

# Fact Sheet



## For Final Minor Modification Permitting Action Under 45CSR30 and Title V of the Clean Air Act

This Fact Sheet serves to address the changes specific to this Minor Modification, and shall be considered a supplement to the Fact Sheet corresponding with the Title V operating permit issued on February 9, 2016.

Permit Number: **R30-07300003-2016**

Applications Received: **February 15, 2018 (MM04) and April 30, 2018 (MM05)**

Plant Identification Number: **03-54-07300003**

Permittee: **CYTEC Industries, Inc.**

Facility Name: **Willow Island Plant**

Manufacturing Unit: **Polymer Additives (Part 2 of 3)**

Mailing Address: **1 Heilman Avenue, Willow Island, WV 26134-9801**

Permit Action Number: *MM04 and MM05* Revised: *October 12, 2018*

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Physical Location: Willow Island, Pleasants County, West Virginia  
UTM Coordinates: 474.00 km Easting • 4,356.00 km Northing • Zone 17  
Directions: From Interstate 77, Exit 179, take State Route 2 north for approximately 10 miles. Plant site is on the left (river side) of State Route 2, two miles south of Belmont, WV.

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### Facility Description

CYTEC Industries is a global, research-based specialty chemical company. The company operates a multi-product, multi-process chemical plant at Willow Island, WV. Plant operations are divided into the following two manufacturing units and one support services unit: Surfactants (Part 1 of 3), Polymer Additives (Part 2 of 3), and Site Services (Part 3 of 3).

The Polymer Additives Manufacturing Unit (Part 2 of 3) manufactures ultraviolet light absorbers, antioxidants and anti-static agents. The light absorbers are used in all types of plastics (bottles, telephones, lawn furniture, auto parts), in coatings, and in sunscreens. Antioxidants are used in man-made fibers, rubber products, plastics, and in medical applications. Anti-static agents are used in the electronics industry, in copy machine toner, and in textile applications.

This modification is for revisions made in the Physical Forms and HALS Product/Process Areas.

### Emissions Summary

There is no change in permitted emissions associated with these Minor Modifications (MM04 and MM05).

### Title V Program Applicability Basis

With the proposed changes associated with this modification, this facility maintains the potential to emit over 100 tons per year of criteria pollutants, over 10 tons per year of a single hazardous air pollutant (HAP), and over 25 tons per year of aggregate hazardous air pollutants (HAPs). Due to this facility's potential to emit over 100 tons per year of criteria pollutants, over 10 tons per year of a single hazardous air pollutant (HAP), and over 25 tons per year of aggregate hazardous air pollutants (HAPs), CYTEC Industries, Inc. is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

### Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

The modification to this facility has been found to be subject to the following applicable rules:

|                    |                       |   |
|--------------------|-----------------------|---|
| Federal and State: | 45CSR7                | To Prevent and Control Particulate Matter Air Pollution From Manufacturing Processes and Associated Operations. |
|                    | 45CSR13               | Preconstruction permits for minor sources.  |
|                    | 45CSR30               | Operating permit requirement.   |
|                    | 45CSR34               | Emission Standards for Hazardous Air Pollutants for Source Categories Pursuant to 40 CFR, Part 63.              |
|                    | 40CFR63, Subpart FFFF | National Emission Standards for Hazardous Air Pollutions: Miscellaneous Organic Chemical Manufacturing (MON)    |
| State Only:        | None                  |   |

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

**Active Permits/Consent Orders**

| Permit or Consent Order Number | Date of Issuance | Permit Determinations or Amendments That Affect the Permit (if any) |
|--------------------------------|------------------|---|
| R13-2156AB                     | August 7, 2018   |   |

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table," which may be downloaded from DAQ's website.

**Determinations and Justifications**

This Minor Modification MM04 and MM05 incorporates changes made to both R13-2156AA (Physical Forms) and R13-2156AB (HALS).

