

**Polyurethane Chemicals &
Products in Europe, Middle
East and Africa (EMEA)
VOLUME 4 – END-USE MARKETS**

**© IAL CONSULTANTS
JUNE 2010**

CP House, 97-107 Uxbridge Road, Ealing, London W5 5TL
Tel: +44 (0) 20 8832 7780 Fax: +44 (0) 20 8566 4931
Email: ial@brg.co.uk
Web site: www.ialconsultants.com

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form, or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior permission of the copyright owner.

NOTE

The information given in this report has been compiled from published sources and interpreted from fieldwork based on informed opinions. Whilst every care has been taken in the preparation of the report, there may have been some errors in the information obtained. Although it is impossible to verify every single detail by cross checking, we believe the general picture provided is reasonably accurate and comprehensive.

Many IAL reports contain an overview of selected company financial information and capabilities based on published sources where available. Although the companies represented are believed to be the major suppliers the profiles are meant to be indicative rather than definitive.

It is fundamental to the philosophy of IAL Consultants to constantly seek to extend and improve our service to clients. In pursuit of these aims, we shall be pleased to consider all requests for regular or periodic updating of all or any part of the information contained in this report, or for extensions in coverage in terms of product areas, market sectors and/or geographic regions.

We are, of course, always happy to discuss with any subscriber the possibility of undertaking further work, whether arising out of this report or in different business areas.

MORE INFORMATION ON IAL CONSULTANTS

At the end of this report you will find a list of our latest published reports. Should you require more information on either our published reports or our private client services, please contact us at the address given.

Full details on all IAL Consultants published studies (including full tables of contents and tables of tables) and ad-hoc research services can be found on our website :

www.ialconsultants.com

CONTENTS

1. INTRODUCTION.....	1
1.1 SCOPE OF THE STUDY	2
1.2 METHODOLOGY.....	3
1.3 PRODUCTS AND END-USES	3
1.4 UNITS OF VOLUME.....	4
1.5 FORECASTS	4
2. AUTOMOTIVE	5
2.1 INDUSTRY OVERVIEW	5
2.1.1 <i>Passenger Car Production in Europe, Middle East and Africa</i>	5
2.2 COMMERCIAL VEHICLE PRODUCTION	18
2.2.1 <i>Light Commercial</i>	18
2.2.2 <i>Heavy Goods</i>	19
2.2.3 <i>Buses and Coaches</i>	20
2.3 MAJOR USES FOR POLYURETHANES IN THE EUROPEAN AUTOMOTIVE INDUSTRY	21
2.3.1 <i>Plastics Consumption in the Automotive Industry</i>	21
2.3.2 <i>Total EMEA Production of Polyurethane Used in the Automotive Industry by End-use</i>	23
2.3.3 <i>Seating</i>	24
2.3.4 <i>Instrument Panels</i>	28
2.3.5 <i>Steering Wheels</i>	28
2.3.6 <i>Carpet Backing/NVH</i>	29
2.3.7 <i>Exterior Trim</i>	31
2.3.8 <i>Window Encapsulation</i>	31
2.3.9 <i>Other Automotive Interior</i>	31
2.3.10 <i>Coatings</i>	32
2.3.11 <i>Direct Glazing</i>	36
2.4 MARKET TRENDS & INFLUENCES	37
2.4.1 <i>Automotive Production</i>	37
2.4.2 <i>Seating</i>	38
2.4.3 <i>Steering Wheels</i>	39
2.4.4 <i>Exterior Trim</i>	39
2.4.5 <i>Window Encapsulation</i>	40
2.4.6 <i>Coatings, Adhesives & Sealants</i>	40
2.4.7 <i>Sealants and Adhesives</i>	42
3. BUILDING & CONSTRUCTION.....	45
3.1 INDUSTRY OVERVIEW	45
3.1.1 <i>Construction Sector Output - Europe</i>	45
3.1.2 <i>New Construction Output - Europe</i>	46
3.1.3 <i>New Residential Construction Output - Europe</i>	48
3.1.4 <i>New Non-Residential Construction Output - Europe</i>	49
3.1.5 <i>New Civil Engineering Construction - Europe</i>	50
3.1.6 <i>Construction Sector Output – Middle East & Africa</i>	50
3.2 MAJOR USES FOR POLYURETHANES IN THE EUROPEAN CONSTRUCTION INDUSTRY	58
3.2.1 <i>Introduction</i>	58
3.2.2 <i>Total EMEA Production of Polyurethane Used in the Construction Industry by End-use</i>	59
3.2.3 <i>Sandwich Panels</i>	59
3.2.4 <i>Spray Foam</i>	62
3.2.5 <i>One Component Foam (OCF)</i>	65
3.2.6 <i>Pipe-in-Pipe/Pre-insulated Pipe</i>	67
3.2.7 <i>Slabstock</i>	68
3.2.8 <i>Coatings</i>	68
<i>Architectural</i>	68

