

# ENVIRONMENTAL PRODUCT DECLARATION

as per /ISO 14025/ and /EN 15804/

Owner of the Declaration	FDT FlachdachTechnologie GmbH & Co. KG
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
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Valid to	25.02.2023

Rhepanol fk  
FDT FlachdachTechnologie GmbH & Co. KG

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## 1. General Information

<b>FDT FlachdachTechnologie GmbH &amp; Co. KG</b>	<b>Rhepanol fk</b>
<b>Programme holder</b> IBU - Institut Bauen und Umwelt e.V. Panoramastr. 1 10178 Berlin Germany	<b>Owner of the declaration</b> FDT FlachdachTechnologie GmbH & Co. KG Eisenbahnstraße 6-8 68199 Mannheim
<b>Declaration number</b> EPD-FDT-20180021-IAA1-EN	<b>Declared product / declared unit</b> 1 m <sup>2</sup> produced roofing membrane Rhepanol fk
<b>This declaration is based on the product category rules:</b> Plastic and elastomer roofing and sealing sheet systems, 07.2014 (PCR checked and approved by the SVR)	<b>Scope:</b> This Environmental Product Declaration refers to the specific Rhepanol fk 1.5 mm product manufactured by FDT Flachdach Technologie GmbH & Co. KG at its Hemsbach plant:
<b>Issue date</b> 26.02.2018	The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.
<b>Valid to</b> 25.02.2023	<b>Verification</b> The standard /EN 15804/ serves as the core PCR Independent verification of the declaration and data according to /ISO 14025:2010/ <input type="checkbox"/> internally <input checked="" type="checkbox"/> externally
 Prof. Dr.-Ing. Horst J. Bossenmayer (President of Institut Bauen und Umwelt e.V.)	 Matthias Schulz (Independent verifier appointed by SVR)
 Dipl. Ing. Hans Peters (Head of Board IBU)	

## 2. Product

### 2.1 Product description / Product definition

Rhepanol fk is a bitumen-compatible polyisobutylene (PIB) synthetic roofing membrane comprising PIB of high molecular weight, co-polymers and functional additives as well as a synthetic non-woven fleece on the underside. For the purpose of joining seams, Rhepanol fk contains either a self-adhesive sealing edge or a weldable seam for hot-air welding.

Rhepanol fk product according to /CPR/ with hEN: Directive (EU) No. 305/2011 /CPR/ applies for placing the product on the market in the EU/EFTA (with the exception of Switzerland).  
 The product has a Declaration of Performance "02 100 35" taking consideration of the /DIN EN 13956:2013-03/ and /DIN SPEC 20.000-201: 2015-08/, application type: DE/E1 PIB-BV-K-PV-1.5/ and CE marking. FPC certificate no. 1343-CPD-K06-0660.15.

Use is governed by the respective national regulations.

### 2.2 Application

Rhepanol fk is used for sealing purposes on both flat and inclined roofs in mechanically fastened or adhered layers and for pebble or used roofs with the exception of green roofs.

The manufacturer's installation instructions must be maintained during processing.

### 2.3 Technical Data

The data in the Declaration of Performance applies.

Other data is outlined below.

#### Construction data

Name	Value	Unit
Water vapour diffusion resistance value $\mu$ /DIN EN 1931/ (method B)	$\geq 260.000$	
Tensile strength /DIN EN 12311-2/ (method A)	$\geq 400$	N/50 mm
Tensile strain /DIN EN 12311-2/ (method A)	$\geq 50$	%
Seam peel resistance /DIN EN 12316-2/	$\geq 80$	N/50 mm
Seam shear resistance /DIN EN 12317-2/	$\geq 200$ (tearing outside the seam)	N/50 mm
Resistance to abrupt loads, rigid and/or flexible underlay /DIN EN 12691/	$\geq 700$ and $\geq 700$	mm
Resistance to static loads /DIN	$\geq 20$	kg

