



**NEICVP1216E05
Replacement Report**

**NEIC CIVIL INVESTIGATION REPORT
Denka Performance Elastomer
LaPlace, Louisiana**

Investigation Dates:
May 9-11, 2023

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APPENDICES (* NEIC GENERATED)

A*	Field Photographs (2 pages)
B*	Laboratory Receipt Photographs (6 pages)
C*	Laboratory Photographs (2 pages)

**This Contents page shows all the sections contained in this report
and provides a clear indication of the end of this report.**

INVESTIGATION OVERVIEW

This report (NEICVP1216E05) replaces the following U.S. Environmental Protection Agency (EPA) National Enforcement Investigations Center (NEIC) report in its entirety: NEICVP1216E03 (June 2023). This replacement was necessary to correct the following issue: separately report confidential information.

PROJECT OBJECTIVE

U.S. Environmental Protection Agency (EPA) Office of Civil Enforcement (OCE) Waste Compliance and Enforcement Division (WCED) and EPA Region 6 (Region) requested EPA's National Enforcement Investigations Center (NEIC) to collect samples at Denka Performance Elastomer (Denka) located at 560 Highway 44, LaPlace, Louisiana. Samples were collected from the polymerization reactor strainers, also known as poly kettle strainers (PKS). The collected samples were analyzed to determine ignitability and reactivity properties.

Table 1 lists the project team members.

Table 1. PROJECT TEAM MEMBERS		
Team Member	Organization	Project Role
Craig Lutz	NEIC	Project manager (PM)
Tanner Cheney	NEIC	Field team member
Agustin Martinez	NEIC	Field team member
Richard Helmich	NEIC	Analytical project manager (APM), field and laboratory team member
Kai Sinclair	NEIC	Laboratory team member
REGIONAL AND OTHER CONTACTS		
John Penland	EPA Region 6	Regional field team member
Mark Stead	EPA Region 6	Regional field team member

FACILITY CONTACT INFORMATION

Table 2 lists the primary facility contact.

Table 2. FACILITY CONTACT INFORMATION		
Name, Title	Phone No.	Email Address
Chris Meyers, Environmental Affairs Manager	995-536-7802	christopher-meyers@denka-pe.com

FACILITY OVERVIEW

Denka is listed with EPA Registry Identification No. 110067396669 and manufactures neoprene. Denka operates on property owned by E.I. DuPont de Nemours. The Region inspected the facility on April 18-22, 2022, and returned on May 5, 2022, to conduct an additional inspection and to collect samples. An administrative consent agreement was signed by EPA and Denka on December 22, 2022. The consent agreement required Denka to develop a waste determination plan for sampling and analysis of PKS waste for EPA's approval within 60 days. The Region and

WCED were on-site conducting another compliance inspection at the same time NEIC was sampling.

FIELD ACTIVITIES SUMMARY

Measurement and Sampling Activities

The NEIC field team provided support to this investigation by sampling material from poly kettle strainers in the poly kettle building. The poly kettle reactors produce crude neoprene from chloroprene. The strainers remove unwanted solids from the product. Samples of the solids along with any entrained liquids were collected. **Table 3** summarizes field measurement and field sampling activities. Photographs from the field activities are provided in **Appendix A**.

All environmental measurement activities were performed in accordance with the NEIC quality system. All field sampling, monitoring, and laboratory flash point measurements described in this report are within the scope of NEIC's ISO/IEC 17025 accreditation issued by the ANSI National Accreditation Board (certificate No. FT-0303). The SW-846 Methods 1030 and 1050 results are not within the scope of NEIC's ISO/IEC 17025 accreditation.

Denka was manufacturing product NPR-2008 at the time of the sampling. During the sampling event, the facility had an unplanned shutdown of the emission control device from approximately 10:00 a.m. on May 10, 2023, that extended into early morning May 11, 2023. This caused Denka to hold products in the poly kettle reactors overnight because the downstream processes had to be shut down until the emission controls were restarted. The samples collected on May 11, 2023, were from batches held overnight. This is longer than the usual holding time for the material in the poly kettle reactors.

