West Virginia Department of Environmental Protection
Division of Air Quality

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 the Minor Modification, and shall be considered a supplement to the Fact Sheet corresponding with the Title V operating permit issued on June 14, 2011.

Permit Number: **R30-10700001-2011**
Application Received: **November 20, 2015 (MM03)**
Plant Identification Number: **107-00001**
Permittee: **E. I. du Pont de Nemours and Company**
Facility Name: **Washington Works**
Manufacturing Unit**: Nylon Resins Production (Part 5 of 14)**
Mailing Address: **P. O. Box 2800, Washington, WV 26181-1217**

Permit Action Number: MM03 Revised: February 2, 2016

Physical Location:	Washington, Wood County, West Virginia
UTM Coordinates:	422.27 km Easting • 4,346.57 km Northing • Zone 17
Directions:	Route 68 west from Parkersburg to intersection of Route 892. Continue west on Route 892 with the plant being on the north side about one mile from the intersection of Routes 68 and 892.

Facility Description

Raw materials (organic acids and base) are transported to the site by railcars or trucks. The organic acids are powders that are pneumatically conveyed into storage hoppers or handled in bags. A liquid organic base is mixed with water in the railcar or truck, and then pumped into a storage tank. The organic acids and base are mixed with water in an atmospheric vessel to create the raw material (salt) for the polymer. The salt is held in tanks until pumped to the polymerization process.

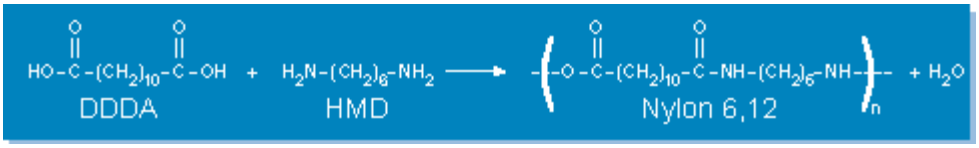
The salt can be pumped to an evaporator vessel for concentration using indirect steam heating, directly to an autoclave polymerization vessel, or it can be pumped to a continuous process system. A physical process of concentration of the water-based salt solution is what occurs in the evaporator before being sent to the autoclave. Nylon polymer is produced in the autoclave or in the continuous MPW1 process through application of heat and pressure. Water of dilution is driven off, as is water of reaction, creating nylon from a condensation reaction. The vapor emissions are directed to a scrubber. When enough water has been driven off, the desired viscosity has been reached.

Nitrogen is used to pressure up the autoclave to allow the polymer to exit the bottom of the vessel through a valve and die assembly. The desired viscosity resin is pumped directly from the continuous system to a die assembly. Strands or ribbons of molten polymer are water quenched and cut by a pelletizer or dicer into small pellets, which are then screened and conveyed into a blender/dryer vessel. Residual moisture is removed in the dryer, and the pellets are pneumatically conveyed to a screener to remove longs and fines and then to a bin. The pellets are then packaged into bags or boxes and shipped to the warehouse or directly to customers.

Typically the batch autoclaves produce 6,12 nylon in accordance with the following polyamide chemistry:

Nylon 6,12

Nylons are the polyamide products from the polycondensation of diamines with dicarboxylic acids. Dodecanedioic Acid (DDDA) is used as the diacid monomer in Nylon 6,12 adhesives, resins and filaments.



The continuous process employed by the MPW1 process area utilizes a plug flow reactor, which produces nylon 6-6 as its primarily product.

Emissions Summary

There is an estimated increase of 120 lbs/yr of VOCs due to this modification. This is based on information from the existing parts cleaners, and conservatively assuming that all of the solvent that is replaced is vented to the atmosphere.

Title V Program Applicability Basis

With the proposed changes associated with this permitting action, this facility maintains the facility-wide potential to emit over 100 tons per year of criteria pollutants, over 10 tons per year of a single HAP, and over 25 tons per year of aggregate HAPs**.** Therefore, DuPont Washington Works 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:	45CSR30	Operating permit requirement.
State Only:	45CSR§21-30	Control of VOC emissions from cold and solvent metal cleaning.

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the draft 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)*
N/A	N/A	PD15-097

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 B, which may be downloaded from DAQ's website.

Determinations and Justifications

45CSR21 Requirements

The facility is adding the following solvent metal cleaning sources:

Emission Point ID	Control Device	Emission Unit ID	Emission Unit Description	Year Installed
Fugitive	None	Z331-1	MPW-1 Solvent Parts Cleaner	1970's
Fugitive	None	Z331-2	MPW-2 Solvent Parts Cleaner	1980's
Fugitive	None	Z331-3	Autoclave Solvent Parts Cleaner	1960's
Fugitive	None	Z331-4	B-144 Solvent Parts Cleaner	2015

These emission sources are subject to 45CSR§21-30.3, which deal with cold cleaning facilities for solvent parts cleaners. Since the solvent true vapor pressure is less than 0.3 psi and the parts cleaners are not open top vapor degreasers, they are only subject to 45CSR§§21-30.3.a.4 through 9. These requirements including labeling, storage, closed covers, draining, type of stream, and type of materials have been added to the Permit as Condition 7.1.4. Condition 7.3.2 has been added to specify the type of test method used to measure the solvent true vapor pressure. Condition 7.4.3 has been added to maintain records of central equipment maintenance, and results of all testing. Condition 7.5.1 has been added to require specific types of reporting for any occurrence of excess emissions expected to last more than 7 days.

Miscellaneous

These emission sources have been added to the equipment table and the revision number of the Permit has been updated. The page numbering has been corrected where applicable. The facility is also adding a paint booth, bead blaster, and welding hood, which are considered insignificant sources (i.e., plant maintenance and upkeep activities) under Rule 30.

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

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

Mike Egnor
Engineer
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

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.

Point of Contact

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Response to Comments (Statement of Basis)

N/A