

2023 Scope 1 and Scope 2 Emission Sources

Per the GHG Protocol, these are the Scope 1 and Scope 2 emissions sources that are applicable to Alto Ingredients' facilities for 2023 sustainability reporting. Scope 1 emissions were included in the evaluation based on Alto's request or availability of data. Note: CO₂ emissions from fermentation were not calculated or included in Scope 1 emissions previously but were estimated for 2023 using stoichiometric calculations, and Alto has indicated that metered data may be included in future years. Mobile fuel combustion was included for Alto ICP and Alto Columbia where it had not been in prior years.

| Facility: Alto Pekin Scope | Emission Source | Included in Evaluation? | Part 98 EPA Reportable? |
|---|--|--|--|
| Scope 1 | Natural gas and biogas combustion (Subpart C) | Yes | Yes |
| Scope 1 | Biogas from Wastewater Treatment (Subpart II) | Yes | Yes |
| Scope 1 | Sale of CO ₂ (Subpart PP) | Yes | Yes |
| Scope 2 | Electricity (Scope 2) | Yes | No |
| Scope 1 | Fermentation of corn | Yes | No |
| Scope 1 | Combustion of ethanol vapors (from truck loading) | Yes | No |
| Scope 1 | Mobile fuel combustion | Yes | No |
| Scope 1 | Aerobic growth of yeast | No | No |
| Scope 1 | Contractor equipment emissions | No | No |
| Scope 1 | Emissions associated with on-road company vehicles | No | No |
| Scope 1 | Fugitive component emissions | No | No |
| Scope 1 | Emissions associated with refrigerant leaks | No | No |
| Scope 1 | Emissions associated with fire suppression usage | No | No |
| | | | |
| Facility: Alto ICP Scope | Emission Source | Included in Evaluation? | Part 98 EPA Reportable? |
| | | | |
| Scope 1 | Natural gas and biogas combustion (Subpart C) | Yes | Yes |
| Scope 1 Scope 1 | Natural gas and biogas combustion (Subpart C) Biogas from Wastewater Treatment (Subpart II) | Yes Yes | Yes Yes |
| Scope 1 | Biogas from Wastewater Treatment (Subpart II) | | |
| Scope 1 Scope 1 | Biogas from Wastewater Treatment (Subpart II) Sale of CO ₂ (Subpart PP) | Yes | Yes |
| Scope 1 Scope 1 Scope 1 | Biogas from Wastewater Treatment (Subpart II) | Yes Yes | Yes Yes |
| Scope 1 Scope 1 Scope 1 Scope 1 | Biogas from Wastewater Treatment (Subpart II) Sale of CO ₂ (Subpart PP) Fermentation of corn Mobile fuel combustion | Yes Yes Yes Yes | Yes Yes No |
| Scope 1 Scope 1 Scope 1 Scope 2 | Biogas from Wastewater Treatment (Subpart II) Sale of CO ₂ (Subpart PP) Fermentation of corn Mobile fuel combustion Electricity (Scope 2) | Yes Yes Yes | Yes Yes No No |
| Scope 1 Scope 1 Scope 1 Scope 1 | Biogas from Wastewater Treatment (Subpart II) Sale of CO ₂ (Subpart PP) Fermentation of corn Mobile fuel combustion | Yes Yes Yes Yes Yes | Yes Yes No No No |
| Scope 1 Scope 1 Scope 1 Scope 2 Scope 1 Scope 1 | Biogas from Wastewater Treatment (Subpart II) Sale of CO ₂ (Subpart PP) Fermentation of corn Mobile fuel combustion Electricity (Scope 2) Contractor equipment emissions Emissions associated with on-road company vehicles | Yes Yes Yes Yes Yes No | Yes Yes No No No No |
| Scope 1 Scope 1 Scope 1 Scope 2 Scope 1 Scope 1 Scope 1 | Biogas from Wastewater Treatment (Subpart II) Sale of CO ₂ (Subpart PP) Fermentation of corn Mobile fuel combustion Electricity (Scope 2) Contractor equipment emissions Emissions associated with on-road company vehicles Fugitive component emissions | Yes Yes Yes Yes Yes No No | Yes Yes No No No No No |
| Scope 1 Scope 1 Scope 1 Scope 2 Scope 1 Scope 1 Scope 1 Scope 1 | Biogas from Wastewater Treatment (Subpart II) Sale of CO ₂ (Subpart PP) Fermentation of corn Mobile fuel combustion Electricity (Scope 2) Contractor equipment emissions Emissions associated with on-road company vehicles Fugitive component emissions Emissions associated with refrigerant leaks | Yes Yes Yes Yes Yes No | Yes Yes No No No No No |
| Scope 1 Scope 1 Scope 1 Scope 2 Scope 1 Scope 1 Scope 1 | Biogas from Wastewater Treatment (Subpart II) Sale of CO ₂ (Subpart PP) Fermentation of corn Mobile fuel combustion Electricity (Scope 2) Contractor equipment emissions Emissions associated with on-road company vehicles Fugitive component emissions | Yes Yes Yes Yes Yes No No | Yes Yes No No No No No |
| Scope 1 Scope 1 Scope 1 Scope 2 Scope 1 | Biogas from Wastewater Treatment (Subpart II) Sale of CO ₂ (Subpart PP) Fermentation of corn Mobile fuel combustion Electricity (Scope 2) Contractor equipment emissions Emissions associated with on-road company vehicles Fugitive component emissions Emissions associated with refrigerant leaks | Yes Yes Yes Yes Yes Yes No No No | Yes Yes No No No No No |
| Scope 1 Scope 1 Scope 1 Scope 2 Scope 1 | Biogas from Wastewater Treatment (Subpart II) Sale of CO ₂ (Subpart PP) Fermentation of corn Mobile fuel combustion Electricity (Scope 2) Contractor equipment emissions Emissions associated with on-road company vehicles Fugitive component emissions Emissions associated with refrigerant leaks Emissions associated with fire suppression usage Emission Source | Yes Yes Yes Yes Yes No No No No No No No Included in | Yes Yes No No No No No No No Part 98 EPA Reportable? |
| Scope 1 Scope 1 Scope 1 Scope 2 Scope 1 | Biogas from Wastewater Treatment (Subpart II) Sale of CO ₂ (Subpart PP) Fermentation of corn Mobile fuel combustion Electricity (Scope 2) Contractor equipment emissions Emissions associated with on-road company vehicles Fugitive component emissions Emissions associated with refrigerant leaks Emissions associated with fire suppression usage Emission Source Natural gas combustion (Subpart C) | Yes Yes Yes Yes Yes Yes No No No No No No No No Included in Evaluation? Yes | Yes Yes No No No No No No No Part 98 EPA Reportable? Yes |
| Scope 1 Scope 1 Scope 1 Scope 1 Scope 2 Scope 1 | Biogas from Wastewater Treatment (Subpart II) Sale of CO ₂ (Subpart PP) Fermentation of corn Mobile fuel combustion Electricity (Scope 2) Contractor equipment emissions Emissions associated with on-road company vehicles Fugitive component emissions Emissions associated with refrigerant leaks Emissions associated with fire suppression usage Emission Source Natural gas combustion (Subpart C) Sale of CO ₂ (Subpart PP) | Yes Yes Yes Yes Yes Yes No No No No No No No No Vo Included in Evaluation? Yes Yes | Yes Yes No No No No No No No Part 98 EPA Reportable? Yes Yes |
| Scope 1 Scope 1 Scope 1 Scope 2 Scope 1 | Biogas from Wastewater Treatment (Subpart II) Sale of CO ₂ (Subpart PP) Fermentation of corn Mobile fuel combustion Electricity (Scope 2) Contractor equipment emissions Emissions associated with on-road company vehicles Fugitive component emissions Emissions associated with refrigerant leaks Emissions associated with fire suppression usage Emission Source Natural gas combustion (Subpart C) | Yes Yes Yes Yes Yes Yes No No No No No No No No Included in Evaluation? Yes | Yes Yes No No No No No No No Part 98 EPA Reportable? Yes |



