

# TECHNISCHE INFORMATION HEIZUNGSRÖHR



Kunststofftechnik GmbH  
Ing. Pesendorfer Str. 31  
A-4540 Bad Hall  
Tel. ++43/7258 790-0  
Fax ++43/7258 3863  
**AUSTRIA**  
[www.agru.at](http://www.agru.at)

**HEIZUNGSRÖHR**

# Lieferprogramm:

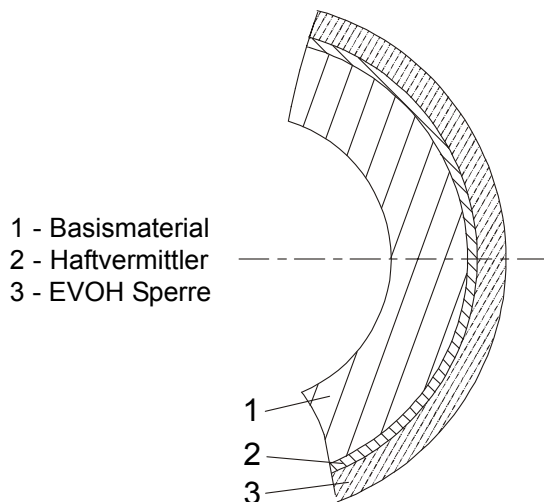
**Rohr:** da 10 - 25mm

**Material:** PPR - DIN 8077 - DIN 8078  
PE-RT - DIN16833 - DIN16834

**Variationen:** 3-Schicht Rohr  
5-Schicht Rohr für Innenschweißung  
5-Schicht Rohr für Außenschweißung

## 3-Schicht Rohr:

kostengünstige Variante für sauerstoffdichte Ausführung  
außenliegende EVOH Sperre



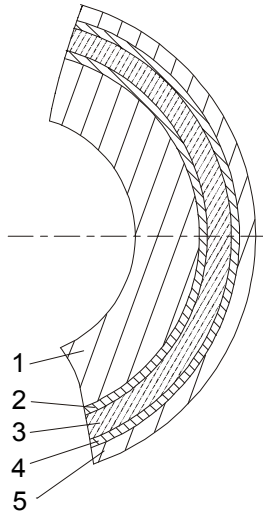
## 5-Schicht Rohr für Innenschweißung:

die Hauptschicht des Basismaterials befindet sich an der Innenwandung des Rohres.

Vorteile:

- direkte innen- Muffenschweißung ohne Vorbehandlung der Rohre möglich
- dauerhafter mechanischer Schutz der EVOH Sperre.

- 1 - Basismaterial
- 2 - Haftvermittler
- 3 - EVOH Sperre
- 4 - Haftvermittler
- 5 - Basismaterial



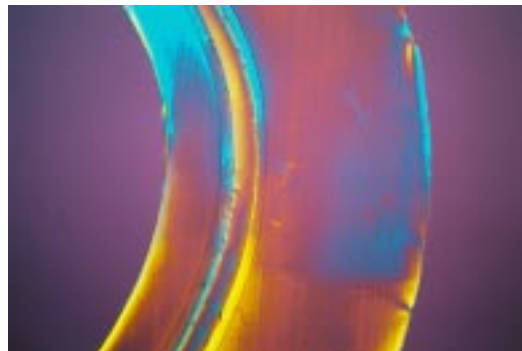
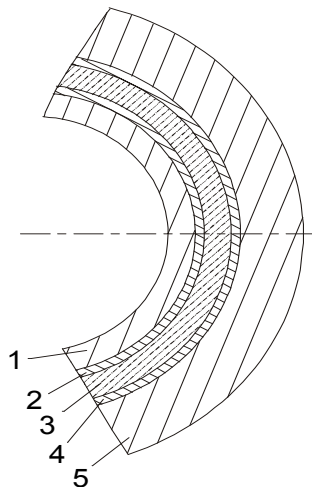
## 5-Schicht Rohr für Außenschweißung:

die Hauptschicht des Basismaterials befindet sich an der Außenwandung des Rohres.

Vorteile:

- direkte Muffenschweißung ohne Abschälen der Rohroberfläche (Zeitersparnis)
- keine Reduktion der Barriereigenschaften durch Feuchtigkeit (Medium) .

- 1 - Basismaterial
- 2 - Haftvermittler
- 3 - EVOH Sperre
- 4 - Haftvermittler
- 5 - Basismaterial



# DOWLEX\* 2344E

## Polyethylene Resin

Melt Index	0.7
Density	0.933

DOWLEX\* 2344E Polyethylene Resin is an ethylene-octene copolymer, produced by the proprietary solution process of The Dow Chemical Company. It has a unique molecular structure with a controlled side chain distribution, which provides excellent stress crack resistance properties combined with very good long term hydrostatic strength.

### Processability:

Typical extrusion temperatures for processing of DOWLEX

2344E Polyethylene Resin range from 190 to 230° C. The use of a reverse temperature profile may be beneficial to certain types of processing equipment. For further information, see our extrusion guideline.

### Note:

DOWLEX 2344E Polyethylene Resin should comply with FDA regulation 177.1520 when used unmodified and processed according to good manufacturing practices. Please contact your nearest Dow office to obtain a detailed

EU/FDA food contact compliance statement. The purchaser remains responsible for determining whether the use complies with all relevant regulations.