Maintenance	68
Roof, Tank & Deck	68
3.2.9 Adhesives & Sealants	70
3.2.10 Insulated Glazing Sealants	71
3.2.11 General Construction Adhesives	72
3.2.12 General Construction Sealants	73
3.3 MARKET TRENDS & INFLUENCES	74
3.3.1 Sandwich Panels	74
Western Europe	74
Eastern Europe.....	76
Middle East & Africa	77
3.3.2 Sprayed Foam	77
3.3.3 One Component Foam (OCF).....	81
3.3.4 Pipe-in-pipe/Pre-insulated Pipe.....	86
3.3.5 Coatings, Adhesives & Sealants.....	87
Western Europe	87
Eastern Europe.....	90
Middle East.....	92
Africa.....	94
4. FOOTWEAR.....	97
4.1 INDUSTRY OVERVIEW	97
4.1.1 Global Footwear Production	97
4.2 MAJOR USES FOR POLYURETHANES WITHIN THE FOOTWEAR INDUSTRY IN EMEA	99
4.2.1 Microcellular Elastomer Soling	102
4.2.2 TPU Footwear Components.....	103
4.2.3 Footwear Adhesives	104
4.3 MARKET TRENDS & INFLUENCES	105
4.3.1 Elastomers.....	105
Western Europe	105
Eastern Europe.....	107
Middle East and Africa	107
4.3.2 Coatings & Adhesives	108
Western Europe	108
Middle East and Africa.....	108
5. FURNITURE & BEDDING	109
5.1 INDUSTRY OVERVIEW	109
5.1.1 Introduction.....	109
5.1.2 The Furniture Industry in EMEA	109
5.2 MAJOR USES OF POLYURETHANES IN THE EUROPEAN FURNITURE & BEDDING INDUSTRY	112
5.2.1 Introduction.....	112
5.2.2 Slabstock	112
5.2.3 Moulded Foam.....	117
5.2.4 Integral Skin Foam.....	118
5.3 MARKET TRENDS AND INFLUENCES	119
5.3.1 Western Europe.....	119
5.3.2 Eastern Europe	120
5.3.3 Middle East & Africa	120
6. REFRIGERATION	123
6.1 INDUSTRY OVERVIEW	123
6.1.1 Introduction.....	123
6.1.2 European Refrigeration Industry	123
6.1.3 Eastern Europe, Middle East and Africa	125
6.2 MAJOR APPLICATIONS FOR PU IN THE REFRIGERATION INDUSTRY.....	125
6.2.1 Total PU Usage by Application	125
6.2.2 Refrigerators & Freezers	126
6.2.3 Cold Storage	127
6.2.4 Refrigerated Transport.....	127