| Scope 1 | Combustion of ethanol vapors (from truck loading) | Yes | No |
|---------|--|-----|----|
| Scope 1 | Mobile fuel combustion | Yes | No |
| Scope 1 | Fugitive component emissions | No | No |
| Scope 1 | Contractor equipment emissions | No | No |
| Scope 1 | Emissions associated with on-road company vehicles | No | No |
| Scope 1 | Emissions associated with refrigerant leaks | No | No |
| Scope 1 | Emissions associated with fire suppression usage | No | No |

| Facility: Alto Magic Valley Scope | Emission Source | Included in Evaluation? | Part 98 EPA Reportable? |
|---|--|-------------------------|----------------------------|
| Scope 1 | Natural gas combustion (Subpart C) | Yes | Yes |
| Scope 2 | Electricity (Scope 2) | Yes | No |
| Scope 1 | Fermentation of corn | Yes | No |
| Scope 1 | Combustion of ethanol vapors (from truck loading) | Yes | No |
| Scope 1 | Mobile fuel combustion | No | No |
| Scope 1 | Fugitive component emissions | No | No |
| Scope 1 | Emissions associated with on-road company vehicles | No | No |
| Scope 1 | Contractor equipment emissions | No | No |
| Scope 1 | Emissions associated with refrigerant leaks | No | No |
| Scope 1 | Emissions associated with fire suppression usage | No | No |