

# **ASTM Initiative to Draft a New Standard for Determination of the Converted Fraction of Starch and Cellulosic Content from a Renewable Fuel Production Facility**

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# History

- Initiative started June, 2017
- Operating under *ASTM E48 on Bioenergy and Industrial Chemicals from Biomass*
- Task Group Chair: Kristi Plack, Soliton
- New ASTM document will cover:
  - “Sampling, testing and calculation methodologies used for the quantification of the converted fraction of starch and cellulosic content used to determine qualification for a D3 RIN under the Renewable Fuel Standard (RFS), it also covers procedures for the management of the standard error associated with the sampling and testing of before and after conversion samples”



# Background

- In 2014 the EPA published the final rules regarding additional renewable fuel pathways that had been approved by the Agency under the RFS Program
- These new rules qualified corn kernel fiber as a cellulosic feedstock, meaning it meets the 60% GHG reduction and qualifies for the generation of D3 RINs
- The EPA rules governing these new kernel fiber pathways allow for essentially two approaches for kernel fiber conversion:



# Background

- 1) **Producers of Cellulosic Fuels Derived From Conversion of Feedstocks That Are Predominantly Cellulosic**
  - a) **“Predominantly Cellulosic” is defined as Feedstock that has an average adjusted cellulosic content of 75%, measured on a dry mass basis; furthermore, this “adjusted cellulosic content” is the percent of organic (non-ash) material that is cellulose, hemicellulose, or lignin**
- 2) **Producers of Cellulosic Fuels Derived From the Simultaneous Conversion of Feedstocks That Are Predominantly Cellulosic and Feedstocks That Are Not Predominantly Cellulosic (aka: in situ process)**



# Background

- **Producers that wish to gain approval to the in situ pathway are required to quantify the amount of ethanol that is derived specifically from cellulosic content (fiber) and from starch**
- **To accomplish this, the Producer needs to accurately and precisely measure the amount of cellulosic content and starch present before the conversion process begins and after the conversion process is complete**



# Background

- **The calculations for the assignment of the D3 and D6 RIN codes are prescribed in 40 CFR §80.1426**
- **The particular calculation for the converted fractions of starch and cellulosic content are not included in the EPA regulations**
- **The EPA has articulated their desire to see standardization in the industry related to the determination of the converted fractions**



# ASTM Task Group

- **Renewable Fuel Producers**
- **Analytical Laboratories**
- **Technology Companies**
- **Engineering Companies**
- **Enzyme Suppliers**
- **Government**
- **Academia**
- **Technical Consultants**



# **Document Scope and Title**

## **Standard Practice for Determination of the Converted Fraction of Starch and Cellulosic Content from a Renewable Fuel Production Facility**

- 1. Scope**
- 2. Referenced Documents**
- 3. Terminology**
- 4. Significance and Use**
- 5. Test Method Requirements**
- 6. Sample Collection Requirements**
- 7. Sample Analysis**
- 8. Converted Fraction Calculation**
- 9. Converted Fraction Statistical Confidence Criteria**
- 10. Variation Criteria for the Reported Percentage of D3 RINs**
- 11. Keywords**





# **Status and Timeline--Ballot #1**

- **Initial Subcommittee ballot issued on May 8, 2018**
- **Initial Subcommittee ballot closed on June 7, 2018**
- **Received 4 Negative votes and 3 other comments**
- **Task Group went back to work based on all the comments generated from initial subcommittee ballot.**



# **Status and Timeline--Ballot #2**

- **Re-balloted updated standard to main and subcommittee in August 2018, closed mid-September**
- **Received 3 Negatives, 3 other comments**
  - **Some comments were the same as initial subcommittee ballot**
- **Task Group is now working through all comments with those that submitted the comments so the task group can address with each individual.**
- **Plan is to re-ballot an updated standard to the main and subcommittee in early 2019**



# Interested Parties

Interested in joining the ASTM effort, contact:

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