6.3	MARKET TRENDS AND INFLUENCES	127
6.3.1	<i>Refrigerators/Freezers</i>	127

TABLE OF TABLES

1. INTRODUCTION.....	1
1.1 SCOPE OF THE STUDY	2
1.2 METHODOLOGY.....	3
1.3 PRODUCTS AND END-USES	3
1.4 UNITS OF VOLUME.....	4
1.5 FORECASTS	4
2. AUTOMOTIVE	5
2.1 INDUSTRY OVERVIEW	5
Production of Passenger Cars in EMEA by Country, 2008 – 2009 (Units)	17
2.2 COMMERCIAL VEHICLE PRODUCTION	18
EMEA Production of Light Commercial Vehicles by Region, 2008–2009 (Units)	18
EMEA Production of Heavy Vehicles by Country, 2008 – 2009 (Units)	19
EMEA Production of Buses by Country, 2008–2009 (Units).....	20
2.3 MAJOR USES FOR POLYURETHANES IN THE EUROPEAN AUTOMOTIVE INDUSTRY	21
Major Materials Used in Car Manufacture (kg).....	22
Total EMEA Production of Polyurethane used in the Automotive Sector by End-use, 2009-2014 (Tonnes).....	23
Volume per Seat Component.....	24
Patterns of TDI/MDI Usage in Moulded Automotive Seat Foam Europe, Middle East & Africa-2009 (%).....	25
Total EMEA Production of PU Moulded Foam for Passenger Car Seating by Country, 2009-2014 (Tonnes)	26
Total EMEA Production of PU Moulded Foam for Commercial Vehicle Seating by Country, 2009-2014 (Tonnes) ..	27
Total EMEA Production of PU Moulded Foam for Carpet Backing/NVH Insulation by Country, 2009-2014 (Tonnes).....	30
Total EMEA Production of PU Automotive OEM Coatings by Country, 2009-2014 (Tonnes).....	34
Total EMEA Production of PU Automotive Refinish Coatings by Country, 2009-2014 (Tonnes)	35
Total EMEA Production of PU Auto Direct Glazing Sealants by Country, 2009-2014 (Tonnes).....	36
2.4 MARKET TRENDS & INFLUENCES	37
Maximum VOC Content Limit Values for Vehicle Refinishing Products (g/l).....	42
3. BUILDING & CONSTRUCTION.....	45
3.1 INDUSTRY OVERVIEW	45
Total Construction Sector Output in Europe by Type, 2008-2011 (€Billion).....	45
New Construction Output in Europe by Type, 2009 (€Billion).....	46
Forecast New Construction Volume by Country, 2008-2011 (€Billion)	47
New Residential Building Construction Output, 2008-2011 (€billion)	48
New Non-Residential Building Construction Output, 2008 – 2011 (€billion).....	49
New Civil Engineering Construction, 2008 – 2011 (€Billion)	50
Construction area in Israel 2007-2009 (m ² ‘000).....	52
Non-Residential Construction by Area in Israel, 2007-2009 (m ² ‘000).....	52
New Buildings and Additions in the Turkish Construction Industry, 2006-2009* (units).....	55
Completed or Partially Completed Buildings in Turkey, 2006-2009* (units)	55
3.2 MAJOR USES FOR POLYURETHANES IN THE EUROPEAN CONSTRUCTION INDUSTRY	58
Total EMEA Production of Polyurethane used in the Construction Sector by Product Type, 2009-2014 (Tonnes).....	59
Total EMEA Production of PU Foam for Sandwich Panels by Country, 2009-2014 (Tonnes).....	61
Total EMEA Production of PU Sprayed Foam Used for Building & Construction by Country, 2009-2014 (Tonnes).....	64
Total EMEA Production of PU One Component Foam (OCF) by Country, 2009-2014 (Tonnes)	66
Total EMEA Production of PU Foam for Pipe-in-Pipe Insulation by Country, 2009-2014 (Tonnes)	67
Total EMEA Production of PU Coatings for Construction Applications by Country, 2009-2014 (Tonnes)	69
Total EMEA Production of PU Sealants for Insulated Glazing Applications by Country, 2009-2014 (Tonnes).....	71
Total EMEA Production of PU Adhesives for General Construction Applications by Country, 2009-2014 (Tonnes).....	72
Total EMEA Production of PU Sealants for General Construction Applications by Country, 2009-2014 (Tonnes)....	73
3.3 MARKET TRENDS & INFLUENCES	74
Estimated Demand for Polyurethane OCF, Europe, Middle East & Africa, 2009 (No. of Cans)	83
4. FOOTWEAR.....	97

4.1	INDUSTRY OVERVIEW	97
	Global Footwear Production by Region, 2005-2015 (Million Pairs)	97
	World Footwear Soling Material Production by Regions, 2005-2015 (Ktonnes)	98
	World Polyurethane Soling Demand by Regions, 2005-2015 (Ktonnes).....	98
4.2	MAJOR USES FOR POLYURETHANES WITHIN THE FOOTWEAR INDUSTRY IN EMEA	99
	Key Applications for Global Use of PU in Footwear 2005 & 2015 (Kt).....	100
	Total EMEA Production of PU Microcellular Systems for Footwear, 2009-2014 (Tonnes)	102
	Total EMEA Production of PU Footwear Adhesives, 2009-2014 (Tonnes)	104
4.3	MARKET TRENDS & INFLUENCES	105
5.	FURNITURE & BEDDING	109
5.1	INDUSTRY OVERVIEW	109
	Change in European PU Slabstock for Furniture Market (%).....	109
5.2	MAJOR USES OF POLYURETHANES IN THE EUROPEAN FURNITURE & BEDDING INDUSTRY	112
	Total EMEA Production of PU Flexible Foam Used in the Furniture & Bedding Industry by Type, 2009-2014 (Tonnes).....	112
	Total EMEA Production of PU Polyether Slabstock Foam for Furniture & Bedding Applications, 2009-2014 (Tonnes).....	115
	Total EMEA Production of Viscoelastic Foam for Furniture & Bedding Applications 2009-2014 (Tonnes)	116
	Total EMEA Production of PU Flexible Moulded Foam for Furniture & Bedding Applications, 2009-2014 (Tonnes).....	117
	Total EMEA Production of PU Integral Skin Foam for Furniture Applications, 2009-2014 (Tonnes)	118
5.3	MARKET TRENDS AND INFLUENCES	119
6.	REFRIGERATION	123
6.1	INDUSTRY OVERVIEW	123
	Production of Refrigerators and Freezers in France, 2007-2009 ('000 Units %).....	123
	Production of Refrigerators and Freezers in Spain, 2007-2009 ('000 Units %).....	124
	Production of Refrigerators and Freezers in Germany, 2007-2009 (€millions & %).....	124
6.2	MAJOR APPLICATIONS FOR PU IN THE REFRIGERATION INDUSTRY.....	125
	Total EMEA Production of PU Rigid(Tonnes Foam Used in the Refrigeration Industry by End-use, 2009-2014)....	125
	Total EMEA Production of PU Rigid Foam Used in the Manufacture of Refrigerators & Freezers, 2009-2014 (Tonnes).....	126
6.3	MARKET TRENDS AND INFLUENCES	127
