

## REACH Communication of Uses to Downstream Users Polyurethane Chemicals

The following table outlines REACH uses defined by Air Products for its Polyurethane Chemicals product line. For a complete list of Polyurethane Chemicals products, please use the link below:  
[Complete product list, Polyurethane Chemicals](#)

For a complete reference of the Use Descriptor System, please refer to the [Guidance on Information Requirements and Chemical Safety Assessment, Chapter R.12: Use Descriptor System](#) (Draft, 09/18/2009), published by the [European Chemicals Agency](#) (ECHA).

Application	Sector of Use (SU)	Process Category (PROC)	Product Category (PC)	Environmental Release Category (ERC)
Chemical manufacturing of performance additives	9 Manufacture of fine chemicals	<ul style="list-style-type: none"> <li>1 Use in closed process, no likelihood of exposure</li> <li>2 Use in closed, continuous process with occasional controlled exposure (e.g. sampling)</li> <li>3 Use in closed batch process (synthesis or formulation)</li> <li>4 Use in batch and other process (synthesis) where opportunity for exposure arises</li> <li>8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</li> <li>8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities</li> <li>9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</li> <li>15 Use as laboratory reagent</li> <li>24 High (mechanical) energy work-up of massive metals or substances bound in materials and/or articles</li> </ul>	19, 20	1, 6a
Formulating and Packaging	10 Formulation	<ul style="list-style-type: none"> <li>1 Use in closed process, no likelihood of exposure</li> <li>2 Use in closed, continuous process with occasional controlled exposure (e.g. sampling)</li> <li>3 Use in closed batch process (synthesis or formulation)</li> <li>4 Use in batch and other process (synthesis) where opportunity for exposure arises</li> <li>5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)</li> <li>8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</li> <li>8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities</li> <li>9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</li> <li>14 Production of preparations or articles by tableting, compression, extrusion, pelletisation</li> <li>15 Use as laboratory reagent</li> </ul>	19, 32	2, 4, 6a, 6b
Flexible Foam Applications (not excluding semi-rigid or semi-flexible applications) <i>(continued)</i>	3 Industrial uses	<ul style="list-style-type: none"> <li>1 Use in closed process, no likelihood of exposure</li> <li>2 Use in closed, continuous process with occasional controlled exposure (e.g. sampling)</li> <li>3 Use in closed batch process (synthesis or formulation)</li> </ul>	19, 32	6c

Application	Sector of Use (SU)	Process Category (PROC)	Product Category (PC)	Environmental Release Category (ERC)
(continued) Flexible Foam Applications (not excluding semi-rigid or semi-flexible applications)	3 Industrial uses	<p>4 Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)</p> <p>8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</p> <p>8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities</p> <p>14 Production of preparations or articles by tableting, compression, extrusion, pelletisation</p> <p>15 Use as laboratory reagent</p> <p>21 Low energy manipulation of substances in form of massive metal or bound in other materials and/or articles</p>	19,32	6c
Rigid Foam Applications (not excluding semi-rigid or semi-flexible applications)	3 Industrial uses	<p>1 Use in closed process, no likelihood of exposure</p> <p>2 Use in closed, continuous process with occasional controlled exposure (e.g. sampling)</p> <p>3 Use in closed batch process (synthesis or formulation)</p> <p>4 Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)</p> <p>7 Industrial spraying</p> <p>8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</p> <p>8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities</p> <p>15 Use as laboratory reagent</p> <p>21 Low energy manipulation of substances in form of massive metal or bound in other materials and/or articles</p>	19,32	6c
	21 Consumer uses	N/A	10, 32	8c, 8f
	22 Professional uses	<p>3 Use in closed batch process (synthesis or formulation)</p> <p>4 Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)</p> <p>8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</p> <p>10 Roller application or brushing</p> <p>11 Non industrial spraying</p>	10, 19, 32	8c, 8f
Coatings	3 Industrial uses	<p>1 Use in closed process, no likelihood of exposure</p> <p>2 Use in closed, continuous process with occasional controlled exposure (e.g. sampling)</p> <p>3 Use in closed batch process (synthesis or formulation)</p> <p>4 Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)</p> <p>7 Industrial spraying</p> <p>8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</p>	9a, 19	5, 6c
(continued)				

Application	Sector of Use (SU)	Process Category (PROC)	Product Category (PC)	Environmental Release Category (ERC)
<i>(continued)</i> Coatings	<b>3</b> Industrial uses	<b>8b</b> Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities <b>9</b> Transfer of substance or preparation into small containers (dedicated filling line, in-cluding weighing) <b>10</b> Roller application or brushing <b>13</b> Treatment of articles by dipping and pouring <b>15</b> Use as laboratory reagent	9a, 19	5, 6c
	<b>21</b> Consumer uses	<b>N/A</b>	9a	8c, 8f
	<b>22</b> Professional uses	<b>5</b> Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) <b>8a</b> Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities <b>9</b> Transfer of substance or preparation into small containers (dedicated filling line, in-cluding weighing) <b>10</b> Roller application or brushing <b>11</b> Non industrial spraying <b>13</b> Treatment of articles by dipping and pouring <b>19</b> Hand-mixing with intimate contact and only PPE available.	9a, 19	8c, 8f
Adhesives & Sealants	<b>3</b> Industrial uses	<b>1</b> Use in closed process, no likelihood of exposure <b>2</b> Use in closed, continuous process with occasional controlled exposure (e.g. sampling) <b>3</b> Use in closed batch process (synthesis or formulation) <b>4</b> Use in batch and other process (synthesis) where opportunity for exposure arises <b>5</b> Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) <b>7</b> Industrial spraying <b>8a</b> Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities <b>8b</b> Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities <b>9</b> Transfer of substance or preparation into small containers (dedicated filling line, in-cluding weighing) <b>10</b> Roller application or brushing <b>14</b> Production of preparations or articles by tableting, compression, extrusion, pelletisation <b>15</b> Use as laboratory reagent	1, 19	5, 6c
	<b>21</b> Consumer uses	<b>N/A</b>	1	8c, 8f
	<b>22</b> Professional uses	<b>4</b> Use in batch and other process (synthesis) where opportunity for exposure arises <b>5</b> Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) <b>8a</b> Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities <b>9</b> Transfer of substance or preparation into small containers (dedicated filling line, in-cluding weighing) <b>10</b> Roller application or brushing <b>11</b> Non industrial spraying <b>13</b> Treatment of articles by dipping and pouring <b>19</b> Hand-mixing with intimate contact and only PPE available.	1, 19	8c, 8f

Application	Sector of Use (SU)	Process Category (PROC)	Product Category (PC)	Environmental Release Category (ERC)
Elastomer and Thermoplastic Polyurethane Applications	3 Industrial uses	<ul style="list-style-type: none"> <li>1 Use in closed process, no likelihood of exposure</li> <li>2 Use in closed, continuous process with occasional controlled exposure (e.g. sampling)</li> <li>3 Use in closed batch process (synthesis or formulation)</li> <li>4 Use in batch and other process (synthesis) where opportunity for exposure arises</li> <li>6 Calendering operations</li> <li>7 Industrial spraying</li> <li>8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</li> <li>8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities</li> <li>9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</li> <li>14 Production of preparations or articles by tableting, compression, extrusion, pelletisation</li> <li>15 Use as laboratory reagent</li> </ul>	19, 32	5, 6c