Environmental Product Declaration

Elemax™ Air and Water-Resistive Barrier Coating

Elemax™ 2600 Coating and Elemax™ 5000 Liquid Flashing

MOMENTIVE®
SOLUTIONS FOR A SUSTAINABLE WORLD™

Momentive is committed to creating value by collaborating with our customers to deliver innovative solutions and by caring for our people, our customers, our communities, and our planet.

In line with expectations of our stakeholders and consistent with our Core Values and Safety and Sustainability Policy, Momentive strives to implement business practices that improve not only financial results, but environmental, social and corporate governance performance.

At Momentive, we believe it's our responsibility to develop pioneering high-performance silicones, specialty products, solutions, and technologies focused on enabling Solutions for a Sustainable World™ and improving the quality of life for all.

With more than 80 years of research and development experience, we approach every opportunity with a keen sense of possibility and tireless dedication to discovery.

We serve more than 25 widely diversified industries, including construction – where we provide an extensive portfolio of GE branded sealants and coatings.□

Licensed Partner

Elemax 2600 and Elemax 5000 work to control moisture and humidity inside your building - and create a durable barrier to prevent air and water leaks from joints, gaps, seams, fasteners, rough openings, and transitions.

UL CERTIFIED
ENVIRONMENTAL PRODUCT DECLARATION
UL.COM/EPD

This declaration is an environmental product declaration (EPD) in accordance with ISO 14025, ISO 14040, and ISO 21930. EPDs rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc. Accuracy of Results: EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. Comparability: EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.

EPD PROGRAM AND PROGRAM OPERATOR NAME, ADDRESS, LOGO, AND WEBSITE	UL Environment 333 Pfingsten Rd, Northbrook, IL 60062 www.ul.com www.spot.ul.com
GENERAL PROGRAM INSTRUCTIONS AND VERSION NUMBER	Program Operator Rules v 2.7 2022
MANUFACTURER NAME AND ADDRESS	Momentive Performance Materials 2750 Balltown Road, Niskayuna, NY 12309
DECLARATION NUMBER	4790640255.101.1
DECLARED PRODUCT & DECLARED UNIT	Elemax Air Barriers Declared Unit = 1 m^2
REFERENCE PCR AND VERSION NUMBER	ASTM International's Product Category Rules for Preparing an Environmental Product Declaration for Water-Resistive and Air Barriers
DESCRIPTION OF PRODUCT APPLICATION/USE	Momentive products are primarily used in commercial settings.
PRODUCT RSL DESCRIPTION	N/A
MARKETS OF APPLICABILITY	Global
DATE OF ISSUE	March 1, 2023
PERIOD OF VALIDITY	5 Years
EPD TYPE	Product Specific
RANGE OF DATASET VARIABILITY	N/A
EPD SCOPE	Cradle-to-Gate
YEAR(S) OF REPORTED PRIMARY DATA	August 2021 - May 2022
LCA SOFTWARE & VERSION NUMBER	SimaPro 9.2.0.2
LCI DATABASE(S) & VERSION NUMBER	Ecoinvent v3.5 & USLCI v2.0
LCIA METHODOLOGY & VERSION NUMBER	TRACI 2.1; CML 4.1
The sub-category PCR review was conducted by:	UL Environment - PCR Review Panel - epd@ul.com
This declaration was independently verified in accordance with ISO 14025: 2006. ISO 21930 serves as the core PCR for LCA rules and calculations. ☐ INTERNAL ☒ EXTERNAL	Cooper McC Cooper McCollum, UL Environment
This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:	Sustainable Solutions Corporation
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	James Mellentine, Thrive ESG

1 Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds , e.g., Type 1 certifications, health assessments and declarations, environmental impact assessments, etc. Accuracy of Results: EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. Comparability: EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.

General Information

Description of Company/Organization

Momentive Performance Materials (Momentive) is a premier global advanced materials company with a cutting-edge focus on silicones and specialty products. Headquartered in Niskayuna, New York, USA, Momentive has a network of more than 40 locations in 20-plus countries around the world. Our locations span from urban to suburban to rural, and we have strong relationships with the diverse local communities in each area. This global breadth positions us to serve our diverse customer base of more than 4,000 customers in 100-plus countries. We deliver solutions designed to drive performance across a wide range of industries, including agriculture, automotive, aerospace, electronics, personal care, consumer products, building, and construction. For the construction industry, we provide an extensive portfolio of GE (General Electric) branded sealants and coatings for use across the building envelope. In 2006, Momentive purchased GE Advanced Materials, becoming the exclusive global licensee of GE branded silicone sealants and coatings. Under Momentive, we continue to build on GE's legacy - turning the latest innovations in silicone technology into advanced solutions that perform in the real world. Today, we offer a complete line of building envelope silicone solutions for roof coating, air and water barriers, architectural coatings, weather sealing, structural glazing, insulating glass, and structural glazing. From the smallest buildings to iconic structures like the Empire State Building - our solutions are an integral part of successful construction and restoration projects of all shapes and sizes across the globe. GE is a registered trademark of General Electric Company and is used under license by Momentive Performance Materials Inc.

