

# Environmental Product Declaration

according to ISO 14025 and EN 15804



This declaration is for:  
**Anova™ 1005 Modifier**

Provided by:  
**Cargill B.V.**



program operator  
**Stichting MRPI®**  
publisher  
**Stichting MRPI®**  
[www.mrpi.nl](http://www.mrpi.nl)

MRPI® registration  
**1.1.00155.2020**  
EPD registration  
**00001330**  
date of first issue  
**28-08-2020**  
date of this issue  
**28-08-2020**  
expiry date  
**28-08-2025**



## COMPANY INFORMATION



Cargill B.V.  
Evert van de Beekstraat 378  
1118 CZ  
Schiphol  
020 5006000

<https://www.cargill.nl/en/home>

## PRODUCT

Anova™ 1005 Modifier

## DECLARED UNIT/FUNCTIONAL UNIT

kg

## DESCRIPTION OF PRODUCT

Anova 1005 is a modifier for the asphalt industry.

## VISUAL PRODUCT



## MRPI® REGISTRATION

1.1.00155.2020

## EPD REGISTRATION

00001330

## DATE OF ISSUE

28-08-2020

## EXPIRY DATE

28-08-2025

## SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by **Pieter Stadhouders, EcoReview V.O.F.**

The LCA study has been done by **Saro Campisano, Ecochain Technologies B.V.**

The certificate is based on an LCA dossier according to ISO14025 and NEN-EN15804+A1. It is verified according to the 'EPD-MRPI® verification protocol May 2017.v3.1'. EPDs of construction products may not be comparable if they do not comply with NEN-EN15804+A1. Declaration of SVHC that are listed on the 'Candidate List of Substances of Very High Concern for Authorisation' when content exceeds the limits for registration with ECHA.

## PROGRAM OPERATOR

Stichting MRPI®  
Kingsfordweg 151  
1043GR  
Amsterdam

ir. J-P den Hollander, Managing director MRPI®

## MORE INFORMATION

<https://www.cargill.com/bioindustrial/anova-asphalt>

## DEMONSTRATION OF VERIFICATION

CEN standard EN15804 serves as the core PCR[a]

Independent verification of the declaration and data,  
according to EN ISO 14025:2010:

internal:                      external: X

Third party verifier:

Pieter Stadhouders, EcoReview

[a] PCR = Product Category Rules

## DETAILED PRODUCT DESCRIPTION

The Anova™ 1005 rheology modifier is typically used to modify the bitumen grade and rheology of bitumen (such as penetration or Performance Grade). It can be used in paving grade bitumen, polymer-modified bitumen (PMB), and both anionic and cationic asphalt emulsions

COMPONENT (> 1%)	[kg / %]
Confidential	

(\*) > 1% of total mass

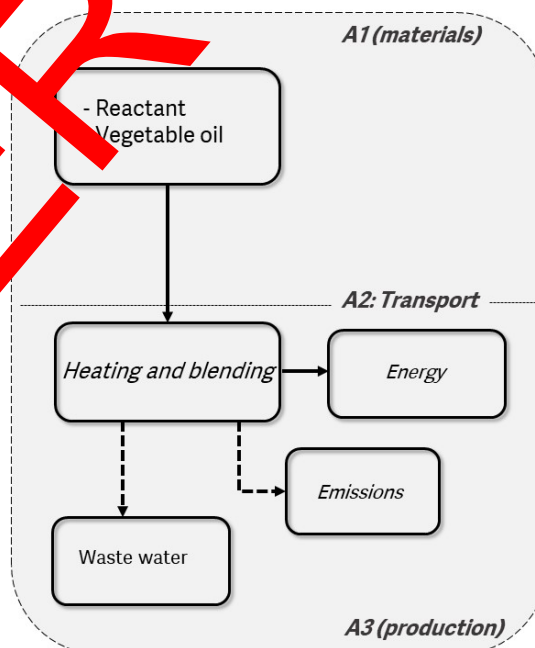
## SCOPE AND TYPE

Ecochain is used as a LCA software. Ecoinvent v3.4 and Nationale milieudatabase 3.0 are used for this analysis. The study covers phases A1-A3 (from materials use to the production).

PRODUCT STAGE			CONSTRUCTION			USE STAGE							END OF LIFE		BENEFITS AND		
			PROCESS										STAGE		LOADS BEYOND THE		
			STAGE												SYSTEM BOUNDARIES		
Raw material supply	Transport	Manufacturing	Transport gate to site	Assembly	Use	Maintenance	Repair	Replacement	Disposal	Operational energy use	Operational water use	De-construction	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	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	

X = Module assessed

MNA = Module not assessed



## REPRESENTATIVENESS

The data in this EPD is representative for Anova 1005 produced by Cargill B.V.

