A Toxic Emission Unit (TEU) is defined as an emissions unit, or one or more individual emissions-producing activities, that emit or have the potential to emit any toxic air contaminant, as designated under OAR 340-245-0060.[1]

In November 2021, The CAO rules in Division 245 were updated which included revisions to the list of activities determined to be Categorically Exempt Toxics Emissions Units (CETEUs). These revisions were completed to remove activities that may contribute to potential health risks from Toxic Air Contaminants (TACs). This letter includes information regarding three (3) Categorically Insignificant Activities (CIAs) that were removed from the CETEU list as a part of the November 2021 revisions. This document compares Microchip's welding operations for tool installation, cooling tower chemicals, and ultrapure water (UPW) system to the Oregon DEQ determined thresholds to determine if these activities may be considered Exempt TEUs in the CAO risk assessment.[2]

# CATEGORICALLY INSIGNIFICANT ACTIVITIES

## Welding Operations for Tool Installation

The Gresham Facility has welding operations used for tool installation and maintenance. This welding rod usage would be considered routine maintenance, repair, and replacement support primary operations at the facility. Two (2) types of electrodes are used for these Shielded Metal Arc Welding (SMAW) processes: E6010 and E7018. The estimated annual usages of both electrodes are below the reporting thresholds for the CAO risk assessment as shown in Table 1. In accordance with Appendix B of the Oregon DEQ's Exempt TEU Guidance, this classifies the welding operations at the Gresham facility to be an exempt TEU for the CAO risk assessment.

**Table 1. Estimated Annual SMAW Electrode Usage**

| Electrode Type | Microchip Annual Usage (lbs/yr) | Reporting Threshold (lbs/yr)[2] | Exempt? |
|---|---|---|---|
| SMAW E6010 | 40 | 500 | Yes |
| SMAW E7018 | 40 | 50 | Yes |

## Cooling Tower Chemicals

The three (3) materials used in the Gresham facility's cooling tower are listed in Table 2 below with their respective compositions. Microchip's cooling towers would classify as industrial cooling towers that do not use chromium-based water treatment chemicals but do use water treatment chemicals that may contain volatile or semi-volatile constituents. Bitrol 12.5 contains a small amount of sodium hydroxide, which is a TAC listed in OAR 340-245-8020 Table 2. However, there are no emissions expected from sodium hydroxide usage given the pH and operating conditions of the cooling towers. Additionally, none of the water treatment chemicals are listed in Appendix A-1 or A-2 of the Oregon DEQ's Exempt TEU Guidance for volatiles or semi-volatiles. Since there are no emissions of sodium hydroxide expected and none of the other cooling tower chemicals are listed in Appendix A-1 or A-2 of the Oregon DEQ's Exempt TEU Guidance, cooling tower operation at the Gresham facility is an exempt activity for the CAO risk assessment.[2]

[1] OAR 340-245-0020(59)
[2] ExemptTEUReporting-Appendices.pdf

**Table 2. Cooling Tower Chemical Usage and Composition**

| Chemical | 2024 Usage (gal) | Component | Component Percent (%) | Present on Oregon DEQ List of Reportable Chemicals? |
|---|---|---|---|---|
| Biotrol 12.5 | 1,501 | Sodium hypochlorite | 12.5 | No |
| | | Sodium hydroxide | 0.2-5 | Yes (However, no emissions are expected) |
| Phoszero 1550 | 986 | Citric acid | 1-5 | No |
| Cetamine E655 | 59 | Amines, N-tallow alkyltrimethylenedi- | 2.5-10 | No |
| | | Amines, tallow alkyl, ethoxylated | ≤ 2.5 | No |
| | | Tallow amine | ≤ 1 | No |

## Ultrapure Water (UPW) System

Chemicals used in the Gresham Facility's UPW system are listed in Table 3 below. The only chemicals that have components included on the list of volatiles or semi-volatiles published by Oregon DEQ and usage above the set reporting threshold is 31% hydrochloric acid and sodium hydroxide which has been included in the CAO emission inventory. Both hydrochloric acid and sodium hydroxide are used in the UPW system for regeneration and pH control of reserve osmosis operations. These processes would not be expected to have significant emissions due to the low concentrations present in the wastewater and negligible vapor pressure (provided there is expected to be neutralization during pH control in particular), however Microchip has conservatively included emissions from these operations as part of facilities chemical use in the emission inventory.

The remaining chemicals used in the UPW system do not have constituents present on Appendix A-1 or A-2 of the Oregon DEQ's Exempt TEU Guidance and therefore the remaining chemical usage is an exempt activity for the CAO risk assessment.

**Table 3. UPW System Chemical Usage**

| Chemical | 2024 Usage (gal) | Present on Oregon DEQ List of Reportable Chemicals? | Above Oregon DEQ Guidance Threshold? |
|---|---|---|---|
| Hydrochloric Acid – 31% | 4,433 | Yes | -- |
| Sodium Hydroxide – 25% | 623 | Yes – Included in AQ520 | -- |
| Sodium Hydroxide – 50% Membrane | 65,130 | Yes – Included in AQ520 | -- |
| RoQuest 4000 | 450 | No | No |
| RoQuest 6000 | 2,025 | No | No |
| Vitec 4000 | 550 | No | No |

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[2] ExemptTEUReporting-Appendices.pdf