Table 3. FIELD MEASUREMENT AND FIELD SAMPLING ACTIVITIES			
Location Identifier	Dates	Method, and/or Procedure ¹ , and Equipment	Measurer Name
MEASUREMENTS			
MSA Altair used to screen location for safety;	May 10-11, 2023	NEIC procedure: <i>Safety and Sample Screening Instruments, NEICPROC/17-002</i> Instrument guide: <i>MSA Altair 5X Multi-Gas Monitoring Equipment</i>	Craig Lutz
RadEye used additionally to screen samples for radiation	May 10-11, 2023	NEIC procedure: <i>Safety and Sample Screening Instruments, NEICPROC/17-002</i> Instrument guide: <i>RadEye B20-ER – Radiation Detection Equipment</i>	Craig Lutz

Table 3. FIELD MEASUREMENT AND FIELD SAMPLING ACTIVITIES					
SAMPLING					
Station No.	Appendix A Photo Nos.	Dates and Time	Sampling Technique	Method, and/or Procedure ¹ , and Equipment	Sampler Name
S01A, S01B ¹	P5100001.JPG P5100003.JPG	5/10/2023 09:35 a.m.	Grab sample	Manually grabbed by hand with disposable gloves.	Craig Lutz
S04A, S04B ¹	P5110006.JPG	5/11/2023 08:05 a.m.	Grab sample	Manually grabbed by hand with disposable gloves.	Craig Lutz
S06A, S06B ²	P5110007.JPG	5/11/2023 08:30 a.m.	Grab sample	Manually grabbed by hand with disposable gloves.	Craig Lutz
¹ The current version of each procedure, at the time of the investigation, was followed. ² Split samples left with the facility.					

Samples collected during the field activities were stored on ice. The samples' temperature was monitored and recorded while driven by Tanner Cheney and Augustin Martinez to the NEIC laboratory in Denver, Colorado, for analysis.

LABORATORY ACTIVITIES SUMMARY

Richard Helmich received the samples from Tanner Cheney on May 15, 2023. The laboratory team analyzed the samples for properties of ignitability and reactive hazardous waste. **Table 4** summarizes the analytical methods followed, as well as the analysts and dates of the analyses. Data quality summaries, including uncertainty measurements, for all laboratory measurements are maintained in the project files.

Table 4. ANALYTICAL OBJECTIVE, TECHNIQUE, AND METHOD; ANALYST; AND DATE PERFORMED			
Analytical Objective, Technique, and Method	NEIC Analyst	Samples Analyzed by Method (Station Nos.)	Dates Performed
Ignitability: - Method 1020C, Standard Test Methods for Flash Point by Setaflash (Small Scale) Closed Cup Apparatus, December 2018, Third Edition of the Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, and EPA publication SW-846. - ASTM D3278–78, “Standard Test Methods for Flash Point for Liquids by Setaflash Closed Tester and <i>Setaflash Method for Determining Ignitability of Liquids</i>, NEICPROC/06-001	Kai Sinclair	S01A – liquid S04A – liquid S06A - liquid	May 18-25, 2023
Burn Rate: Method 1030, Ignitability of Solids, Revision 1, July 2014, Final Update V to the Third Edition of the Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA publication SW-846.	Richard Helmich	S01A – solids S04A – solids S06A - solids	May 17-22, 2023
Spontaneous Combustion and Self-Heating: Method 1050, Test Methods to Determine Substances Likely to Spontaneous Combust, Revision 0, February 2007, Final Update IV to the Third Edition of the Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA publication SW-846	Richard Helmich	S01A S04A S06A	May 25-June 7, 2023

ANALYTICAL RESULTS

Table 5 summarizes the analytical results.

Table 5. SUMMARY OF ANALYTICAL RESULTS						
Station No.	Station Location/ Description of Sample Location	Appendix B Photo Nos.	Laboratory Sample Physical Description	Flash Point Results (°C ¹)	Burn Rate	Spontaneous Combustion
S01A – liquid	Poly Kettle #2 Strainer	101_5161.JPG 101_5162.JPG	White, opaque, non-viscous, emulsion, liquid	< 60 °C	N/A ²	Self-Heating
S01A – solid			Brown, black, white, Clumps, Rubbery, Sticky, wet, soft, solid	N/A	Did not propagate combustion.	Packing Group III

Table 5. SUMMARY OF ANALYTICAL RESULTS						
Station No.	Station Location/ Description of Sample Location	Appendix B Photo Nos.	Laboratory Sample Physical Description	Flash Point Results (°C ¹)	Burn Rate	Spontaneous Combustion
S04A – liquid	Poly Kettle #1 Strainer	101_5151.JPG 101_5152.JPG	White, opaque, non-viscous, emulsion, liquid	< 60 °C	N/A	Self-Heating
S04A - solid			Brown, black, orange, Clumps, Rubbery, Sticky, wet, soft, solid	N/A	Did not propagate combustion.	Packing Group III
S06A - liquid	Poly Kettle #3 Strainer	101_5156.JPG 101_5157.JPG	White, opaque, non-viscous, emulsion, liquid	> 60 °C	N/A	Self-Heating
S06A - solid			Brown, black, orange, Clumps, Rubbery, Sticky, wet, soft, solid	N/A	Did not propagate combustion.	Packing Group III
¹ °C: degrees Celsius ² N/A: not analyzed.						

