Hexamethylene diisocyanate (HDI) CAS-No. 822-06-0 (January 2016)

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				Remarks and additional information (not
Country / Region	Limit type	Value [ppm]	Value [mg/m3]	exhaustive; refer to regulation)
Australia	Short Term Exposure Limit (STEL)	., ,	0.07 mg/m3	,
Australia	Time Weighted Average (TWA)		0.02 mg/m3	
Austria	MAK Ceiling Limit Value	0.005 ppm	0.035 mg/m3	
Austria	Maximum allowable concentration	0.005 ppm	0.035 mg/m3	
	Short-term Exposure Limit STEL			
	(Maximum allowable concentrations,			
Belarus	MAC)		0.05 mg/m3	Exposure: Vapour
Belgium	Time Weighted Average (TWA)	0.005 ppm	0.034 mg/m3	
Fed. of Bosnia				
	Maximum allowable concentration	0.005 ppm	0.035 mg/m3	
Bulgaria	Time Weighted Average (TWA)		0.1 mg/m3	
Canada	Time Mainlete d Assert 11 (TIMA)	0.005 (5.55	0.00	
Alberta	Time Weighted Average (TWA)	0.005 ppm	0.03 mg/m3	
Canada	Cailing Limit Value	0.01 nnm		
British Columbia	Ceiling Limit Value	0.01 ppm	+	
Canada British Columbia	Time Weighted Average (TWA)	0.005.555		
Canada	Time weighted Average (TWA)	0.005 ppm		
Manitoba (MB)	Time Weighted Average (TWA)	0.005 ppm		
Canada	Time Weighted Average (TWA)	0.005 ppm		
Ontario	Ceiling Limit Value (CEV)	0.02 ppm		
Canada	Celling Limit value (CLV)	0.02 ppm		
Ontario	Time Weighted Average (TWAEV)	0.005 ppm		
Canada	Time weighted /werage (1 w//L v)	0.000 ppm		
Quebec	Time Weighted Average (TWA)	0.005 ppm	0.034 mg/m3	Exposure must be minimized.
Canada		реготория	grine	
Saskatchewan	15 minute average contamination limit	0.015 ppm		
Canada				
Saskatchewan	8 hour average contamination limit	0.005 ppm		
	Permissible concentration - Time			
China	Weighted Average (PC-TWA)		0.03 mg/m3	
Czech Republic	Time Weighted Average (TWA)		0.035 mg/m3	
Czech Republic	Ceiling Limit Value		0.07 mg/m3	
Denmark	Threshold Limit Values (TLV)	0.005 ppm	0.035 mg/m3	
Estonia	Ceiling Limit Value	0.01 ppm	0.07 mg/m3	
Estonia	Time Weighted Average (TWA)	0.005 ppm	0.03 mg/m3	
Finland	Short Term Exposure Limit (STEL)		0.035 mg/m3	expressed as NCO
France	French Short Term Limit (VLE)	0.02 ppm	0.15 mg/m3	Indicative limit (VL)
	French Time Weighted Average			
France	(VME)	0.01 ppm	0.075 mg/m3	Indicative limit (VL)
_	Maximum allowable concentration	l		
Germany	(MAK value)	0.005 ppm	0.035 mg/m3	Exposure: Vapour and aerosol
				Exposure: Sum of vapours and aerosols.
				The workplace limit value (AGW) applies as
•		0.005	0.005 / 0	a rule only for monomers. Oligomers or
Germany	Exposure limit(s) (TRGS 900)	0.005 ppm	0.035 mg/m3	polymers: refer to TRGS 430 'Isocyanates'
Greece	Time Weighted Average (TWA)	0.01 ppm	0.075 mg/m3	
Greece	Short Term Exposure Limit (STEL)	0.02 ppm	0.15 mg/m3	
Hungary	Short Term Exposure Limit (STEL)		0.035 mg/m3	
Hungary	Time Weighted Average (TWA)		0.035 mg/m3	

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This duty to consult		Tipliance with ti	Tespective nation	nai regulations where the product is handled.