EN 12730/ (method A/B)		
Hail, rigid underlay / flexible underlay /DIN EN 13583/	$\geq 25 / \geq 35$	m/s
Tear resistance /DIN EN12310-2/	$\geq 150$	N
Dimensional stability after warm storage /DIN EN 1107-2/	$\leq 0,5$	%
Folding at low temperatures /DIN EN 495-5/	$\leq - 60$	°C
Performance when exposed to bitumen /DIN EN 1548/	passed	
Resistance to chemicals /DIN EN 1847/ (list in Annex C)	fulfilled	
UV radiation /DIN EN 1297/	Class 0 (5000 h)	h
Water tightness /DIN EN 1928/ (method B)	$\geq 400$	kPa

Rhepanol fk product according to /CPR/ with hEN:  
The product's performance values correspond with the Declaration of Performance "02 100 35" in terms of its essential properties in accordance with para. 2.1.

## 2.4 Delivery status

The nominal thickness of the sealing layer is 1.5 mm; its dimensions are 15 m x 1.05 m / x 0.65 m / x 0.52 m / x 0.35 m x 2.5 mm (incl. 1.0 mm synthetic non-woven fleece) and 10 m x 1.05 m x 2.5 mm (incl. 1.0 mm synthetic non-woven fleece).

## 2.5 Base materials / Ancillary materials

Rhepanol fk comprises (20-30)% high-molecular polyisobutylene, (6-12)% polyethylene, (2-5)% co-polymers, (30-50)% functional, mineralogical aggregates, (5-10)% titanium dioxide, (0.5-2.0)% carbon black and additives (a sterically-hindered amine as a light stabiliser and a phenol as an anti-ageing agent). Furthermore, Rhepanol fk also features a synthetic non-woven fleece and a sealing or welding edge.

No materials are used which are included in the /REACH/ list of candidates.

## 2.6 Manufacture

The Rhepanol fk compound is manufactured with the aid of a continuous kneader in which the individual raw materials are combined to form a homogeneous blend. The finished mixture is then compacted by an extruder, pelletized and shaped by a foil extruder, supplied with a synthetic non-woven fleece and sealing edge or weldable seam, cut to length and packed as rolls.

Production is subject to the quality management system introduced in accordance with /ISO 9001/ (certificate register 12 100 22279 TMS). The certification agency is TÜV Süd Management Service.

External quality monitoring and tests are performed by the State Material Testing Institute in Darmstadt, the /BBA/ (British Board of Agrément, Certificate No. 02/3922), /FM Approvals/ (Index No. 3014745F) and /INTRON Certificatie B.V./ (KOMO attest).

## 2.7 Environment and health during manufacturing

Over and beyond national guidelines, environmentally-friendly processes are used in the production of Rhepanol fk, e.g.

> a combination of wet separators and bio-filters are used for waste air achieving a higher degree of waste air purity

> waste heat for heating and hot water is used in the energy-efficient production processes (Energy Management System as per /DIN 50 001/) and

> the production waste incurred is redirected to the production circuit in the form of in-company recycling.

In order to ensure the health and safety of employees, workplace designs are continuously improved for the purpose of physical relief and optimised ergonomics and regular seminars are held on the topic of health and safety.

## 2.8 Product processing/Installation

Rhepanol fk is rolled out on the roof and joined using prefabricated sealing seams or hot-air welding.

The following must be maintained when cleaning Rhepanol fk seams with cleaning agents containing solvents:

- Avoid contact with the skin and eyes
- Wear gloves
- No smoking, no naked flames, avoid sparking
- Do not inhale vapours, only use outdoors or in well-ventilated rooms

No particular measures concerning health and safety are required when hot air welding Rhepanol fk with weldable seam.

Rhepanol fk is mechanically fastened, adhered or laid loosely and ballasted e.g. with gravel or paving, for example. More information on installation is outlined in the technical manual.

## 2.9 Packaging

Rhepanol fk is packed in reinforced cardboard boxes with wooden inserts to facilitate stacking. Each box contains six 15 m<sup>2</sup> rolls packed in individual PE bags.

All packaging materials are recyclable.