Changes from R13-2156AA have been incorporated in the Title V permit. These changes include the following:

1.0 Equipment Table

Added the following Emission Units to the Product/Process Area – Physical Forms

| Emission Unit ID | Emission Point ID | Emission Unit Description           | Year Installed | Design Capacity | Control Device |
|------------------|-------------------|-------------------------------------|----------------|-----------------|----------------|
| 28BX             | 28BE              | Bulk Bag Unloader (3-28BB1)         | 2017           | NA              | None           |
| 28CX             | No Vent           | IBC Bin Discharge Station (3-28BC1) | 2017           | NA              | None           |
| 28DX             | 28BE              | Small Bag Unloader #1 (3-28BU1)     | 2017           | NA              | None           |
| 28EX             | 28BE              | Small Bag Unloader #2 (3-28BU2)     | 2017           | NA              | None           |
| 28FX             | 28BE              | Small Bag Unloader #3 (3-28BU3)     | 2017           | NA              | None           |
| 28GX             | No Vent           | K-TRON Feeder #1 (2-28FD1)          | 2017           | NA              | None           |
| 28HX             | No Vent           | K-TRON Feeder #2 (2-28FD2)          | 2017           | NA              | None           |
| 28JX             | No Vent           | K-TRON Feeder #3 (2-28FD3)          | 2017           | NA              | None           |
| 28KX             | No Vent           | K-TRON Feeder #4 (2-28FD4)          | 2017           | NA              | None           |
| 28MX             | No Vent           | K-TRON Feeder #5 (2-28FD5)          | 2017           | NA              | None           |
| 28NX             | No Vent           | Transfer Conveyor (2-28CV1)         | 2017           | NA              | None           |
| 29AX             | No Vent           | Small Bag Unloader #4 (3-29BU4)     | 2017           | NA              | None           |

| <b>Emission Unit ID</b> | <b>Emission Point ID</b> | <b>Emission Unit Description</b>      | <b>Year Installed</b> | <b>Design Capacity</b> | <b>Control Device</b> |
|-------------------------|--------------------------|---------------------------------------|-----------------------|------------------------|-----------------------|
| 29BX                    | No Vent                  | K-TRON Feeder #6 (2-29FD6)            | 2017                  | NA                     | None                  |
| 29CX                    | 28BE                     | K-TRON Feeder #7 (2-29FD7)            | 2017                  | NA                     | None                  |
| 29DX                    | 28BE                     | K-TRON Feeder #8 (2-29FD8)            | 2017                  | NA                     | None                  |
| 25DX                    | No Vent                  | Drum Oven (82-S-25UH1)                | 2017                  | NA                     | None                  |
| 29TX                    | 29TE                     | Feed Tank #1 (3-29T1)                 | 2017                  | NA                     | None                  |
| 30TX                    | 30TE                     | Feed Tank #2 (3-30T1)                 | 2017                  | NA                     | None                  |
| 28PX                    | 28BE                     | Extruder #1 (2-28EXT1)                | 2017                  | NA                     | None                  |
| 29QX                    | 28BE                     | Extruder Die Head (2-29DH1)           | 2017                  | NA                     | None                  |
| 28RX                    | 28BE                     | Extruder #2 (2-29EXT2)                | 2017                  | NA                     | None                  |
| 27TX                    | No Vent                  | Extruder Water Tank (3-27T1)          | 2017                  | NA                     | None                  |
| 27EX                    | No Vent                  | Extruder Heat Exchanger (3-27EX1)     | 2017                  | NA                     | None                  |
| 29EX                    | No Vent                  | Cooling Bath (2-29CB1)                | 2017                  | NA                     | None                  |
| 30EX                    | No Vent                  | Cooling Bath Heat Exchanger (2-30EX1) | 2017                  | NA                     | None                  |
| 31DX                    | No Vent                  | Air Knife Dryer (2-31D1)              | 2017                  | NA                     | None                  |
| 31PX                    | No Vent                  | Pelletizer (2-31PEL1)                 | 2017                  | NA                     | None                  |
| 27BX                    | 27BE                     | Product Bin (3-27BN1)                 | 2017                  | NA                     | None                  |
| 27CX                    | No Vent                  | Product Screener (2-27SCR1)           | 2017                  | NA                     | None                  |
| 27HX                    | No Vent                  | Product Surge Hopper (2-27HOP1)       | 2017                  | NA                     | None                  |
| 27DX                    | 28BE                     | Product Packaging (1-27PAC1)          | 2017                  | NA                     | None                  |
| 22DX                    | 22QE                     | Vacuum Tumble Blender (1-22D1)        | 2017                  | NA                     | 22QC                  |
| 22AX                    | 22QE                     | Small Bag Unloader #5 (2-22BU1)       | 2017                  | NA                     | 22QC                  |
| 22VX                    | No Vent                  | Blender Filling Conveyor (2-22CV1)    | 2017                  | NA                     | None                  |
| 22WX                    | No Vent                  | IBC Bin Filling Conveyor (1-22CV1)    | 2017                  | NA                     | None                  |
| 22YX                    | 22QE                     | IBC Bin Filling Station (1-22IBCF1)   | 2017                  | NA                     | 22QC                  |