Country / Region	Limit type	Value [ppm]	Value [mg/m3]	Remarks and additional information (not exhaustive; refer to regulation)
Iceland	Short Term Exposure Limit (STEL)	0.01 ppm	0.07 mg/m3	5 minutes
Iceland	Time Weighted Average (TWA)	0.005 ppm	0.03 mg/m3	3 minutes
Ireland	Time Weighted Average (TWA)	0.005 ppm	0.00 mg/mo	expressed as NCO
Italy	Time Weighted Average (TWA)	0.005 ppm		expressed as Nee
Japan	Time Weighted Average (TWA)	0.005 ppm	0.034 mg/m3	+
Kazakhstan	Ceiling Limit (MAC)	0.000 ppm	0.05 mg/m3	Exposure: Vapour
Latvia	Time Weighted Average (TWA)		0.05 mg/m3	Exposure: Vapour
Lithuania	Ceiling Limit Value	0.01 ppm	0.07 mg/m3	
Lithuania	Time Weighted Average (TWA)	0.005 ppm	0.03 mg/m3	
Norway	Threshold Limit Value	0.005 ppm	0.035 mg/m3	
Norway	Short Term Exposure Limit (STEL)	0.01 ppm	0.000g,	
		ото т рр		
Poland	Short Term Exposure Limit (NDSCh)		0.08 mg/m3	
Poland	Time Weighted Average (NDS)		0.04 mg/m3	
Portugal	Time Weighted Average (TWA)	0.005 ppm		
Romania	Short Term Exposure Limit (STEL)	0.14 ppm	1 mg/m3	
Romania	Time Weighted Average (TWA)	0.007 ppm	0.05 mg/m3	
Russian				
Federation	Ceiling Limit Value		0.05 mg/m3	Exposure: Vapour
	Maximum allowable concentration		Ĭ	
Serbia	value	0.005 ppm	0.035 mg/m3	
Slovakia	Time Weighted Average (TWA)	0.005 ppm	0.035 mg/m3	
Slovenia	Time Weighted Average (TWA)	0.005 ppm	0.035 mg/m3	
Spain	Time Weighted Average (TWA)	0.005 ppm	0.035 mg/m3	
Sweden	Time Weighted Average (TWA)	0.002 ppm	0.02 mg/m3	
Sweden	Ceiling Limit Value	0.005 ppm	0.03 mg/m3	
Switzerland	Short Term Exposure Limit (STEL)		0.02 mg/m3	expressed as NCO
Switzerland	Time Weighted Average (TWA)		0.02 mg/m3	expressed as NCO
UK	Time Weighted Average (TWA)		0.02 mg/m3	expressed as NCO
UK	Short Term Exposure Limit (STEL)		0.07 mg/m3	expressed as NCO
Ukraine	Ceiling limit (MAC)		0.05 mg/m3	Exposure: Vapour
USA	Time Weighted Average (TWA)	0.005 ppm		
USA	Time Weighted Average (TWA)			
California	Permissible Exposure Limit (PEL)	0.005 ppm	0.034 mg/m3	

Isophorone diisocyanate (IPDI) CAS-No. 4098-71-9 (January 2016)

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Name	•	is information does not prevent the user from his duty to consult the regula	tions and thus to	ensure compliand	e with the respective national regulations where the
Value (pgm 1) Unit type	product is handled.			1	
Austracia Short Term Exposure Limit (SPLE) 0.07 mg/m3 0.07 m	Country/		V/ 1 . F 1	1/ 1 / 01	· · · · · · · · · · · · · · · · · · ·
Australia Time Weighted Average (TWA)		71	Value [ppm]		to regulation)
Autoria					
MAR Cealing Limit Value			0.005		
Belguin fine Weighted Average (TWA)					0F
Fed. of Bosnia and Herzegovin					8X5 minutes/snirt
Bildgartis Time Weighted Average (TWA) 0.006 ppm	Beigium	Time vveignted Average (TWA)	0.005 ppm	0.046 mg/m3	
Bildgartis Time Weighted Average (TWA) 0.006 ppm	F-4 -4 B	Maniana allamakia ana antartia	0.04	0.00 / 0	
Garnada Maheria Time Weighted Average (TWA) 0.005 ppm 0.005 mg/m3 1.005 mg/m3			U.U1 ppm		
Abberta		Time Weighted Average (TWA)		U. I HIG/III3	
Garada Birthis Columbia Time Weighted Average (TWA) 0,005 ppm 0,00		Time (Maighted Average (T)A/A)	0.005 nnm	0.05 mg/m2	
British Columbia Time Weighted Average (TWA) 0.005 ppm		Time vveignted Average (TWA)	0.005 ppm	0.05 mg/m3	
Garada British Columbia Celling Limit Value 0.01 ppm 0.05		Time (Maighted Average (T)A/A)	0.005 nnm		
British Columbia Celling Limit Value O.01 ppm		Time Weighted Average (TWA)	0.005 ppm		
Canada Manitoba (MB): Time Weighted Average (TWA): 0.005 ppm 0.005		Coiling Limit Value	0.01 nnm		
Manitoba (MB)		Ceiling Limit value	0.01 ppm		