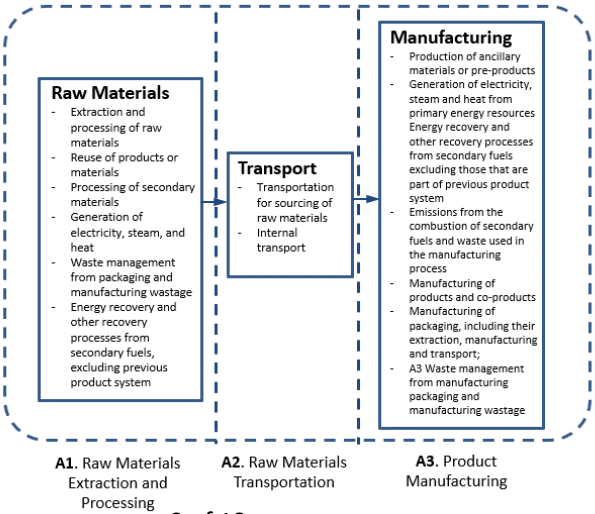
Production Description

Product Name: Elemax™ 2600 and Elemax™ 5000
Product Characteristics: Elemax Air Barriers are silicone coatings that provide long-term protection from temperature, weathering, and UV damage.

Additional features include:

- 100% silicone polymer
- Solvent free
- Easy application

Flow Diagram



Manufacturer Specific EPD

This product-specific EPD was developed based on the cradle-to-gate (modules A1-A3) Life Cycle Assessment. The EPD accounts for raw material extraction and processing, raw material transport, and product manufacturing. Manufacturing data were gathered directly from company personnel. For this document, Elemax 2600 and Elemax 5000 are represented in the "LCA Results" section separately.

Note: Environmental impact results will be proportional to dry product thickness if applied for a specific application to a thickness other than as specified in the EPD.

Application

The Momentive Elemax Air Barriers is ideal for a wide range of building sealing applications, including but not limited to: drafts, air and water leaks, mold, mildew, rot rust, etc.

Material Composition

The composition of the Elemax™ Air and Water-Resistive Barrier Coating is as follows (mass %):

Component	Elemax 2600	Elemax 5000
Filler	33.93%	43.00%
Treated Filler	10.00%	7.09%
Polymer	49.07%	49.91%
Pigment	7.00%	0.00%
Total	**100.00%**	**100.00%**

Technical Data

For the declared product, the following technical data in the delivery status must be provided with reference to the test standard:

Category	Elemax 2600/5000	Unit
Density	1300-1400	kg/m^3
Air Permeance - Tested at 1.57 psf (ASTM E2178)	0.00004	cfm/ft^2
Assemble Air Leakage - Tested at 1.57 psf (ASTM E2357)	0.0002	cfm/ft^2
Water Vapor Permeance (ASTM E96 Procedure B)	10.2 perms @ 17 mils DFT (Elemax 2600) 2.14 perms @ 63 mils DFT (Elemax 5000)	-
Water Penetration (ASTM E331)	No water penetration observed after 15 min @ 62.5 psf	-
Resistance to Wind Driven Rain (ASTM D6904)	Pass: No visual leaks or moisture weight gain observed after 24 hrs @ 26 psf	-
UV & Weathering Resistance (ASTM G154)	No degradation after 5000 hours	-
Self Sealability Around Nails (ASTM D1970)	Pass	-
Crack Bridging Ability (1.5 mm) (ASTM C1305)	Pass	-
Mildew Resistance (ASTM D5590)	0 - No growth	-
Application Temperature Range	-18 °C - 66 °C	-
Service Temperature Range	-40 °C - 149 °C	-
Pull of Strength (Concrete) (ASTM D4541)	126 psi	-
Pull of Strength (Fiberglass Mat Faced Gympsum Sheathing) (ASTM D4541)	44 psi	-
Tensile Strength (ASTM D412)	204 psi	-
Elongation (ASTM D412)	5.42	-
Cure Time	1-2 days	-
Recoat Time	<2 hours	-
Multi-Story Wall Assembly Burn Test (NFPA 285)	Passed in assembly tested and acceptable for use in NFPA 285 various wall assemblies per engineering analysis	-
Surface Burning Characteristics (ASTM E84)	Flame Spread: 10 Smoke Developed: 185 NFPA Class A, UBC Class 1	-
Oxygen Consumption (Cone) Calorimeter (ASTM E1354)	Effective Heat of Combustion: 4.6 MJ/kg Peak Heat Release Rate: 52. kW/m^2 Total Heat Release" 7.55 MJ/m^2	-
Sequential Testing - Structural (ASTM E1233)	No cracking within the field panel, substrate joints and at interface of flashing	-
Sequential Testing - Racking (ASTM E72)		-