Rule 7 Limits

Emission Point ID’s 22QE, 27BE, and 28BE are new emission points as a result of Administrative Update R13-2156AA. These emission points are for products that have undergone a chemical change. 45CSR§7-4.1 limits particulate matter from manufacturing process “Type ‘a’” source operations as follows:

22QE: For a process rate of 1,500 lbs/hr for a Type “a” source operation, the PM limit would be 1.80 lbs/hr. The calculated controlled potential emissions of PM through this point is 0.03 lbs/hr. Emission Point 22QE has been added to Condition 4.1.4, which references Condition 4.1.10 which limits PM emissions via 45CSR§7-4.1. Compliance with the PM controlled emissions listed in R13-2156AA Application Attachment N: Supporting Emissions Calculations Page 3 of 3 will show compliance with the PM limits of 45CSR§7-4.1. Condition 4.1.1 contains a PM limit for the entire facility. This Emission Point is subject to Condition 4.1.1, which will not be increased as a result of this Minor Modification.

27BE: For a process rate of 600 lbs/hr for a Type “a” source operation, the PM limit would be 0.72 lbs/hr. The calculated uncontrolled potential emissions of PM through this point is < 0.01 lbs/hr. Emission Point 27BE has been added to Condition 4.1.4, which references Condition 4.1.10 which limits PM emissions via 45CSR§7-4.1. Compliance with the PM controlled emissions listed in R13-2156AA Application Attachment N: Supporting Emissions Calculations Page 3 of 3 will show compliance with the PM limits of 45CSR§7-4.1. Condition 4.1.1 contains a PM limit for the entire facility. This Emission Point is subject to Condition 4.1.1, which will not be increased as a result of this Minor Modification.

28BE: The following table lists the various process rates, as well as their Type “a” source operation PM limits and the calculated uncontrolled potential emissions of PM through this point. Emission Point 28BE has been added to Condition 4.1.4, which references Condition 4.1.10 which limits PM emissions via 45CSR§7-4.1. Compliance with the PM uncontrolled emissions listed in Attachment N: Supporting Emissions Calculations Page 3 of 3 will show compliance with the PM limits of 45CSR§7-4.1. Condition 4.1.1 contains a PM limit for the entire facility. This Emission Point is subject to Condition 4.1.1, which will not be increased as a result of this Minor Modification.

| Emission Unit ID | Process Rate (lbs/hr) | Rule 7 Limit (lbs/hr) | Calculated Uncontrolled Emissions (lbs/hr) |
|------------------|-----------------------|-----------------------|--|
| 27BX             | 600                   | 0.72                  | < 0.01                                     |
| 27DX             | 7,200                 | 7.2                   | < 0.01                                     |
| 28BX             | 150                   | 0.18                  | < 0.01                                     |
| 28DX             | 120                   | 0.15                  | < 0.01                                     |
| 28EX             | 150                   | 0.18                  | < 0.01                                     |
| 28FX             | 210                   | 0.26                  | < 0.01                                     |

These emission points are also subject to the opacity requirements of 45CSR§7-3. These units have been added to Condition 4.1.4, with the specific opacity requirements given in Conditions 4.1.8, 4.1.9, 4.2.2, 4.4.6, and the Appendix A – Parametric Monitoring (where “Physical Forms” has been added as an Emission Group to Control Device 22QC).

