on discovery, report to the MassDEP a material error or omission in any records, reports, plans, or other documents previously provided to the MassDEP.

## **19. TRANSFER OF OWNERSHIP OR OPERATION**

This Permit is not transferable by the Permittee unless done in accordance with 310 CMR 7.00: Appendix C(8)(a). A change in ownership or operation control is considered an administrative permit amendment if no other change in the Permit is necessary and provided that a written agreement containing a specific date for transfer of Permit responsibility, coverage and liability between current and new Permittee, has been submitted to the MassDEP.

## **20. PROPERTY RIGHTS**

This Permit does not convey any property rights of any sort, or any exclusive privilege.

## **21. INSPECTION AND ENTRY**

Upon presentation of credentials and other documents as may be required by law, the Permittee shall allow authorized representatives of the MassDEP, and EPA to perform the following:

- A. enter upon the Permittee's premises where an operating permit source activity is located or emissions-related activity is conducted, or where records must be kept under the conditions of this Permit;
- B. have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;
- C. inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and
- D. Sample or monitor at reasonable times any substances or parameters for the purpose of assuring compliance with the Operating Permit or applicable requirements as per 310 CMR 7.00 Appendix C(3)(g)(12).

## **22. PERMIT AVAILABILITY**

The Permittee shall have available at the facility, at all times, a copy of the materials listed under 310 CMR 7.00: Appendix C(10)(e) and shall provide a copy of the Operating Permit, including any amendments or attachments thereto, upon request by the MassDEP or EPA.

## **23. SEVERABILITY CLAUSE**

The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this Permit, shall not be affected thereby.

## **24. EMERGENCY CONDITIONS**

The Permittee shall be shielded from enforcement action brought for noncompliance with technology based<sup>1</sup> emission limitations specified in this Permit as a result of an emergency<sup>2</sup>. In order to use emergency as an affirmative defense to an action brought for noncompliance, the Permittee shall demonstrate the affirmative defense through properly signed, contemporaneous operating logs, or other relevant evidence that:

- A. an emergency occurred and that the Permittee can identify the cause(s) of the emergency;
- B. the permitted facility was at the time being properly operated;
- C. during the period of the emergency, the Permittee took all reasonable steps as expeditiously as possible, to minimize levels of emissions that exceeded the emissions standards, or other requirements in this Permit; and
- D. the Permittee submitted notice of the emergency to the MassDEP within two (2) business days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emission, and corrective actions taken.

If an emergency episode requires immediate notification to the Bureau of Waste Site Cleanup/Emergency Response, immediate notification to the appropriate parties should be made as required by law.

## **25. PERMIT DEVIATION**

Deviations are instances where any permit condition is violated and not reported as an emergency pursuant to section 24 of this Permit. Reporting a permit deviation is not an affirmative defense for action brought for noncompliance. Any reporting requirements listed in Table 6 of this Operating Permit shall supersede the following deviation reporting requirements, if applicable.

The Permittee shall report to the MassDEP's Regional Bureau of Waste Prevention the following deviations from permit requirements, by telephone, by fax or by electronic mail (e-mail), within three (3) days of discovery of such deviation:

- A. Unpermitted pollutant releases, excess emissions or opacity exceedances measured directly by CEMS/COMS, by EPA reference methods or by other credible evidence, which are ten percent (10%) or more above the emission limit.

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<sup>1</sup> Technology based emission limits are those established on the basis of emission reductions achievable with various control measures or process changes (e.g., a new source performance standard) rather than those established to attain health based air quality standards.

<sup>2</sup> An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation would require immediate corrective action to restore normal operation, and that causes the source to exceed a technology based limitation under the Permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operations, operator error or decision to keep operating despite knowledge of any of these things.

- B. Exceedances of parameter limits established by your Operating Permit or other approvals, where the parameter limit is identified by the Permit or approval as surrogate for an emission limit.
- C. Exceedances of Permit operational limitations directly correlated to excess emissions.
- D. Failure to capture valid emissions or opacity monitoring data or to maintain monitoring equipment as required by statutes, regulations, your Operating Permit, or other approvals.
- E. Failure to perform QA/QC measures as required by your Operating Permit or other approvals for instruments that directly monitor compliance.

For all other deviations, three (3) day notification is waived and is satisfied by the documentation required in the subsequent Semi-Annual Monitoring Summary and Certification. Instructions and forms for reporting deviations are found in the MassDEP Bureau of Waste Prevention Air Operating Permit Reporting Kit, which is available to the Permittee via the MassDEP's web site,

<http://www.mass.gov/dep/air/approvals/aqforms.htm#op>.

This report shall include the deviation, including those attributable to upset conditions as defined in the Permit, the probable cause of such deviations, and the corrective actions or preventative measures taken.

Deviations that were reported by telephone, fax or electronic mail (e-mail) within 3 days of discovery, said deviations shall also be submitted in writing via the Operating Permit Deviation Report to the regional Bureau of Waste Prevention within ten (10) days of discovery. For deviations, which do not require 3-day verbal notification, follow-up reporting requirements are satisfied by the documentation required in the aforementioned Semi-Annual Monitoring Summary and Certification.

