



## REGION 5

CHICAGO, IL 60604

### **MEMORANDUM**

**SUBJECT:** CLEAN AIR ACT INSPECTION REPORT  
Arnold Magnetic Technologies Corporation, Marengo, Illinois

**FROM:** Natalie Schulz, Environmental Engineer  
AECAB (MN/OH)

**THRU:** Brian Dickens, Section Supervisor  
AECAB (MN/OH)

**TO:** File

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### **BASIC INFORMATION**

**Facility Name:** Arnold Magnetic Technologies Corporation

**Facility Location:** 300 North West Street, Marengo, Illinois

**Date of Inspection:** August 6, 2024

**EPA Inspector(s):**

1. Natalie Schulz, Environmental Engineer
2. Valeria Apolinario, Environmental Engineer

**Other Attendees:**

1. Brian LeMaster, Arnold Magnetic Technologies Corporation

**Contact Email Address:** blemaster@arnoldmagnetics.com

**Purpose of Inspection:** To evaluate compliance with the degreaser regulations of the Illinois SIP

**Facility Type:** Magnetic Alloy Manufacturing

**Regulations Central to Inspection:** HAP provisions in the facility's federally enforceable state operating permit and degreaser regulations in the Illinois SIP. The facility is required by its FESOP to keep records of the type of solvent used in its degreasers and monthly and annual emissions of volatile organic material and HAPs.

**Facility Name:** Arnold Magnetic Technologies Corporation

**Facility Location:** 300 N West St, Marengo, IL 60152

**Date of Inspection:** August 6, 2024

The cold cleaning degreaser regulations, found at 35 Ill. Admin., Code 218.182, requires that the degreaser be equipped with a cover that is closed whenever the parts are not being handled in the cleaner.

**Arrival Time:** 2:20 pm

**Departure Time:** 3:45 pm

**Inspection Type:**

- ☒ Unannounced Inspection
- ☐ Announced Inspection

**OPENING CONFERENCE**

- ☒ Presented Credentials
- ☒ Stated authority and purpose of inspection
- ☒ Provided Small Business Resource Information Sheet
- ☒ Provided CBI warning to facility

The following information was obtained verbally from Brian LeMaster unless otherwise noted.

**Process Description:**

The facility has two main operations, metal processing and magnet manufacturing.

For the metal processing, rolled steel is cleaned, milled, annealed, coated, and slit. A cold cleaner degreaser with a 1-bromopropane solvent bath is used before the milling operation to clean the steel. A phosphoric acid bath is used to etch the metal before coating. Spent solvent is returned to the supplier. There is no liquid coolant used during slitting or milling.

For magnet manufacturing, metal is melted in electric induction furnaces, cast into molds, and cooled before undergoing grinding and heat treatment. The metal is nickel, iron, aluminum, and/or cobalt, depending on the product. The casting molds are made out of sand and a binding agent. There is also a blaster for cleaning the parts. Baghouses are connected to [[equipment in the?]] grinding area and annealing area. A sulfuric acid scrubber is connected to the induction furnaces. The sulfuric acid is replaced every six months. The ovens are heated with exo gas that is made on-site.

**Staff Interview:**

The facility renewed their air permit relatively recently. The permit was requested for later review.

The facility staff was uncertain how often the spent solvent is returned to the supplier. The company is moving the facility to Woodstock, Illinois. The facility plans to stop using 1-bromopropane in its operations when it moves.

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### TOUR INFORMATION

**EPA Toured the Facility:** Yes

#### **Data Collected and Observations:**

The pressure gauge at the annealing baghouse was measuring 0 inches of water column; the grinding baghouse pressure gauge was not seen. Collection bins were not seen under the baghouses.

Facility staff was not able to show inspectors the location of the scrubber during the tour. A facility map was requested for later review.

Inspectors observed the cold cleaner. The cold cleaner was in operation at the time of the tour. The lid on the cold cleaner was observed to be closed. The solvent SDS was requested for later review.

Inspectors utilized an optical gas imaging camera during the tour of the facility. No videos were taken.

The facility's air emission calculations for the previous three years were requested for later review.

**Photos and/or Videos:** were taken during the inspection and are listed in Appendix A.

**Field Measurements:** were not taken during this inspection.

### CLOSING CONFERENCE

☒ Provided U.S. EPA point of contact to the facility

#### **Requested documents:**

- FESOP
- Facility map
- Air emissions calculations for the previous three years
- Solvent SDS

### DIGITAL SIGNATURES

Report Author: NATALIE SCHULZ

Digitally signed by NATALIE SCHULZ  
Date: 2024.10.04 08:43:43 -05'00'

Section Supervisor: BRIAN DICKENS

Digitally signed by BRIAN DICKENS  
Date: 2024.10.04 09:59:43 -05'00'

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**APPENDICES**

1. Appendix A: Digital Image Log and Digital Video Log

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**APPENDIX A: DIGITAL IMAGE LOG AND DIGITAL VIDEO LOG**

**Inspector Name:** Valeria Apolinario **Archival Record Location:** Enf\_Arnold Magnetic\_IL\_24

| Image Number | File Name    | Date and Time (incl. Time zone and DST) | Description of Image  |
|--------------|--------------|-----------------------------------------|-----------------------|
| 1            | IMG_0612.JPG | August 6, 2024<br>3:27 pm central       | Solvent cleaning bath |
| 2            | IMG_0613.JPG | August 6, 2024<br>3:27 pm central       | Solvent cleaning bath |