Changes from R13-2156AB have been incorporated in the Title V permit. These changes include the following:

1.0 Equipment Table

Cytec-WI proposes to expand the existing HALS process in its Polymer Additives manufacturing business in a new wing of Building 82, utilizing the following new equipment process equipment, control devices and vent points:

| Emission Unit ID | Emission Point ID         | Emission Unit Description  | Year Installed | Control Device |
|------------------|---------------------------|--|----------------|----------------|
| 60AX             | 61SE                      | Bulk Bag Discharge Hopper (3-60HOP1)                                     | 2018           | 4-61COL1       |
| 60BX             | 58DE                      | Bulk Bag Discharge Hopper (3-60HOP2)                                     | 2018           | 3-58DC1        |
| 60CX             | 58DE                      | Bulk Bag Discharge Hopper (3-60HOP3)                                     | 2018           | 3-58DC1        |
| 60DX             | 07FE                      | Solids Charging System (2-60PTS1)  | 2018           | None           |
| 60EX             | 60EE                      | Step 1 Reactor (2-60K1); Condenser (4-60CD1)                             | 2018           | None           |
|                  | 61SE                      | Industrial hygiene vent for Step 1 Reactor                               | 2018           | 4-61COL1       |
| 58AX             | 07NE,<br>08BE,<br>or 09AE | Rotating Plate Filter (2-58F1)   | 2018           | NA             |
|                  | 58AE                      | Industrial hygiene vent for Rotating Plate Filter (2-58F1)               | 2018           | NA             |
| 60FX             | 60FE                      | Filtrate Receiver (2-60K2); Condenser (4-60CD2);<br>Condenser (4-60CD3)  | 2018           | None           |
|                  | 58DE                      | Industrial hygiene vent for Filtrate Receiver                            | 2018           | 3-58DC1        |
| 60GX             | No Vent                   | Knock Out Pot (3-60T1)   | 2018           | NA             |
| 60HX             | 11HE                      | Mott Filter (3-60F1)   | 2018           | NA             |
| 59AX             | 59AE or<br>59CE           | Strip Kettle (3-59K1); Condenser (4-60CD4); Condenser<br>(4-60CD5)       | 2018           | None           |
| 59BX             | 59CE                      | Condensate Receiver (3-59T1)   | 2018           | None           |
| 59CX             | 59CE                      | Vacuum Pump System (3-59P2); Condenser (3-59CD1);<br>Condenser (3-59CD2) | 2018           | None           |
| 59DX             | 59DE                      | Melt Tank (2-59K1)   | 2018           | None           |
| 58BX             | No Vent                   | Electric Preheater (2-58HT1)   | 2018           | NA             |
| 58CX             | 58DE                      | Pastillator (2-58MP1)  | 2018           | 3-58DC1        |
| 56AX             | 58DE                      | Product Bin (2-56BN1)  | 2018           | 3-58DC1        |
| 56BX             | 58DE                      | Screener (1-56SCR1)  | 2018           | 3-58DC1        |
| 57AX             | 58DE                      | Drumming Station (1-57PACK1)   | 2018           | 3-58DC1        |
| 59EX,<br>59FX    | No Vent                   | Electric Oil Heaters (1-59HO1, 1-59HO2)                                  | 2018           | NA             |
| 60IX,<br>60JX    | No Vent                   | Electric Oil Heaters (1-60HO1, 1-60HO2)                                  | 2018           | NA             |
| 59GX             | 59FE                      | Hot Oil Surge Tank (3-59T2)  | 2018           | None           |
| 60KX             | 60KE                      | Hot Oil Tank (1-60T1)  | 2018           | None           |
| 60LX             | 60LE                      | Steam Condensate Recovery Tank (1-60T2)                                  | 2018           | None           |

These units have been added to the Section 1.0 Emission Units Table.

