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PRODUCT DATA SHEET

Rev. N. 2 – Date 14/01/2025

Ecospray ECHD Polyol
Ecospray Isocyanate

DESCRIPTION

Ecospray ECHD Polyol / Ecospray Isocyanate is an ecomate® blown fully formulated spray foam system for the production of rigid foam with closed cells. The system is suitable for making continuous coatings with high thermal resistance. The suitability of the product, for the identified application, must be examined by the user before use. Applied in an appropriate way, rigid foams based on Ecospray ECHD Polyol and Ecospray Isocyanate can achieve a class E flammability rating according to EN ISO 13501-1.
It has CE marking on the basis of a Declaration of Performance (DoP No. CPR-DE-7538-002/24) pursuant to the European standard EN-14315-1:2031.

ENVIRONMENTAL IMPACT

NO Glogal Warming Potential (GWP)
NO Ozon Depletion Potential (ODP)
COMPLIANT with the requirements of Montreal and Kyoto Protocols, the Paris Agreement, the Kigali Amendment and all U.S. federal and state SNAP regulations.
Because it is not a persistent bioaccumulative toxin (PBT), is readily biodegradable, non-toxic to aquatic live and does not contain **PFAS** (per- and polyfluoroalkyl substances), **ecomate®** blowing agent has negligible impact on the environment.

COMPONENT PHYSICAL PROPERTIES

	Unit	Ecospray EC Polyol		Ecospray Isocyanate	
Viscosity	cP	350 ± 50	(@ 25°C)	200 ± 20	(@ 25 °C)
Specific Gravity	gr/dm^3	1,16	(@ 25°C)	1,23	(@ 25°C)

RECOMMENDED PROCESS CONDITIONS

	Unit	Ecospray EC Polyol	Ecospray Isocyanate
Mix Ratio	% Weight	100	110
	Volume	100	100
Chemical Temperature	° C	25-30	25-30
Mold / Substrate Temperature	° C	>5 - <40	
Substrate Humidity	Porous substrates	≤ 20%	
	Nonporous	Without condensation on substrate	

Substrates should be clean, free of oil, grease, residue, moisture, solvent, other contaminants and debris. The product has a good adhesion to concrete and bricks, wood, steel, aluminum and fiberglass. It is advisable to evaluate adhesion to surfaces on small samples before proceeding with the application. The thickness of each individual layer should be between 1 and 2.5 cm. To maintain adequate dimensional stability, it is not recommended to apply thicker layers.

TYPICAL REACTION CHARACTERISTICS

	Unit	Lab hand mix
Cream Time (CT)	s	3 - 4
Gel Time (GT)	s	6 - 7
Tack Free Time (TFT)	s	8 - 10
Free Rise Density	Kg/m^3	35.2 – 37.4

Components measured by weight and hand mixed at 22°C on a high speed mixer capable of 1.500 rpm. Above mentioned values are typical values measured under laboratory conditions. Reaction profile and density of the obtained foam depends on the actual conditions during the application process and on the application technique.

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TYPICAL POLYMER PROPERTIES

Item	Unit	Value @ index 100
Overall Applied Density	Kg/m^3	50 ± 5
Compressive Strength - ‖ Parallel to Rise	kPa	≥ 200
Close Cell Content	%	> 90

TYPICAL FIRE PROPERTIES

Test	Result
UNI EN 13501-1: 2019	Euroclass E, d0
All polyurethane products are organic material and are combustible under certain fire conditions. Ecospray™ EC contains fire retardant additives designed to cause foam to extinguish once the flame source is removed from the foam's surface.	

TYPICAL THERMAL INSULATION PROPERTIES

Typical Property	Unit	Result
Blowing Agent Gas Lambda	mW/m·K	λ = 10.7
Initial k-factor	W/m·K	0.019 – 0.022
Declared Thermal Conductivity – Fixed increment method	see performance chart	
Third-Party testing has shown that **ecomate®** blowing agent does not condense (begin to liquefy) at temperatures as low as -85°C.		

HANDLING AND STORAGE

	Units	Ecospray EC Polyol	Ecospray Isocyanate
Storage Temperature	° C	10 – 25	10 - 25
Shelf Life*	months	4	6

* Stored in the original sealed containers in a dry place at the recommended temperature.
Do not store in direct sunlight. Containers should be stored under cover and protected from contact with rain or snow. Water should not be able to accumulate where it can be drawn into the containers. Keep containers sealed until use. The Isocyanate component is sensitive to moisture and if unsealed, atmospheric moisture will cause crystallization.

SAFETY

When working with chemicals it is necessary to wear personal protective equipment. You must understand the hazards associated with handling all components, establish and follow safe work procedures, and comply with all regulations.

Respiratory Protection: When handling or spraying, use an air-purifying respirator.

Skin protection: use rubber gloves, remove immediately after contamination. Wear a clean overall that covers your entire body. Wash thoroughly with soap and water after work and before eating, drinking or smoking.

Eyes/Face: Wear safety glasses to avoid splashes and exposure to airborne particles.

Waste: The generation of waste should be avoided or minimized, if necessary, dispose of waste under controlled conditions in accordance with local laws and national regulations.

Please refer to the SDS for specific details.