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## 2.10 Condition of use

On the basis of long-term experience, there are no relevant changes concerning material composition for the period of use of Rhepanol fk.

## 2.11 Environment and health during use

There are no references to possible material emissions during the use phase for Rhepanol fk. Accordingly, there are no indications of impacts on health and the Environment.

## 2.12 Reference service life

Under normal conditions and correct installation, empirical values indicate that Rhepanol fk has a life

cycle of 35 years and more; please refer to the attached /BBA Agrément Certificate No. 02/3922/.

## 2.13 Extraordinary effects

### Fire

Name	Value
Reaction to fire tests /EN11925-2/; /EN 13501-1/	Class E / passed
Performance in case of external fire exposure to roofs /ENV 1187/; /EN 13501-5/	B (t1) / passed

Note:

The B roof (t1) test results to /ENV 1187/ apply for the roof build-ups tested on behalf of FDT.

### Water

The materials used for Rhepanol fk are not water-soluble.

### Mechanical destruction

There are no known negative consequences for the environment in the event of unforeseen mechanical destruction of Rhepanol fk.

## 2.14 Re-use phase

Rhepanol fk is not re-used in its original form once the use phase has expired. When separated by type, Rhepanol fk can be directed to the "ROOFCOLLECT" collection system (recycling system for synthetic roofing and water-proofing membrane systems). This collection system manufactures a recyclate from the old roofing membranes which can be used or re-used for a variety of applications, e.g. for garden slabs or noise-insulating boards.

Thermal utilisation is also possible with the result that the energy contained in Rhepanol fk is released and used during incineration.

## 2.15 Disposal

After Rhepanol fk has fulfilled its function, it is directed towards thermal utilisation; please refer to 2.14. The roofing membranes can be allocated to number 170904 or 200139 in the /List of Wastes Ordinance/.

## 2.16 Further information

More information on Rhepanol fk in the form of brochures, data sheets, installation instructions and technical manuals can be found on the FDT website ([www.fdt.de](http://www.fdt.de)).

# 3. LCA: Calculation rules

## 3.1 Declared Unit

The declared unit is 1 m<sup>2</sup> Rhepanol fk 1.5 mm of roofing membrane produced.

### Declared unit

Name	Value	Unit
Declared unit	1	m <sup>2</sup>
Grammage	2.6	kg/m <sup>2</sup>
Type of sealing	Thermal welding or connection using seaming tape and primer	-
Conversion factor to 1 kg	0.384615385	-
Thickness	1,5	mm

## 3.2 System boundary

This Life Cycle Analysis addresses the life cycle stage of product manufacturing (cradle to gate). The product stage comprises Module A1 (Raw material supply), A2 (Transport), A3 (Production) in accordance with EN 15804 including the provision of all materials, products and energy. Waste indicated in A1-A3 only concerns that which is recycled internally.

## 3.3 Estimates and assumptions

Polybutylene was used as a conservative estimate for polyisobutylene as the exact data record for the polymer was not available. This is modelled as 100 % for raw material mixtures in which one component accounts for at least 95 %.

## 3.4 Cut-off criteria

All data from the operating data survey was taken into consideration in the analysis, i.e. all starting materials used according to the recipe, the thermal energy used as well as electricity. Transport costs were considered for all inputs and outputs.

## 3.5 Background data

The primary data was provided by FDT FlachdachTechnologie GmbH Co. KG. The relevant background data was taken from the /GaBi 8/ data base. The German power mix was applied.

## 3.6 Data quality

The representativity can be classified as very good. Manufacturing of the synthetic roofing membrane systems was modelled using primary data from FDT FlachdachTechnologie GmbH Co. KG. All other relevant background data records were taken from the /GaBi 8/ software data base and are less than 7 years old.

## 3.7 Period under review

The volumes of raw materials, energy, auxiliaries and consumables used are considered as average annual values in the Hemsbach manufacturing plant. FDT Flachdach Technologie GmbH & Co. KG has confirmed that the data continues to be valid in 2017 as there have been no essential changes made since data collation in 2017 in terms of:

- product composition,
- production-related energy consumption and energy sources used,
- direct process emissions, e.g. into air,
- types and volumes of waste and
- production technology.

