Version November, 2011

The following Risk Characterization of MDIs include the following substances

Substance	Name	CAS No	EC/ECHA No
4,4'-MDI	4,4'-methylenediphenyl diisocyanate	101-68-8	202-966-0
2,4'-MDI	o-(p-isocyanatobenzyl)phenyl isocyanate	5873-54-1	227-534-9
MDI mixed Isomers	Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate		@905-806-4
	1,1'-methylenebis(isocyanatobenzene)	26447-40-5	247-714-0
Oligomeric MDI	Formaldehyde, oligomeric reaction products with aniline and phosgene	32055-14-4	500-079-6
MDI Homopolymer	4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with 2,4'-diisocyanatodiphenylmethane	109331-54-6	500-297-1
	4,4'-(and 2,4'-)Methylenediphenyl diisocyanate, oligomers	25686-28-6	500-040-3
	Reaction mass of 4,4'-Methylenediphenyl diisocyanate, oligomers and 4,4'-methylenediphenyl diisocyanate		@905-845-7
MDI-DPG	4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with oxydipropanol	59952-43-1	500-142-8
	4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with 2,4'-diisocyanatodiphenylmethane and oxydipropanol (merged to CAS# 59952-43-1, NLP 500-142-8, only one dossier generated)	88288-99-7	500-270-4
MDI-TPG	4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with [(methylethylene)bis(oxy)]dipropanol	52747-01-0	500-119-2
	4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with 2,4'-diisocyanatodiphenylmethane and [(methylethylene)bis(oxy)]dipropanol	75880-28-3	500-262-0
MDI/MDI Homopolymer/1,3-BD/TPG/PG	4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with butane-1,3-diol, 2,4'-diisocyanatodiphenylmethane, 1,1'-methylenebis(4-isocyanatobenzene) homopolymer, [(methylethylene)bis(oxy)]dipropanol and propane-1,2-diol		500-313-7
MDI/1,3-BD/TPG/PG	4,4'-Methylenediphenyl diisocyanate, oligomeric reaction products with butane-1,3-diol, 2,4'-diisocyanatodiphenylmethane, [(methylethylene) bis(oxy)]dipropanol and propane-1,2-diol	123714-19-2	500-312-1

Please notice, the OELs (Occupational Exposure Limits) remain in force parallel to the following PNECs and DN(M)ELs

PNEC = Predicted No Effect Concentration

DN(M)EL = Derived No (Minimal) Effect Level

Polymeric raw materials like PMDI, many polyols and pre-polymers do not have exposure scenarios because of an exemption provided by the regulator.
In the context of site-safety and for responsible care reasons, we advise to treat classified pMDI as well as classified pre-polymers made with the a.m. MDIs like these isocyanates.

The risk characterization of MDI has been conducted based on the PNECs and DN(M)ELs in the following tables.

Compartments	**PNEC**
Freshwater (mg/l)	1
Marine water (mg/l)	0.1
Soil (mg/kg ww)	1
Sewage Treatment plant	1

DNELs for workers	
Route	**DNEL**
Acute - systemic effects Inhalation (mg/m3) Dermal (mg/kg bw/day)	 0.1 50
Acute - local effects Inhalation (mg/m3) Dermal (mg/cm2)	 0.1 28.7
Long-term - systemic effects Dermal (mg/kg bw/day) Inhalation (mg/m3)	 n.d. 0.05
Long-term - local effects Dermal (mg/cm2) Inhalation (mg/m3)	 n.d. 0.05

DN(M)ELs for general population	
Route	**DN(M)EL**
Acute - systemic effects	
Inhalation (mg/m3)	0.05
Dermal (mg/kg bw/day)	25
Oral (mg/kg bw/day)	20
Acute - local effects	
Inhalation (mg/m3)	0.05
Dermal (mg/cm2)	17.2
Long-term - systemic effects	
Dermal (mg/kg bw/day)	n.d.
Inhalation (mg/m3)	0.025
Oral (mg/kg bw/day)	n.d.
Long-term - local effects	
Dermal (mg/kg bw/day)	n.d.
Inhalation (mg/m3)	0.025
Oral (mg/kg bw/day)	n.d.