## **26. OPERATIONAL FLEXIBILITY**

The Permittee is allowed to make changes at the facility consistent with 42 U.S.C. §7401, §502(b)(10) not specifically prohibited by the Permit and in compliance with all applicable requirements provided the Permittee gives the EPA and the MassDEP written notice fifteen days prior to said change; notification is not required for exempt activities listed at 310 CMR 7.00: Appendix C(5)(h) and (i). The notice shall comply with the requirements stated at 310 CMR 7.00: Appendix C(7)(a) and will be appended to the facility's Permit. The permit shield allowed for at 310 CMR 7.00: Appendix C(12) shall not apply to these changes.

## **27. MODIFICATIONS**

- A. Administrative Amendments - The Permittee may make changes at the facility which are considered administrative amendments pursuant to 310 CMR 7.00: Appendix C(8)(a)1., provided they comply with the requirements established at 310 CMR 7.00: Appendix C(8)(b).
- B. Minor Modifications - The Permittee may make changes at the facility which are considered minor modifications pursuant to 310 CMR 7.00: Appendix C(8)(a)2., provided they comply with the requirements established at 310 CMR 7.00: Appendix C(8)(d).

- C. Significant Modifications - The Permittee may make changes at the facility which are considered significant modifications pursuant to 310 CMR 7.00: Appendix C(8)(a)3., provided they comply with the requirements established at 310 CMR 7.00: Appendix C(8)(c).
- D. No permit revision shall be required, under any approved economic incentives program, marketable permits program, emission trading program and other similar programs or processes, for changes that are provided in this Operating Permit. A revision to the Permit is not required for increases in emissions that are authorized by allowances acquired pursuant to the Acid Rain Program under Title IV of the Act, provided that such increases do not require an Operating Permit revision under any other applicable requirement.

## **28. OZONE DEPLETING SUBSTANCES**

This section contains air pollution control requirements that are applicable to this facility, and the United States Environmental Protection Agency enforces these requirements.

- A. The Permittee shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR Part 82, Subpart E:
  - 1) All containers containing a class I or class II substance that is stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to 40 CFR 82.106.
  - 2) The placement of the required warning statement must comply with the requirements of 40 CFR 82.108.
  - 3) The form of the label bearing the required warning statement must comply with the requirements of 40 CFR 82.110.
  - 4) No person may modify, remove or interfere with the required warning statement except as described in 40 CFR 82.112.
- B. The Permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVAC) in Subpart B:
  - 1) Persons opening appliances for maintenance, service, repair or disposal must comply with the required practices of 40 CFR 82.156.
  - 2) Equipment used during the maintenance, service, repair or disposal of appliances must comply with the standards for recycling and recovery equipment of 40 CFR 82.158.
  - 3) Persons performing maintenance, service, repair or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.
  - 4) Persons disposing of small appliances, MVACs and MVAC-like appliances (as defined in 40 CFR 82.152) must comply with recordkeeping requirements of 40 CFR 82.166.
  - 5) Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair equipment requirements of 40 CFR 82.156.
  - 6) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must

- keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR 82.166.
- C. If the Permittee manufactures, transforms, imports or exports a class I or class II substance, the Permittee is subject to all the requirements as specified in 40 CFR Part 82, Subpart A, "Production and Consumption Controls".
  - D. If the Permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR Part 82, Subpart B, "Servicing of Motor Vehicle Air Conditioners". The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo or system used on passenger buses using HCFC-22 refrigerant.
  - E. The Permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR Part 82, Subpart G, "Significant New Alternatives Policy Program".

## **29. PREVENTION OF ACCIDENTAL RELEASES**

This section contains air pollution control requirements that are applicable to this facility, and the United States Environmental Protection Agency enforces these requirements.

Your facility is subject to the requirements of the General Duty Clause, under 112(r)(1) of the CAA Amendments of 1990. This clause specifies that owners or operators of stationary sources producing, processing, handling or storing a chemical in any quantity listed in 40 CFR Part 68 or any other extremely hazardous substance have a general duty to identify hazards associated with these substances and to design, operate and maintain a safe facility, in order to prevent releases and to minimize the consequences of accidental releases which may occur.

## **APPEAL CONDITIONS FOR OPERATING PERMIT**

This Permit is an action of the MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing within 21 days of issuance of this Permit. In addition, any person who participates in any public participation process required by the Federal Clean Air Act, 42 U.S.C. §7401, §502(b)(6) or under 310 CMR 7.00: Appendix C(6), with respect to the MassDEP's final action on operating permits governing air emissions, and who has standing to sue with respect to the matter pursuant to federal constitutional law, may initiate an adjudicatory hearing pursuant to Chapter 30A, and may obtain judicial review, pursuant to Chapter 30A, of a final decision therein.

If an adjudicatory hearing is requested, the facility must continue to comply with all existing federal and state applicable requirements to which the facility is currently subject, until a final decision is issued in the case or the appeal is withdrawn. During this period, the application shield shall remain in effect, and the facility shall not be in violation of the Act for operating without a Permit.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts which are the grounds for the request, and the relief sought. Additionally, the request must state why the Permit is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to The Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

The Commonwealth of Massachusetts  
Department of Environmental Protection  
P.O. Box 4062  
Boston, MA 02211

The request will be dismissed if the filing fee is not paid unless the appellant is exempt or granted a waiver as described below.

The filing fee is not required if the appellant is a city or town (or municipal agency) county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

The MassDEP may waive the adjudicatory hearing filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

**ATTACHMENT A**

CONSENT DECREE DATED MAY 2, 2013

UNITED STATES OF AMERICA

v.

SOLUTIA, INC. and INEOS MELAMINES, LLC