Samples S01A, S04A, and S06A were multiphasic and consisted of a soft, rubbery solid, and a liquid/emulsion. The liquid phase of samples S01A, S04A, and S06A separated from the solids by force of gravity upon standing during transport from Denka to the NEIC laboratory. The liquid was separated from the solids by decanting, with some residual liquid remaining in the jar with the solids. Only the liquid phase of samples S01A, S04A, and S06A were analyzed for flash point.

Burn rate testing following SW-846 Test Method 1030 was performed only on the solid phase of samples S01A, S04A, and S06A. A clean piece of stretch film was placed over the mould for each sample to prevent them from sticking while filling the mould. Aliquots of solid sample were removed from the top of the jar, then cut with scissors into small, pea-sized pieces. The pieces were placed in the mould and pressure was applied using the ceramic plate to compress the pieces slightly, causing them to stick together. Some air spaces remained after loading and packing the material into the mould. None of the samples supported or propagated combustion.

Spontaneous combustion of the samples was not tested. The samples were exposed to air during collection, storage, and handling, and no signs of spontaneous combustion were

observed. Self-heating tests following SW-846 Test Method 1050 were performed on samples S01A, S04A, and S06A. Each sample was tested in a 100-millimeter (mm) cube as a combination of solid and residual liquid/emulsion. The 100-mm test consumed all of samples S01A and S04A. All samples tested positive, i.e., self-heated > 200 °C in the 100-mm cubes, qualifying as Department of Transportation (DOT) packing group III. **Figure 1** shows the temperature of S01A, S04A, and S06A in 100 mm cubes during testing. Only sample S06A was tested in a 25-mm (**Figure 2**) cube, confirming DOT packing group III. Since samples S01A and S04A could not be tested in the 25-mm cube, a determination for DOT packing group II for these samples could not be performed.