The site of the production facility remains unchanged.

### 3.8 Allocation

Production waste which is re-used internally (the edge trims in production) is modelled as closed-loop recycling in Modules A1-A3.

### 3.9 Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to /EN 15804/ and the building context, respectively the product-specific characteristics of performance, are taken into account.

The used background database has to be mentioned. The used background database is /GaBi database version SP34/.

## 4. LCA: Scenarios and additional technical information

### Disposal

It can be assumed that in 80% of current roof refurbishments the roofing membranes remains on the roof and serves as an underlay for a new covering. Accordingly, in most cases disposal of the roofing membrane occurs later when the building is demolished and this subsequent use means that it is no longer within the system boundaries considered here. Under such conditions, disposal as municipal solid waste can therefore be assumed for 20% of waste (25% incineration, 75% landfilling). No scenarios are considered in this Life Cycle Analysis of synthetic roofing membrane systems.

### Packaging

The following packaging materials were declared for the analysis of 1 m<sup>2</sup> roofing membrane:

- 2g PE stretch foil
- 66g cardboard packaging box
- 29g wood packing box

## 5. LCA: Results

### DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED)

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 the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	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	MND	MND	MND	MND	MNR	MNR	MNR	MND	MND	MND	MND	MND	MND	MND

### RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 m<sup>2</sup> Dachbahn Rhepanol fk

Parameter	Unit	A1-A3
Global warming potential	[kg CO <sub>2</sub> -Eq.]	6.08E+0
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	2.08E-11
Acidification potential of land and water	[kg SO <sub>2</sub> -Eq.]	3.16E-2
Eutrophication potential	[kg (PO <sub>4</sub> ) <sup>3</sup> -Eq.]	1.82E-3
Formation potential of tropospheric ozone photochemical oxidants	[kg ethene-Eq.]	3.28E-3
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	4.81E-6
Abiotic depletion potential for fossil resources	[MJ]	1.29E+2

### RESULTS OF THE LCA - RESOURCE USE: 1 m<sup>2</sup> Dachbahn Rhepanol fk

Parameter	Unit	A1-A3
Renewable primary energy as energy carrier	[MJ]	1.74E+1
Renewable primary energy resources as material utilization	[MJ]	1.13E+0
Total use of renewable primary energy resources	[MJ]	1.86E+1
Non-renewable primary energy as energy carrier	[MJ]	9.75E+1
Non-renewable primary energy as material utilization	[MJ]	4.03E+1
Total use of non-renewable primary energy resources	[MJ]	1.38E+2
Use of secondary material	[kg]	0.00E+0
Use of renewable secondary fuels	[MJ]	0.00E+0
Use of non-renewable secondary fuels	[MJ]	0.00E+0
Use of net fresh water	[m <sup>3</sup> ]	1.45E-1

### RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES:

#### 1 m<sup>2</sup> Dachbahn Rhepanol fk

Parameter	Unit	A1-A3
Hazardous waste disposed	[kg]	1.29E-7
Non-hazardous waste disposed	[kg]	6.34E-2
Radioactive waste disposed	[kg]	3.32E-3
Components for re-use	[kg]	0.00E+0
Materials for recycling	[kg]	0.00E+0
Materials for energy recovery	[kg]	0.00E+0
Exported electrical energy	[MJ]	0.00E+0
Exported thermal energy	[MJ]	0.00E+0

## 6. LCA: Interpretation

### Indicators of the Life Cycle Inventory Analysis

The primary energy used for 1 m<sup>2</sup> average roofing membrane comprises 138 MJ/m<sup>2</sup> from non-renewable primary energy sources (**PENRT**). Primary energy use decreased by 9 % compared to the results of 2013. PIB polymer manufacture has a relevant influence (41%). A certain influence is accounted for by the manufacture of PES non-woven fleece (15%) and the electricity required for production (14%). Approx. 18.6 MJ/m<sup>2</sup> are procured from renewable primary energy (**PERT**), which is practically double the value of 2013, of which the electricity required has a relevant influence (45%), while the manufacture of packaging materials (19%) and PES non-woven fleece (11%) have a certain influence.