STEWARDSHIP

FSI Incorporated and its subsidiaries are committed to stewardship and have a concern for, the health and safety for all individuals who come in contact with its products, as well as the environment. This philosophy is a foundation on which we assess information to appropriately protect individuals and preserve our environment. Success of stewardship rests with each and every individual involved in the cradle to grave life cycle of our products.

CUSTOMER RECOMMENDATIONS

FSI strongly encourages customers to review their manufacturing, health, safety, and environmental processes and applications while evaluating its products. This document contains information, data and products that are considered PROPRIETARY. Reproduction, storage, transmission, or redistribution in any form, by any means, electronic or otherwise, is strictly prohibited, without the prior, express, written permission of FSI.

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DECLARATION OF PERFORMANCE

No. CPR-DE-7538-002/24

1. Unique identification code of the product-type	**Ecospray ECHD Polyol – Ecospray Isocyanate** PU EN 14315-1-CCC4-CT10(10)-GT20(10)-TFT25(10)-FRB36(10)- CS(10/Y)200
2. Intended uses	ThIB - Thermal insulation of buildings - In-situ formed dispensed rigid polyurethane foam system (PU)
3. Manufacturer	**FSI Europe Srl** Via Roma, 50/52 – 46040 Casalromano (MN) – Italy info.eu@fsi.co - tel: +39 0522 1482194
4. Systems of AVCP	System AVCP 3 for the rest of the essential characteristics
5. Harmonized standards	EN 14315-1:2013 + NB-CPR/SG19-17/167r2 Issued: 24 January 2018
Notified Body	NB 0497 CSI SPA
6. Performances declared	

Essential characteristics	*Performances*	*Harmonized technical specification*
Reaction to fire	**Euroclass E, d0**	EN 13501-1: 2019
Durability of reaction to fire against aging/degradation	**Reaction to fire does not decrease with time**	EN 14315-1:2013
Compression strength (10% deformation)	≥ **200 kPa**	EN 826:2013
Durability of compression strength against aging/degradation	**Durability of compression strength does not decrease with time**	EN 14315-1:2013
Thermal resistance	**See performance chart**	EN 14315-1:2013
Durability of thermal resistance against aging/degradation	**See performance chart**	EN 14315-1:2013

PERFORMANCE CHART
RD – Declared Thermal Resistance (m^2K/W) depending on the the nominal thickness (dN) applied

dN ≤ 80 mm		
Type of facing: none or diffusion open		
Thickness mm	λD W/mK	RD m^2K/W
10	0,027	0,36
15	0,027	0,54
20	0,027	0,71
25	0,027	0,89
30	0,027	1,07
35	0,027	1,25
40	0,027	1,43
45	0,027	1,61
50	0,027	1,79
55	0,027	1,96
60	0,027	2,14
65	0,027	2,32
70	0,027	2,50
75	0,027	2,68

dN ≥ 80 ≤ 120 mm		
Type of facing: none or diffusion open		
Thickness mm	λD W/mK	RD m^2K/W
80	0,026	2,86
85	0,026	3,15
90	0,026	3,33
95	0,026	3,52
100	0,026	3,70
105	0,026	3,89
110	0,026	4,07
115	0,026	4,26

dN ≥ 120 mm		
Type of facing: none or diffusion open		
Thickness mm	λD W/mK	RD m^2K/W
120	0,025	4,44
125	0,025	4,81
130	0,025	5,00
135	0,025	5,19
140	0,025	5,38
145	0,025	5,58
150	0,025	5,77
155	0,025	5,96
160	0,025	6,15
165	0,025	6,35
170	0,025	6,54
175	0,025	6,73
180	0,025	6,92
185	0,025	7,12
190	0,025	7,31
195	0,025	7,50
200	0,025	7,69

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by::

Name and surname	Catellani Fabio
Role in the organization	Amministratore
Place	Casalromano
Date	14/10/2024
Signature	FSI Europe Srl

Allegato al DoP No. CPR-DE-7538-001/24

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EN-14315-1:2013

ThIB - Thermal insulation of buildings - In-situ formed dispensed rigid polyurethane foam system (PU)

Reazione al fuoco: *Reaction to fire:*	**Euroclass E, d0**
Conduttività termica: *Thermal conductivity:*	**vedi tabella prestazionale** ***see performance chart***
Resistenza a compressione: *Compressive strength:*	**>200**
Durabilità della reazione al fuoco all'invecchiamento / degradazione *Durability of reaction to fire against ageing / degradation:*	**La reazione a fuoco non varia nel tempo** ***Reaction to fire does not decrease with time***
Durabilità della resistenza alla compressione all'invecchiamento / degrado: *Durability of compressive strength against ageing / degradation:*	**La resistenza alla compressione non diminuisce con il tempo** ***Compressive strength does not decrease with time***
Durabilità della resistenza termica alll'invecchiamento/degradazione: *Durability of thermal resistance against ageing / degradation:*	**vedi tabella prestazionale** ***see performance chart***

PU EN 14315-1-CCC4-CT10(10)-GT20(10)-TFT25(10)-FRB36(10)--CS(10/Y)200

FSI Europe Srl provides this annex to the DoP showing a specimen of the CE marking.
Please consider that, for various reasons, the CE marking may be slightly different from that one stuck to the packaging.