Category	Elemax 2600/5000	Unit
Sequential Testing - Restrained Environmental Conditioning (ICC-ES AC212)		-
Sequential Testing - Water Penetration (ASTM E331)	No visible water penetration after Structural, Racking, Retstrained Enviornmental Conditioning: Tested for 15 min. at 2.86 psf	-
Sequential Testing - Weathering - Hydrostatic Pressure Test (AATCC 127)	No water penetration after UV Exposure and accelerated aging: Tested for 5 hours with 21.7 in of hydrostatic head	-
Sequential Testing - Weathering - Freeze - Thaw (ICC-AC212 and ASTM E2485)	No cracking, checking, crazing, delamination or other deleterious efffects	-
Sequential Testing - Weathering - Water Resistance (ASTM D2247)	No deleterious effects after 14 day exposure	-
Sequential Testing - Weathering - Tensile Bond (ASTM C297)	> 15 psi	-
Hardness, Durometer (Type A Indentor) (ASTM D2240)	24 - 26	-
Ultimate Tensile Strength (ASTM D412)	> 300 psi	-
Ultimate Elongation (ASTM D412)	> 650%	-
Peel Strength (Average) (21-Day Cure @ 75°F (21°C) 50% RH) (ASTM C794)	> 40 pli	-
Joint Move Capability (ASTM C719)	±50	-
Application Temperature Range	-18 °C - 50 °C	-
Service Temperature Range (After Cure)	-48 °C - 121 °C	-
Weathering and U.V. Resistance	Excellent	-
Full Cure	1-2 days	-
Solids Content (ASTM D2697)	90%	% by volume
Viscosity (ASTM D2196, Method A)	25,000 (Elemax 2600) 15,000 (Elemax 5000)	centipoise

Market Placement / Application Rules

Momentive Elemax 2600 and 5000 air barriers are produced in accordance with Modified ASTM D2697; ASTM D2196, Method A; EPA Method 24; ICC ESR-3983; ASTM E2178; CAN/ULC-741; ASTM E2357; CAN/ULC-742; ASTM E96 Procedure BW; ASTM E96 Procedure B; ASTM E96 Procedure A; ASTM E331; ASTM D6904; ASTM G154; ASTM D1970; ASTM C1305; ASTM D5590; ASTM D4541; ASTM D412; NFPA 285; ASTM E84; ASTM E1354; ASTM E1233; ASTM E72; ICC-ES AC212; AATCC 127; ASTM E2485 Method B; ASTM D2247; ASTM C297; ABAA; WPSTM C1454; ASTM C679; ASTM D2240; ASTM C794; ASTM C719; AC 212; AC38; E2556

Methodological Framework

Declared Unit

The declaration refers to the declared unit of 1 kg of Elemax™ Air and Water-Resistive Barrier Coating.

Parameter	Elemax 2600	Elemax 5000	Unit
Declared Unit	1.00	1.00	m^2
Product Density	1.30	1.40	kg/liter
Coverage Rate	1.72	1.72	m^2/liter
Coverage	0.756	0.814	kg/m^2
Conversion Factor to 1 kg	1.32	1.23	-

System Boundary

This is a cradle-to-gate Environmental Product Declaration. The following life cycle phases were considered:

Product Stage			Construction Process Stage		Use Stage							End-of-Life Stage*				Benefits and Loads Beyond the System Boundaries
Raw Material Supply	Transport	Manufacturing	Transport from Gate to the Site	Construction/Installation Process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Deconstruction/Demolition	Transport	Waste Processing	Disposal	Reuse-Recovery-Recycling Potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

Description of the System Boundary Stages Corresponding to the PCR

(X = Included; MND = Module Not Declared)

*This includes provision of all materials, products and energy, packaging processing and its transport, as well as waste processing up to the end-of-life waste state or disposal of final residues.

Reference Service Life and Building Estimated Service Life

The Reference Service Life is determined by the guidance from the Product Category Rules and varies by product type and use phase scenario. Since the use phase is not included in this study, no Reference Service Life is declared.

Allocation

The LCI data was collected from the Waterford, NY manufacturing facility from August 2021 to May 2022. The manufacturing for all products made at this facility have similar energy, waste, and water input requirements. There were other products in production at this facility during this period, and they were all treated to the same manufacturing requirements as well. Allocation was done on a mass basis.

Cut-off Criteria

Processes whose total contribution to the final result, with respect to their mass and in relation to all considered impact categories, is less than 1% can be neglected. The sum of the neglected processes may not exceed 5% by mass of the considered impact categories. For that a documented assumption is admissible.

For Hazardous Substances - as defined by the U.S. Occupational Health and Safety Act the following requirements apply:

- The Life Cycle Inventory (LCI) of hazardous substances will be included, if the inventory is available.
- If the LCI for a hazardous substance is not available, the substance will appear as an input in the LCI of the product, if its mass represents more than 0.1% of the product composition.
- If the LCI of a hazardous substance is approximated by modeling another substance, documentation will be provided.

This EPD is in compliance with the cut-off criteria. No processes were neglected or excluded. Capital items for the production processes (machine, buildings, etc.) were not taken into consideration.

Data Sources/Background Data

For life cycle modeling, the SimaPro v9.2.0.2 Software, a recognized LCA modeling software program, was used. All background data sets relevant for production and disposal were taken from this software. Datasets include those from Ecoinvent v3.5 and the US LCI database.