### Applications:

Pipes for hot and cold water systems, e.g.:

- floor heating
- wall heating/cooling
- ceiling cooling
- radiator connections
- warm / cold drinking water distribution
- heat recovery systems
- solar panels

Physical Properties <sup>(1)</sup>	Unit	Test Method	Values
Melt Index, 190° C/2.16 kg	g/10 min	ISO 1133	0.7
Melt Index, 190° C/5.0 kg	g/10 min	ISO 1133	2.2
Density	g/cm <sup>3</sup>	ISO 1183	0.933
Vicat Softening Point	°C	ISO 306 (Method A)	122
Thermal Conductivity	W/(mK) at 60 °C	DIN 52612 – 1	0.4
Thermal Exp. Coefficient	10 <sup>-4</sup> /K	DIN 53752 A (20° C to 70° C)	1.95
Mechanical Properties <sup>(1,2)</sup>	Unit	Test Method	Values
Hardness, Shore D		ISO 868	53
Tensile Yield <sup>(3)</sup>	MPa	ISO-527	16.5
Tensile Yield Elongation <sup>(3)</sup>	%	ISO-527	13
Ultimate Tensile <sup>(3)</sup>	MPa	ISO-527	34
Ultimate Elongation <sup>(3)</sup>	%	ISO-527	>800
Flexural Modulus	MPa	ISO-178	550
Elastic Modulus	MPa	ISO-527	580
Izod Impact	KJ/m <sup>2</sup> at 23° C	ISO 180	no break
	KJ/m <sup>2</sup> at -40° C	ISO 180	8
ESCR	h	ASTM D 1693 -B 10 % ANTAROX CO 630	>8760 (0 failures)
	h	50 % antifreeze (PEG) <sup>(4)</sup>	>8760 (0 failures)
	h	10 % corrosion inhibitor <sup>(4)</sup>	>8760 (0 failures)

(1) Typical values, not to be construed as specification limits.

(2) Compression moulded samples (2 mm thick).

(3) Crosshead speed 50 mm/min.

(4) Test according to ASTM 1693 with the listed test medium.

-See "Handling Considerations" attached

\*Trademark of The Dow Chemical Company

†Dow Plastics is a business group of The Dow Chemical Company and its subsidiaries.

Published 0400  
CH 254-104-E-0400

## Safety and Handling Considerations

### Safety Considerations

Material Safety Data Sheets for Dow polyethylene resins are available from the Dow sales offices to help customers further satisfy their own safe handling and disposal needs. Such information should be requested from the supplier(s) of any product(s) prior to working with it (them). The comments that follow are pertinent only to the resins discussed, as supplied. Various additives and processing aids used in fabrication will have their own safe use profile and must be investigated separately.

### Health and Safety

Polyethylene resins are among the most inert commercial polymers and constitute no hazard in normal handling. For "Regulated" uses, such as food contact, your Dow sales representative can obtain compliance letters for specific resins. Normal good housekeeping practice should be followed. Workers should be protected from possibility of skin or eye contact with molten polymer. Safety glasses are suggested as a minimal precaution to prevent possible mechanical or thermal injury to the eyes. Fabrication areas should be ventilated to carry away fumes or vapours; workers should be assured of supply of fresh air. Workplace environments should be kept clean and free of dust.

### Combustibility

Polyethylene resins will burn when supplied with adequate amounts of heat and oxygen.

They should be handled and stored away from contact with direct flames and/or other ignition sources. In burning, polyethylene resins contribute high heat and may generate a dense black smoke. Fires can be extinguished by conventional means with water fog preferred. In enclosed areas, fire fighters should be provided with self-contained breathing apparatus.

### Recycling

Polyethylene resins can be recycled. Production rejects and/or conversion waste should preferably be recycled instead of being disposed of.

### Disposal

In disposal of any wastes, be certain all applicable national and local regulations are met. If these regulations are met, the following is applicable for the polyethylene resins as supplied. If fillers, processing aids or other materials have been added, their possible influence on handling and disposal should be judged separately. Polyethylene resins can be disposed of either by incineration or landfill. With properly controlled industrial, commercial or municipal incineration, particulate or gaseous discharge into the air can be maintained within allowable levels. Thermoplastic products, such as polyethylene resins, have high heat values and should be incinerated only in units designed to handle high heats of combustion.

In landfill, polyethylene resins are inert, do not degrade quickly, form a strong and

permanent soil base, and evolve virtually no gases or leachates known to pollute water resources.

### Product Stewardship

The Dow Chemical Company has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our Product Stewardship philosophy by which we assess the health and environmental information on our products and take appropriate steps to protect employee and public health, and our environment. Our Product Stewardship programme rests with each and every individual involved with Dow products – from the initial concept and research, to manufacture, use, sale and disposal of each product.

### Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to help ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel will assist customers in dealing with ecological and product safety considerations. Dow product literature, including MSD sheets, should be consulted prior to use of Dow products. Your Dow Plastics sales representative can arrange the proper contacts.

NOTICE: No freedom from any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other governmental enactments. Dow assumes no obligation or liability for the information in this document. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

NOTICE REGARDING MEDICAL APPLICATION RESTRICTIONS: The Polyolefins business of The Dow Chemical Company does not recommend any Dow product or sample product for use: (A) in any commercial or developmental application which is intended for contact with human internal body fluids or body tissues, regardless of the length of time involved; (B) in any cardiac prosthetic device application, regardless of the length of time involved, including, without limitation, pacemaker leads and devices, artificial hearts, heart valves, intra-aortic balloons and control systems, and ventricular bypass assisted devices; (C) as a critical component in any medical device that supports or sustains human life; and (D) specifically by pregnant women or in any applications designed specifically to promote or interfere with human reproduction.

(May 2000)