### Waste

Radioactive waste (**RWD**) is attributable to electricity production with 53% originating from the electricity used in the primary system. 12% is accounted for by the main PIB polymer and 11% by the pigments. 29% of non-hazardous waste for disposal (**NHWD**) is incurred by electricity, 22% by PES fleece, 18% by pigments and 14% by PIB. 32% of hazardous waste for disposal (**HWD**) is accounted for by diesel in the transport process, while 24% is attributable to packaging material and 10% comes from the power mix.

### Indicators of estimated impacts



In the dominance analysis for Rhepanol fk 1.5 mm, it is apparent that PIB, the pigments or the power mix used in production represent the main drivers.

32% of the global warming potential (**GWP**) from the manufacture of Rhepanol fk 1.5 mm is attributable to the main PIB polymer, 25% comes from the power mix and 17% from the PES non-woven fleece. A relevant influence on the ozone depletion potential (**ODP**) is incurred by the pigments (29%) and the electricity used in the primary system (28%). PIB contributes 28% to the ODP. The acidification potential (**AP**) is caused by PIB (27%), the power mix (19%), pigments (17%) and PES non-woven fleece (11%). The eutrophication potential (**EP**) is caused by non-woven fabric adhesive

(23%), the power mix (20%), PIB (19%) and pigments (13%). The photochemical ozone creation potential (**POCP**) is primarily caused by NMVOC emissions, but also nitrogen oxide, methane, sulphuric oxide and carbon monoxide. The manufacture of PIB accounts for a significant share (53%), while the manufacture of pigments has a relevant influence accounting for 25%. In an analysis of the abiotic depletion of fossil resources (**ADP fossil**), manufacturing dominance is attributable to PIB (42%), PES non-woven fleece (15%) and electricity (11%). Other polymers have an influence accounting for 15%. Pigments (40%) and the power mix (31%) contribute to the abiotic depletion of non-fossil resources (**ADP Elementary**).

## 7. Requisite evidence

No evidence is required.

## 8. References

### **/IBU 2016/**

IBU (2016): General Programme Instructions for the Preparation of EPDs at the Institut Bauen und Umwelt e.V., Version 1.1 Institut Bauen und Umwelt e.V., Berlin.  
[www.ibu-epd.de](http://www.ibu-epd.de)

### **/ISO 14025/**

DIN EN /ISO 14025:2011-10/, Environmental labels and declarations — Type III environmental declarations — Principles and procedures

### **/EN 15804/**

/EN 15804:2012-04+A1 2013/, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

### **PCR 2014, Part B**

PCR instructions for construction -related products and services in the construction products group pertaining to synthetic and elastomer roofing membrane systems, version 1.3, 07-2014

### **IBU 2017, Part A**

PCR – Part A: Calculation rules for the LCA and requirements on the Background Report, Version 1.6, Institut Bauen und Umwelt e.V., [www.bau-umwelt.com](http://www.bau-umwelt.com), 2017

**AVV:** 2001-12, Ordinance on the List of Wastes dated 10 December 2001 (BGBl. I p. 3379), last amended by Article 2 of the Directive dated 17 July 2017 (BGBl. I, p. 2644)

**CPR (Construction Products Regulation):** Directive (EU) No. 305/2011 of the European Parliament and Council dated 9 March 2011 on specifying harmonised conditions for marketing building products (Construction Products Regulation)

**DIN EN 495-5:**2013-08, Flexible sheets for waterproofing – Determination of foldability at low temperature – Part 5: Plastic and rubber sheets for roof waterproofing

**DIN EN 1107-2:** 2001-04, Flexible sheets for waterproofing – Determination of dimensional stability – Part 2: Plastic and rubber sheets for roof waterproofing