Data Quality

For the data used in this LCA, the data quality is considered to be good to high quality. The data and data sets cover all relevant process steps and technologies over the supply chain of the represented air barrier products. The majority of secondary data sets are from the Ecoinvent v3.5 database and the US LCI database. The study adopts critically reviewed data wherever possible for consistency, precision, and reducibility to limit uncertainty. The data used are complete and representative of North America in terms of the geographic and technological coverage and is of a recent vintage, i.e., less than ten years old.

Period Under Review

The data used for the Life Cycle Assement refer to the production processes from August 2021 to May 2022. The quantities of raw materials, energies, auxilary materials, and supplies used have been ascertained as average monthly values.

Comparability

A comparison or an evaluation of EPD data is only possible if all data sets to be compared were created according to ISO 21930 and the building context, respectively the product-specific characteristics of performance, are taken into account. Environmental product declarations from different programs may not be comparable. Full conformance with the PCR for air barrier products allows EPD comparability only when all stages of a product's life cycle have been considered. However, variations and deviations are possible.

Estimates and Assumptions

A significant majority of sales of the air barrier products in this LCA occur within the United States.

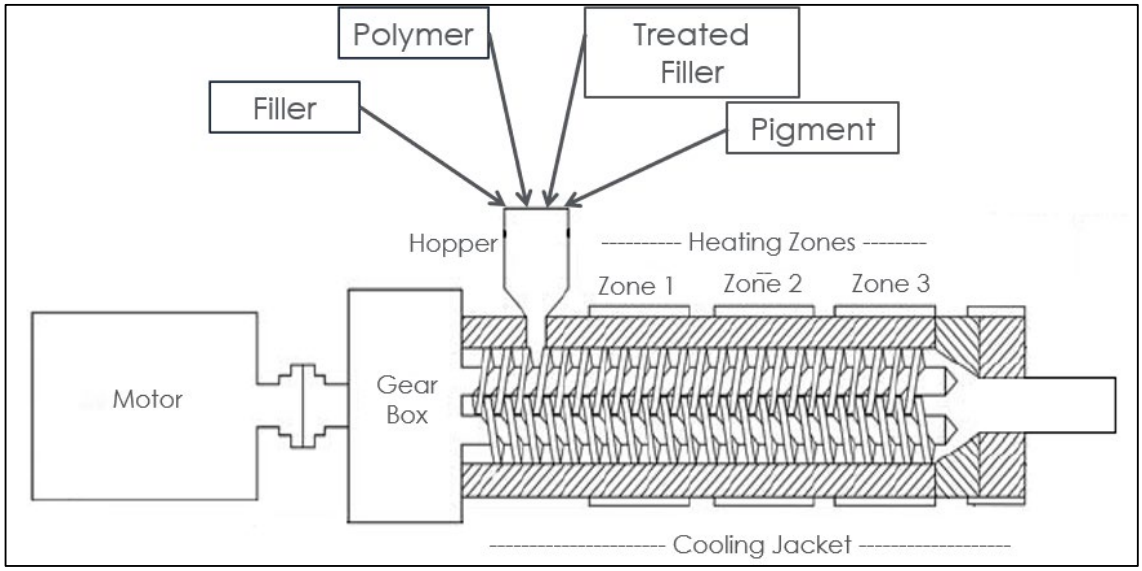
Coverage Rate Value:	Calculated as an average from low-coverage (5.6 m^2 per gallon) and high-coverage (7.4 m^2 per gallon) scenarios.

Technical Information and Scenarios

Manufacturing

All raw materials are loaded into barrels along a screw extruder. Materials are then added into the extruder while properties of the mixture are monitored. An electric heater keeps the extruder at the desired temperature, then an electric external glycol chiller cools the material before leaving the extruder. Packaging is entirely automated, and the products can be packaged in either pails, drums, or “sausage” packs.

Manufacturing Location: Waterford, NY



Packaging

These products are packaged with cardboard, plastic, and steel.

Component	Elemax 2600	Elemax 5000
Steel	0.08%	3.61%
LDPE	32.39%	0.00%
HDPE	67.53%	0.00%
Cardboard	0.00%	95.57%
Mylar	0.00%	0.81%
Total	**100.00%**	**100.00%**

LCA Results - Elemax 2600

Results shown below were calculated using TRACI 2.1 Methodology.

TRACI 2.1 Impact Assessment						
Parameter	**Parameter**	**Unit**	**A1**	**A2**	**A3**	**Total**
GWP	Global Warming Potential	kg CO_2-Eq.	5.73E+00	5.70E-03	5.59E+00	1.13E+01
ODP	Depletion Potential of the Stratospheric Ozone Layer	kg CFC-11 Eq.	5.19E-03	2.17E-13	2.13E-07	5.19E-03
AP Air	Acidification Potential for Air Emissions	kg SO_2-Eq.	3.06E-02	3.40E-05	3.27E-02	6.34E-02
EP	Eutrophication Potential	kg N-Eq.	1.23E-02	1.90E-06	5.66E-03	1.79E-02
SP	Smog Formation Potential	kg O_3-Eq.	4.11E-01	9.32E-04	1.46E-01	5.58E-01
FFD	Fossil Fuel Depletion	MJ-surplus	7.01E+00	1.09E-02	1.11E+01	1.81E+01

Results shown below were calculated using CML methodology.