Rule 7 Limits

Emission Point ID's 58DE and 61SE are new emission points as a result of Administrative Update R13-2156AB. These emission points are for products that have undergone a chemical change. 45CSR§7-4.1 limits particulate matter from manufacturing process "Type 'a'" source operations as follows:

58DE: For a process rate of 1,411 lbs/hr for a Type “a” source operation, the PM limit would be 1.69 lbs/hr. The calculated controlled potential emissions of PM through this point is < 0.01 lbs/hr. Emission Point 58DE has been added to Condition 4.1.4, which references Condition 4.1.10 which limits PM emissions via 45CSR§7-4.1. Compliance with the PM controlled emissions listed in R13-2156AB Application Attachment N Page 1 of 1 will show compliance with the PM limits of 45CSR§7-4.1. Condition 4.1.1 contains a PM limit for the entire facility. This Emission Point is subject to Condition 4.1.1, which will not be increased as a result of this Minor Modification.

61SE: For a process rate of 4,000 lbs/hr for a Type “a” source operation, the PM limit would be 4.20 lbs/hr. The calculated uncontrolled potential emissions of PM through this point is 0.15 lbs/hr. Emission Point 61SE has been added to Condition 4.1.4, which references Condition 4.1.10 which limits PM emissions via 45CSR§7-4.1. Compliance with the PM controlled emissions listed in R13-2156AB Application Attachment N Page 1 of 1 will show compliance with the PM limits of 45CSR§7-4.1. Condition 4.1.1 contains a PM limit for the entire facility. This Emission Point is subject to Condition 4.1.1, which will not be increased as a result of this Minor Modification.

These emission points are also subject to the opacity requirements of 45CSR§7-3. These units have been added to Condition 4.1.4, with the specific opacity requirements given in Conditions 4.1.8, 4.1.9, 4.2.2, 4.4.6, and the Appendix A – Parametric Monitoring (where Scrubber 4-61COL1 and Dust Collector 3-58DC1 have been added).

40CFR63, Subpart FFFF National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing (MON)

The existing HALS manufacturing process is subject to the Miscellaneous Organic NESHAP (MON MACT) Subpart FFFF, designated as MCPU# 3 and 4. The expanded HALS unit will remain designated as MON Group 1 batch process vents for MCPU# 3 and 4. The existing Permit’s monitoring, recordkeeping and reporting requirements are adequate to ensure compliance with all applicable requirements. The following Process Vents have been added to Condition 4.1.7.3.a; 11HE, 58AE, 58DE, 59AE, 59CE, 59DE, 59FE, 60EE, 60FE, 60KE, 60LE, and 61SE.

Other Miscellaneous Changes

1. Updated the most recent Permit Number in Section 1.2 to R13-2156AB.
2. Updated the Table of Contents by revising the page numbers and removing “4.1-4.6”.

**Non-Applicability Determinations**

The following requirements have been determined not to be applicable to the subject facility due to the following:

None.

**Request for Variances or Alternatives**

None.

**Insignificant Activities**

Insignificant emission unit(s) and activities are identified in the Title V application.

**Comment Period**

Beginning Date: N/A  
Ending Date: N/A

### **Point of Contact**

All written comments should be addressed to the following individual and office:

Mike Egnor  
West Virginia Department of Environmental Protection  
Division of Air Quality  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304  
Phone: 304/926-0499 ext. 1208 • Fax: 304/926-0478  
michael.egnor@wv.gov

### **Procedure for Requesting Public Hearing**

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

### **Response to Comments (Statement of Basis)**

None.