## ENVIRONMENTAL IMPACT per functional unit or declared unit

	UNIT	A1	A2	A3	A1-A3
ADPE	kg Sb-eq.	2.51E-5	1.99E-7	4.08E-5	6.61E-5
ADPF	MJ	1.02E+1	2.70E+0	8.33E-2	1.30E+1
GWP	kg CO2-eq.	1.20E+0	1.89E-1	4.60E-3	1.39E+0
ODP	kg CFC11-eq.	7.42E-8	2.95E-8	5.93E-10	1.04E-7
POCP	kg ethene-eq.	1.11E-3	1.77E-4	2.93E-7	1.28E-3
AP	kg SO2-eq.	4.41E-3	2.40E-3	3.29E-6	6.81E-3
EP	kg (PO4)3--eq.	2.59E-3	3.22E-4	4.49E-7	2.95E-3
Toxicity indicators (Dutch market)					
HTP	kg DCB-eq.	2.83E-1	7.90E-2	7.59E-4	3.63E-1
FAETP	kg DCB-eq.	2.77E-2	1.37E-3	4.45E-6	2.91E-2
MAETP	kg DCB-eq.	2.22E+1	5.68E+0	2.97E-1	2.80E+1
TETP	kg DCB-eq.	2.51E-3	3.03E-4	1.09E-6	3.44E-3
Environmental Cost Indicator (Dutch market)					
ECI	Euro	1.32E-1	3.02E-2	3.45E-4	1.63E-1

ADPE = Abiotic Depletion Potential for non-fossil resources  
 ADPF = Abiotic Depletion Potential for fossil resources  
 GWP = Global Warming Potential  
 ODP = Depletion potential of the stratospheric ozone layer  
 POCP = Formation potential of tropospheric ozone photochemical oxidants  
 AP = Acidification Potential of land and water  
 EP = Eutrophication Potential

HTP = Human Toxicity Potential  
 FAETP = Fresh water aquatic ecotoxicity potential  
 MAETP = Marine aquatic ecotoxicity potential  
 TETP = Terrestrial ecotoxicity potential  
 ECI = Environmental Cost Indicator

### RESOURCE USE per functional unit or declared unit

	UNIT	A1	A2	A3	A1-A3
PERE	MJ	2.43E-3	6.04E-2	1.81E-4	6.30E-2
PERM	MJ	0.00	0.00	0.00	0.00
PERT	MJ	2.43E-3	6.04E-2	1.81E-4	6.30E-2
PENRE	MJ	2.00E-1	2.84E+0	8.37E-2	3.12E+0
PENRM	MJ	0.00	0.00	0.00	0.00
PENRT	MJ	2.00E-1	2.84E+0	8.37E-2	3.12E+0
SM	kg	0.00	0.00	0.00	0.00
RSF	MJ	0.00	0.00	0.00	0.00
NRSF	MJ	0.00	0.00	0.00	0.00
FW	m3	1.75E-5	4.70E-4	2.88E-6	4.91E-4

PERE = Use of renewable energy excluding renewable primary energy resources

PERM = Use of renewable energy resources used as raw materials

PERT = Total use of renewable primary energy resources

PENRE = Use of non-renewable primary energy resources excluding non-renewable energy resources used as raw materials

PENRM = Use of non-renewable primary energy resources used as raw materials

PENRT = Total use of non-renewable primary energy resources

SM = Use of secondary materials

RSF = Use of renewable secondary fuels

NRSF = Use of non renewable secondary fuels

FW = Use of net fresh water

### OUTPUT FLOWS AND WASTE CATEGORIES per functional unit or declared unit

	UNIT	A1	A2	A3	A1-A3
HWD		6.54E-7	1.91E-5	1.42E-7	1.98E-5
NHWD	kg	6.45E-7	3.21E-2	2.73E-5	3.28E-2
RWD	kg	3.22E-7	1.70E-5	4.58E-8	1.74E-5
CRU	kg	0.00	0.00	0.00	0.00
MFR	kg	0.00	0.00	0.00	0.00
MER	kg	0.00	0.00	0.00	0.00
EEE	MJ	0.00	0.00	0.00	0.00
ETE	MJ	0.00	0.00	0.00	0.00

HWD = Hazardous Waste Disposed

NHWD = Non Hazardous Waste Disposed

RWD = Radioactive Waste Disposed

CRU = Components for reuse

MFR = Materials for recycling

MER = Materials for energy recovery

EEE = Exported Electrical Energy

ETE = Exported Thermal Energy

## CALCULATION RULES

### Data quality:

In this study the data flows have been modelled as realistic as possible within the practical feasibility of the LCA practitioner. The data quality is based on the principle that the primary data used for processes, occurring at the production site, must be of higher quality than background data of other processes. The processes used in the production of Anova 1005 are geographically representative, meaning that the production location of Anova 1005 lies within the region for which the relevant Ecoinvent environmental records have been selected. All environmental impacts and economic flows – from sources such as resources, energy, emissions and waste – were quantified and modelled in environmental effects. There is no presumption that relevant inputs or outputs have been omitted.

## SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION

The Anova products are manufactured through a combination of a base vegetable oil formulation and chemical modification to modify the chemical compatibilities and functionality for enhanced solubility and performance in bituminous products.

## DECLARATION OF SVHC

None of the substances contained in the product are listed in the "Candidate List of Substances of Very High Concern for authorisation", or they do not exceed the threshold with the European Chemicals Agency.

## REFERENCES

EN 15804+A1 and SBK Bepalingsmethode 3.0

## REMARKS

None

VERVALLEN