CML 4.1 Impact Assessment						
Parameter	**Parameter**	**Unit**	**A1**	**A2**	**A3**	**Total**
GWP	Global Warming Potential	kg CO_2-Eq.	5.76E+00	5.72E-03	5.65E+00	1.14E+01
ODP	Depletion Potential of the Stratospheric Ozone Layer	kg CFC-11 Eq.	5.25E-04	2.15E-13	1.82E-07	5.25E-04
AP Air	Acidification Potential for Air Emissions	kg SO_2-Eq.	3.00E-02	2.81E-05	3.73E-02	6.73E-02
EP	Eutrophication Potential	kg$(PO_4)_3$-Eq.	6.98E-03	4.98E-06	2.76E-03	9.75E-03
POCP	Formation Potential of Tropospheric Ozone Photochemical Oxidants	kg ethane-Eq.	1.96E-03	1.30E-06	2.64E-03	4.60E-03
ADPE	Abiotic Depletion Potential for Non-Fossil Resources	kg Sb-Eq.	4.81E-05	0.00E+00	8.11E-06	5.62E-05
ADPF	Abiotic Depletion Potential for Fossil Resources	MJ	6.49E+01	7.33E-02	7.08E+01	1.36E+02

Results below contain the resource use throughout the life cycle of the product.

Resource Use						
Parameter	**Parameter**	**Unit**	**A1**	**A2**	**A3**	**Total**
PERE	Renewable Primary Energy as Energy Carrier	MJ, lower calorific value	4.57E+00	0.00E+00	5.32E+00	9.89E+00
PERM	Renewable Primary Energy Resources as Material Utilization	MJ, lower calorific value	3.68E+00	0.00E+00	1.58E-01	3.84E+00
PENRE	Nonrenewable Primary Energy as Energy Carrier	MJ, lower calorific value	7.84E+01	7.78E-02	7.86E+01	1.57E+02
PENRM	Nonrenewable Primary Energy as Material Utilization	MJ, lower calorific value	6.60E+00	0.00E+00	4.46E+00	1.11E+01
SM	Use of Secondary Material	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	Use of Renewable Secondary Fuels	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	Use of Non-Renewable Secondary Fuels	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RE	Energy Recovered From Disposal of Waste	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	Use of Net Fresh Water	m^3	1.02E-01	0.00E+00	4.17E-02	1.44E-01

Results below contain the total primary resource use throughout the life cycle of the product.

Total Primary Resource Use					
Parameter	**Unit**	**A1**	**A2**	**A3**	**Total**
Non-renewable Fossil	MJ (HHV)	7.04E+01	7.79E-02	7.79E+01	1.48E+02
Non-renewable Nuclear	MJ (HHV)	8.16E+00	0.00E+00	8.30E-01	8.99E+00
Renewable (Solar, Wind, Hydroelectric, and Geothermal)	MJ (HHV)	7.48E+00	0.00E+00	5.40E+00	1.29E+01
Renewable (Biomass)	MJ (HHV)	3.67E+00	0.00E+00	1.57E-01	3.83E+00

Results below contain the output flows and wastes throughout the life cycle of the product.