**DIN CEN TS 1187:** 2012-03, Test methods for external fire exposure to roofs

**SN ENV 1187:**2005-12, Test methods for external fire exposure to roofs

**DIN EN 1297:** 2004-12, Flexible sheets for waterproofing – Bitumen, plastic and rubber sheets for roof waterproofing – Method of artificial ageing by long-term exposure to the combination of UV radiation, elevated temperature and water

**DIN EN 1548:** 2007-11, Flexible sheets for waterproofing – Plastic and rubber sheets for roof waterproofing – Method for exposure to bitumen

**DIN EN 1847:** 2010-4, Flexible sheets for waterproofing – Plastics and rubber sheets for roof waterproofing – Methods for exposure to liquid chemicals, including water

**DIN EN 1928:** 2000-07, Flexible sheets for waterproofing – Bitumen, plastic and rubber sheets for roof waterproofing – Determination of water vapour transmission properties

**EN 1931:**2001-03, Flexible sheets for waterproofing – Bitumen, plastic and rubber sheets for roof waterproofing – Determination of water vapour transmission properties

**ISO 9001:**2015-11, Quality management systems – Requirements

**DIN EN ISO 11925-2:**2011-02, Reaction to fire tests – Ignitability of products subjected to direct impingement of flame

**DIN EN 12310-2:**2000-12, Flexible sheets for waterproofing – Determination of resistance to tearing

– Part 2: Plastic and rubber sheets for roof waterproofing

**DIN EN 12311-2:**2013-11, Flexible sheets for waterproofing – Determination of tensile properties – Part 2: Plastic and rubber sheets for roof waterproofing

**DIN EN 12316-2:**2013-08, Flexible sheets for waterproofing – Determination of peel resistance of joints – Part 2: Plastic and rubber sheets for roof waterproofing

**DIN EN 12317-2:**2010-12, Flexible sheets for waterproofing – Determination of shear resistance of joints – Part 2: Plastic and rubber sheets for roof waterproofing

**DIN EN 12691:**2006-06, Flexible sheets for waterproofing – Bitumen, plastic and rubber sheets for roof waterproofing – Determination of resistance to impact

**DIN EN 12703:**2016-10, Adhesives for paper and board, packaging and disposable sanitary products – Determination of low temperature flexibility or cold crack temperature

**DIN EN 13501-1:**2010-01, Classification of construction products and methods by reaction to fire – Part 1: Classification with the results of tests on reaction to fire of construction products

**DIN EN 13501-5:**2016-12, Classification of construction products and methods by reaction to fire – Part 5: Classification using data from external fire exposure to roofs tests

**DIN EN 13583:**2012-10, Flexible sheets for waterproofing – Bitumen, plastic and rubber sheets for roof waterproofing – Determination of hail resistance

**DIN EN 13948:**2008-01, Flexible sheets for waterproofing – Bitumen, plastic and rubber sheets for roof waterproofing – Determination of resistance to root penetration

**DIN EN 13956:**2013-03, Flexible sheets for waterproofing – Plastic and rubber sheets for roof waterproofing – Definitions and characteristics

**DIN EN ISO 14025:**2009-11, Environmental labels and declarations – Type III environmental declarations – Principles and procedures

**DIN EN ISO 50001:**2011-12, Energy management systems – Requirements with guidance for use

**EN 15804:**2012-04, Sustainability of construction works - Environmental product declarations – Core rules for the product category of construction products

**DIN V 20000-201:**2015-08, Use of construction products in construction works – Part 201: Adaptation standard for flexible sheets for waterproofing according to European standards for use as waterproofing of roofs

**DIN V 20000-202:**2016-03, Use of construction products in construction works – Part 202: Adaptation standard for flexible sheets for waterproofing according to European standards for use as waterproofing

**FPC certificate:** EC certificate of conformity of factory production control (FPC)

**GaBi 8:** thinkstep AG; GaBi 8: software and data base for comprehensive analysis; copyright, TM Stuttgart, Echterdingen, 1992-2018

**GaBi data base, version SP34:** documentation of GaBi 8 data sets in the Data Base for Comprehensive Analysis; copyright, TM Stuttgart, Echterdingen, 1992-2018

**REACH:** Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency



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