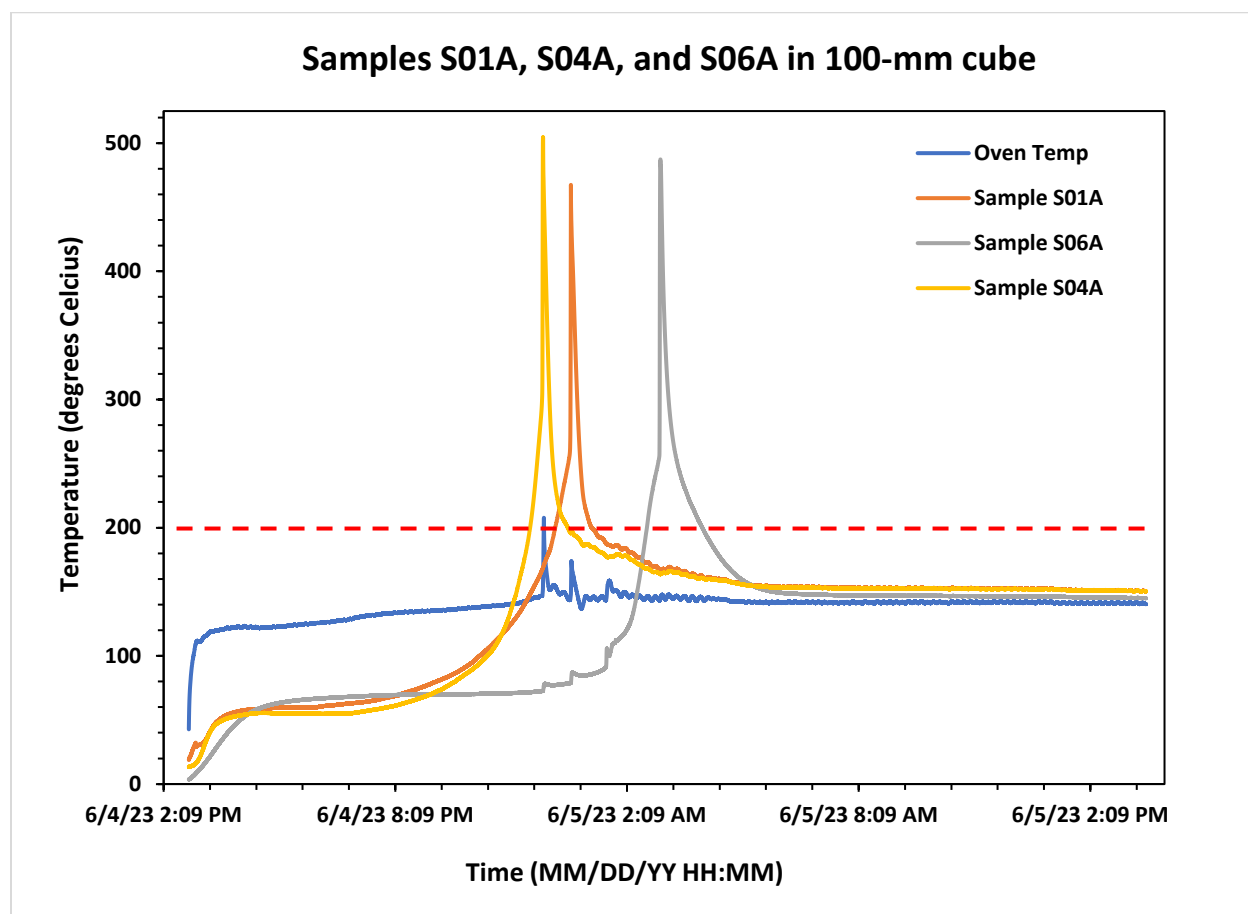


Figure 1. The temperature of samples S01A, S04A, and S06A during testing in 100-mm cubes.

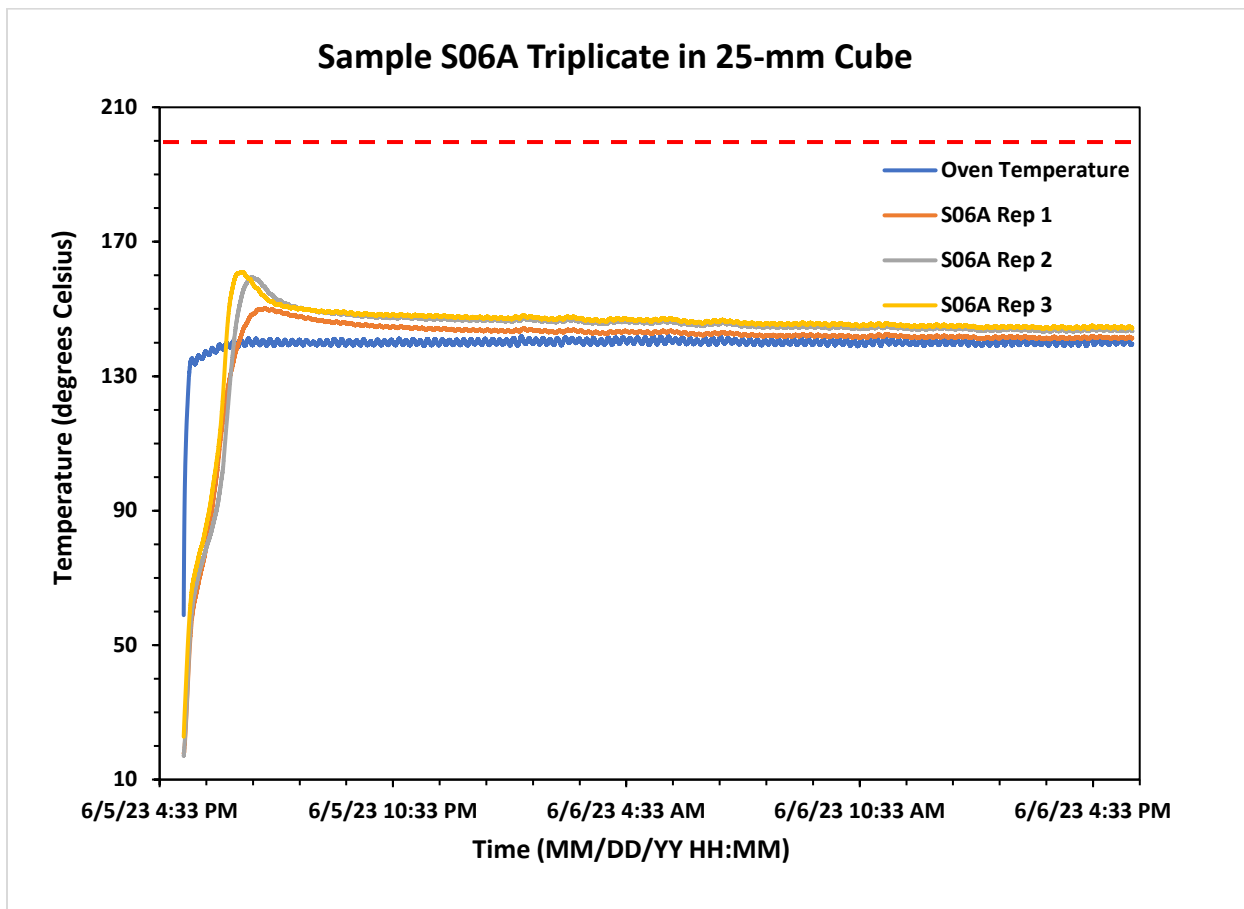


Figure 2. The temperature of sample S06A during testing in 25-mm cubes.

Laboratory sample descriptions, observations, method modifications, and notes are documented in the project file. Pertinent photographs from the laboratory activities are provided in **Appendix B**, additional photos are in the project file. Photographs of the samples after Method 1050 testing are provided in **Appendix C**.