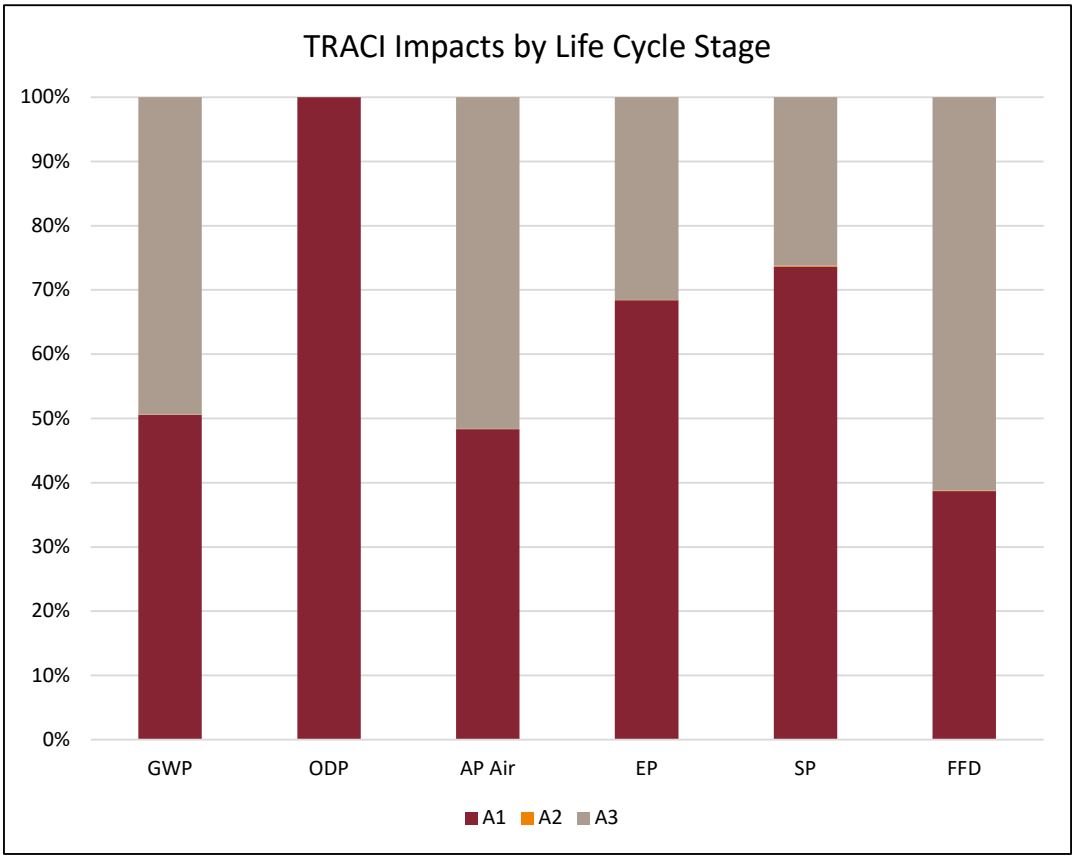
Output Flows and Waste Categories						
Parameter	**Parameter**	**Unit**	**A1**	**A2**	**A3**	**Total**
HWD	Hazardous Waste Disposed	kg	4.02E-05	0.00E+00	3.68E-02	3.68E-02
NHWD	Non-hazardous Waste Disposed	kg	3.77E+00	0.00E+00	6.07E-01	4.37E+00
HRWD	High-Level Radioactive Waste Disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
IRWD	Intermediate and Low-Level Radioactive Waste Disposed	kg	1.50E-04	0.00E+00	5.79E-05	2.08E-04
CRU	Components for Re-Use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MR	Materials for Recycling	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	Materials for Energy Recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	Recovered Energy Exported From Product System	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Results below contain the biogenic carbon emissions and removals throughout the life cycle of the product.

Biogenic Carbon Emissions and Removals						
Parameter	**Parameter**	**Unit**	**A1**	**A2**	**A3**	**Total**
BCRP	Biogenic Carbon Removal from Product	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BCEP	Biogenic Carbon Emissions from Product	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BCRK	Biogenic Carbon Removal from Packaging	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BCEK	Biogenic Carbon Emissions from Packaging	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BCEW	Biogenic Carbon Emissions from Combustion of Waste from Renewable Sources Used in Production Process	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CCE	Calcination Carbon Emissions	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CCR	Carbonation Carbon Removal	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CWNR	Carbon Emissions from Combustion of Waste from Non-renewable Sources Used in Production Process	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Interpretation

The raw material life cycle stage (A1) dominates the impacts in the ozone depletion, eutrophication, and smog formation impact categories. This is due to the upstream production of polymers used in the product. The manufacturing stage (A3) contributes significantly with the A1 stage in the global warming potential, acidification, and fossil fuel depletion impact categories. This is due to the natural gas and electricity use in the manufacturing of the product.



LCA Results - Elemax 5000

Results shown below were calculated using TRACI 2.1 Methodology.

TRACI 2.1 Impact Assessment						
Parameter	**Parameter**	**Unit**	**A1**	**A2**	**A3**	**Total**
GWP	Global Warming Potential	kg CO_2-Eq.	6.58E+00	4.57E-03	5.79E+00	1.24E+01
ODP	Depletion Potential of the Stratospheric Ozone Layer	kg CFC-11 Eq.	6.16E-03	1.74E-13	2.31E-07	6.16E-03
AP Air	Acidification Potential for Air Emissions	kg SO_2-Eq.	3.50E-02	2.73E-05	3.44E-02	6.94E-02
EP	Eutrophication Potential	kg N-Eq.	1.40E-02	1.52E-06	5.84E-03	1.98E-02
SP	Smog Formation Potential	kg O_3-Eq.	4.78E-01	7.48E-04	1.47E-01	6.25E-01
FFD	Fossil Fuel Depletion	MJ-surplus	7.66E+00	8.76E-03	1.09E+01	1.85E+01

Results shown below were calculated using CML methodology.

CML 4.1 Impact Assessment						
Parameter	**Parameter**	**Unit**	**A1**	**A2**	**A3**	**Total**
GWP	Global Warming Potential	kg CO_2-Eq.	6.61E+00	4.59E-03	5.84E+00	1.25E+01
ODP	Depletion Potential of the Stratospheric Ozone Layer	kg CFC-11 Eq.	6.22E-04	1.73E-13	1.97E-07	6.23E-04
AP Air	Acidification Potential for Air Emissions	kg SO_2-Eq.	3.42E-02	2.25E-05	3.92E-02	7.34E-02
EP	Eutrophication Potential	kg$(PO_4)_3$-Eq.	8.02E-03	3.99E-06	2.83E-03	1.09E-02
POCP	Formation Potential of Tropospheric Ozone Photochemical Oxidants	kg ethane-Eq.	1.95E-03	1.04E-06	2.75E-03	4.70E-03
ADPE	Abiotic Depletion Potential for Non-Fossil Resources	kg Sb-Eq.	5.74E-05	0.00E+00	7.63E-06	6.51E-05
ADPF	Abiotic Depletion Potential for Fossil Resources	MJ	7.19E+01	5.88E-02	6.88E+01	1.41E+02

Results below contain the resource use throughout the life cycle of the product.

