

Acetic Acid (CH₃COOH) - PCF Summary



- GHG Protocol Product Standard

2026 LSR Aligned

Cradle-to-Gate (1.0 kg)

Coverage: 99.3%

TOTAL PCF INTENSITY

1.758 kg CO₂e / kg

CRADLE-TO-GATE TOTAL



1.7580

100% Fossil | 0% Biogenic / LUC

SCOPE 3 UPSTREAM SHARE



68.26%

1.200 kg CO₂e (Value chain heavy)

TOP MATERIAL HOTSPOT



Methanol (CH₃OH)

0.556 kg CO₂e (31.6% of entire PCF)

MANUFACTURING DIRECT (S1+S2)

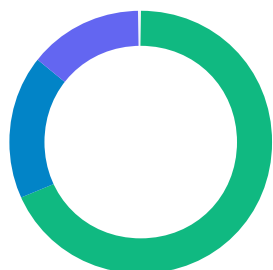


0.5581

31.74% (Reboilers, steam & grid)

GHG Scope & Inventory Distribution

Standard Boundary: Factory Gate



1.76

kg CO₂e/kg

Scope 3 Upstream (Feedstocks & Logistics)

1.200 kg (68.3%)

Scope 1 Direct (Reboilers, Flares, WWTP)

0.312 kg (17.7%)

Scope 2 Indirect (Imported Steam & Power)

0.246 kg (14.0%)

Primary Contributor Intensity Disaggregation

Methanol Precursor (Scope 3)

0.556 kg CO₂e (31.6%)

Carbon Monoxide Feedstock (Scope 3)

0.543 kg CO₂e (30.9%)

Process Thermal Energy & Steam (Scope 1 & 2)

0.228 kg CO₂e (13.0%)

Electricity & Distillation Compressors (Scope 2)

0.117 kg CO₂e (6.7%)

Flaring, Off-gas Venting & Wastewater (Scope 1)

0.213 kg CO₂e (12.1%)

Key Assessment Findings

Audited Findings

VERIFIED

2026 GHG PROTOCOL LSR MANDATORY PARTITIONING

✓ Dual-Precursor Upstream Lock-in

Purchased Methanol and Carbon Monoxide collectively generate 62.5% (1.099 kg CO₂e) of total footprint. The carbon intensity is bound to steam methane reforming (SMR) and cryogenic syngas separation.

1.758
FOSSIL GHG (KG)

0.000
BIOMETHANE (KG)

0.000
DLUC / REMOVALS

1.1 Strategic Decarbonization Roadmap & Abatement Potential

Scenario Benchmarking

DECARBONIZATION LEVER	IMPACTED SCOPE	POTENTIAL ABATEMENT	IMPLEMENTATION HORIZON & FEASIBILITY
Defossilized E-Methanol	Scope 3 (Cat 1)	-25% to -30%	Medium-Term (2026–2030): Green hydrogen & biogenic CO ₂ direct synthesis.
Electric Reboiler / MVR Integration	Scope 1 & Scope 2	-10% to -14%	Short-to-Medium Term: Electrification via Mechanical Vapor Recompression heat pumps.
100% Renewable Power PPA	Scope 2	-6.6%	Immediate: Procurement of verified solar/wind bundled Energy Attribute Certificates.
Advanced Off-Gas Recovery Loop	Scope 1	-3% to -5%	Near-Term: Selective membrane recovery to recycle unreacted CO to the reactor.