Resource Use						
Parameter	**Parameter**	**Unit**	**A1**	**A2**	**A3**	**Total**
PERE	Renewable Primary Energy as Energy Carrier	MJ, lower calorific value	5.46E+00	0.00E+00	5.65E+00	1.11E+01
PERM	Renewable Primary Energy Resources as Material Utilization	MJ, lower calorific value	4.32E+00	0.00E+00	4.17E-01	4.74E+00
PENRE	Non-Renewable Primary Energy as Energy Carrier	MJ, lower calorific value	8.75E+01	6.24E-02	7.64E+01	1.64E+02
PENRM	Non-Renewable Primary Energy as Material Utilization	MJ, lower calorific value	7.20E+00	0.00E+00	1.44E-02	7.22E+00
SM	Use of Secondary Material	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	Use of Renewable Secondary Fuels	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	Use of Non-Renewable Secondary Fuels	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RE	Energy Recovered from Disposal of Waste	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	Use of Net Fresh Water	m^3	1.21E-01	0.00E+00	4.88E-02	1.70E-01

Results below contain the total primary resource use throughout the life cycle of the product.

Total Primary Resource Use					
Parameter	**Unit**	**A1**	**A2**	**A3**	**Total**
Non-renewable Fossil	MJ (HHV)	7.79E+01	6.25E-02	7.58E+01	1.54E+02
Non-renewable Nuclear	MJ (HHV)	9.65E+00	0.00E+00	6.51E-01	1.03E+01
Renewable (Solar, Wind, Hydroelectric, and Geothermal)	MJ (HHV)	8.87E+00	0.00E+00	5.99E+00	1.49E+01
Renewable (Biomass)	MJ (HHV)	4.31E+00	0.00E+00	4.16E-01	4.72E+00

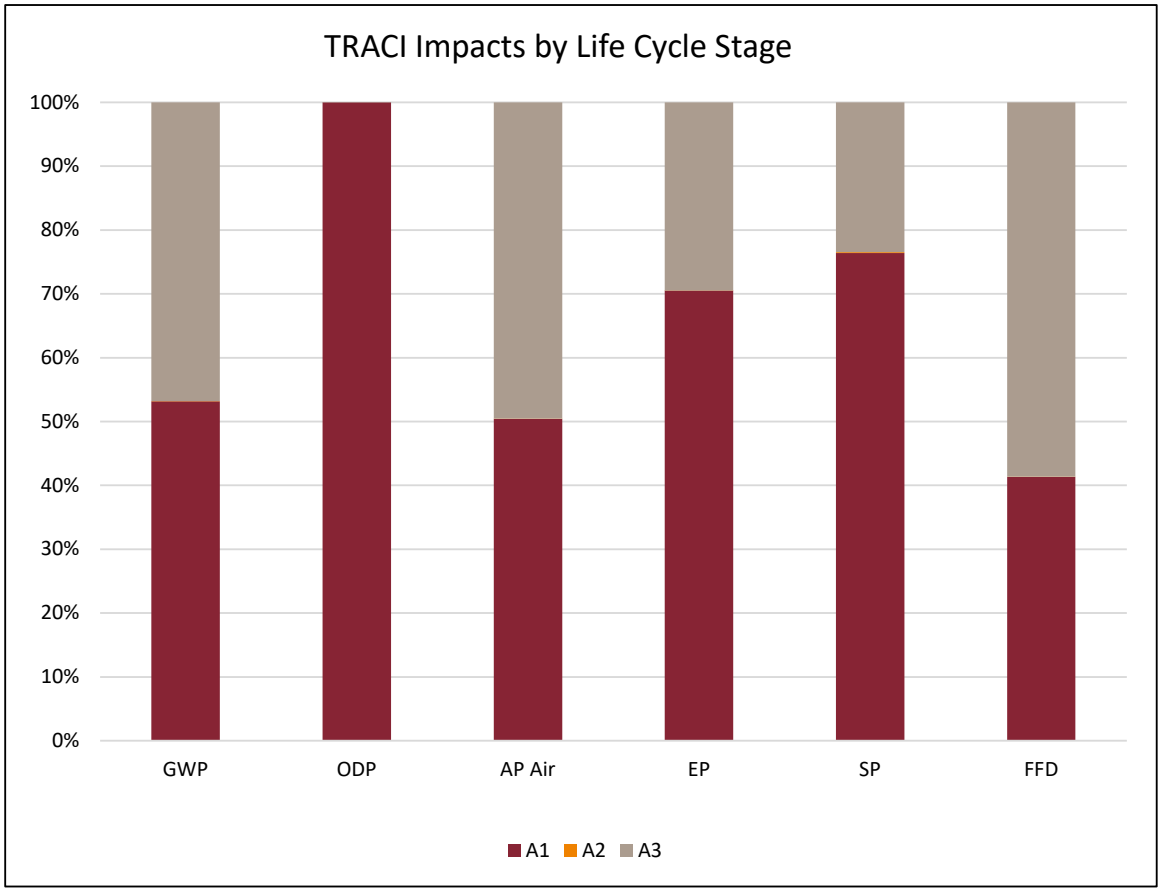
Results below contain the output flows and wastes throughout the life cycle of the product.

Output Flows and Waste Categories						
Parameter	**Parameter**	**Unit**	**A1**	**A2**	**A3**	**Total**
HWD	Hazardous Waste Disposed	kg	4.72E-05	0.00E+00	3.95E-02	3.95E-02
NHWD	Non-Hazardous Waste Disposed	kg	4.70E+00	0.00E+00	6.44E-01	5.35E+00
HRWD	High-Level Radioactive Waste Disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
IRWD	Intermediate and Low-Level Radioactive Waste Disposed	kg	1.70E-04	0.00E+00	6.04E-05	2.31E-04
CRU	Components for Re-Use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MR	Materials for Recycling	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	Materials for Energy Recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	Recovered Energy Exported from Product System	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Results below contain the biogenic carbon emissions and removals throughout the life cycle of the product.

Biogenic Carbon Emissions and Removals						
Parameter	**Parameter**	**Unit**	**A1**	**A2**	**A3**	**Total**
BCRP	Biogenic Carbon Removal from Product	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BCEP	Biogenic Carbon Emissions from Product	MJ, lower calorific value	0.00E+00	0.00E+00	5.74E-02	5.74E-02
BCRK	Biogenic Carbon Removal from Packaging	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BCEK	Biogenic Carbon Emissions from Packaging	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BCEW	Biogenic Carbon Emissions from Combustion of Waste from Renewable Sources Used in Production Process	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CCE	Calcination Carbon Emissions	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CCR	Carbonation Carbon Removal	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CWNR	Carbon Emissions from Combustion of Waste from Non-Renewable Sources Used in Production Process	MJ, lower calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00

The raw material life cycle stage (A1) dominates the impacts in the ozone depletion, eutrophication, and smog formation impact categories. This is due to the upstream production of polymers used in the product. The manufacturing stage (A3) contributes significantly with the A1 stage in the global warming potential, acidification, and fossil fuel depletion impact categories. This is due to the natural gas and electricity use in the manufacturing of the product.



Additional Environmental Information

Environment and Health During Manufacturing

Momentive has well-established Environmental, Health, and Safety (EHS) and product stewardship management standards, policies, practices, and procedures. Momentive has committed to implementing the EHS and product stewardship guiding principles established by the American Chemistry Council. Collectively, these standards, policies, practices, and procedures help Momentive to achieve its goals of complying with all applicable EHS requirements and protecting the health and safety of our employees, contractors, and communities.

Environmental and Health During Use

The product does not present a significant risk to human health during installation when stored, used, and disposed of in accordance with Momentive instructions, including the safety data sheet and technical data sheet, and also established industry safety and industrial hygiene practices.

Extraordinary Effects

Fire
Burning may generate emissions harmful to health and the environment. Avoid exposure to fire.

Water
None

Mechanical Destruction
None

Delayed Emissions

Global warming potential is calculated using the TRACI 2.1 and CML 4.1 impact assessment methodologies. Delayed emissions are not considered.

Environmental Activities and Certifications

Momentive has set sustainability goals to significantly reduce our environmental footprint by 2025 and has developed plans to meet these goals. In addition, we have trained 100% of technologists in Green Chemistry principles since 2020-2021. Momentive has maintained a Silver Sustainability Rating from Ecovadis for 2020 and 2021 and received a Gold Rating for the year 2022. The Ecovadis Sustainability Assessment provides an actionable scorecard and performance improvement tool for global supply chains. We continue to learn and improve as we work towards our goal of achieving an Ecovadis Platinum rating by 2025.

Further Information

Momentive Performance Materials
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References

PCR Part B	ASTM International's Product Category Rules for Preparing an Environmental Product Declaration for Water-Resistive and Air Barriers
ISO 14025	ISO 14025:2011-10, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.
ISO 14040	ISO 14044 Amd 1:2017/amd 2:2020 Environmental management — Life cycle assessment — Requirements and guidelines
ISO 14044	ISO 14044:2006-10, Environmental management — Life cycle assessment — Requirements and guidelines.
ISO 21930	ISO 21930:2017, Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products and services.
TRACI 2.1	US EPA, Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI).
CML 2001	Center of Environmental Science of Leiden University impact categories and characterisation methods for impact assessment (CML).
Life Cycle Assessment	Momentive Air Barriers and Joint Sealants Life Cycle Assessment, Sustainable Solutions Corporation, February 2023.
SimaPro 9.2.0.2	SimaPro Analyst, 9.2.0.2 Multi User, Copyright PRE Consultants 2016

Contact Information

Study Commissioner

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