Ganada Omatina Time Weighted Average (TWAEV) O.005 ppm O.045 mg/m3 Canada Ceiling Limit Value (CEV) O.02 ppm O.045 mg/m3 Exposure must be minimized O.055 ppm O.045 mg/m3 Canada Sabatchewan Permissible concentration - Time Weighted Average (PC-TWA) O.055 ppm O		Time (Maighted Average (T)A/A)	0.005 nnm		
Ontario Time Weighted Average (TWAEV)		Time Weighted Average (TWA)	0.005 ppm		
Canada		Time Mainted Assert of (TMAT)	0.005		
Ontatio Coiling Limit Value (CEV)		Time vveignted Average (TWAEV)	0.005 ppm		
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Canada Saskatchewan 15 minute average contamination limit 0.015 ppm 0.045 mg/m3 Exposure must be minimized		Ceiling Limit value (CEV)	0.02 ppm		
Sansatachewan		Time (Mainble of Assertance (T)A(A)	0.005	0.045	Francisco and be additioned
Canada Saskatchewan S hour average contamination limit 0.005 ppm 0.05 mg/m3				0.045 mg/m3	Exposure must be minimized
Permissible concentration - Time Weighted Average (PC-TWA)		Ÿ			
Denmark Threshold Limit Values (TLV 0.005 ppm 0.045 mg/m3			0.005 ppm	0.05 / 0	
Denmark					
Celing Limit Value			0.005		
Estonia Time Weighted Average (TWA) 0.005 ppm 0.05 mg/m3 sprissed as NCO					
Finland Short Term Exposure Limit (STEL) 0.02 ppm 0.18 mg/m3 Indicative limit (VL)		Ceiling Limit value			
France French Short Term Limit (VLE) 0.02 ppm 0.18 mg/m3 Indicative limit (VL) France French Time Weighted Average (VME) 0.01 ppm 0.09 mg/m3 Indicative limit (VL) Exposure: Vapour and aerosol E			0.005 ppm		
Frence French Time Weighted Average (VME)					
Maximum allowable concentration (MAK value)					
Exposure limit(s) (TRGS 900)					
Exposure limit(s) (TRGS 900) 0.005 ppm 0.046 mg/m3 limit value (AGW) applies as a rule only for monomers. Oligomers or polymers: refer to TRGS 430 'Isocyanates' 1	Germany	Maximum allowable concentration (MAK value)	0.005 ppm	0.046 mg/m3	Exposure: vapour and aerosoi
Exposure limit(s) (TRGS 900 0.005 ppm 0.046 mg/m3 0.007 mg/m3					
Greece	Gormany	Evnosure limit(s) (TRGS 900)	0.005.555	0.046 mg/m2	
Cecland Time Weighted Average (TWA) 0.005 ppm 0.18 mg/m3 0.005 ppm 0.05 mg/m3 0.005 ppm 0.00					Oligoriters of polymers, refer to TRGS 430 Isocyanates
Celand Time Weighted Average (TWA) 0.005 ppm 0.05 mg/m3 5 minutes					
Short Term Exposure Limit (STEL)					
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Lithuania Time Weighted Average (TWA) 0.005 ppm 0.05 mg/m3 Norway Threshold Limit Value 0.005 ppm 0.045 mg/m3 Norway Short Term Exposure Limit (STEL) 0.01 ppm 0.047 mg/m3 Portugal Time Weighted Average (NDS) 0.04 mg/m3 Serbia Maximum allowable concentration value 0.01 ppm 0.09 mg/m3 Slovenia Time Weighted Average (TWA) 0.01 ppm 0.09 mg/m3 Slovenia Time Weighted Average (TWA) 0.01 ppm 0.092 mg/m3 Sweden Ceiling Limit Value 0.005 ppm 0.046 mg/m3 Sweden Time Weighted Average (TWA) 0.005 ppm 0.046 mg/m3 Switzerland Time Weighted Average (TWA) 0.002 ppm 0.018 mg/m3 Switzerland Short Term Exposure Limit (STEL) 0.02 mg/m3 expressed as NCO UK Time Weighted Average (TWA) 0.02 mg/m3 expressed as NCO UK Short Term Exposure Limit (STEL) 0.02 mg/m3 expressed as NCO USA California Time Weighted Average (TWA) 0.005 ppm 0.045 mg/m3 California Time Weighted Average (TWA) 0.005 ppm 0.045 mg/m3 California Time Weighted Average (TWA) 0.005 ppm 0.045 mg/m3 California Time Weighted Average (TWA) 0.005 ppm 0.045 mg/m3 California Time Weighted Average (TWA) Permissible Exposure Limit (PEL) 0.005 ppm 0.045 mg/m3 California 0.005 ppm 0.045 mg/m3 California Time Weighted Average (TWA) Permissible Exposure Limit (PEL) 0.005 ppm 0.045 mg/m3				0.00 mg/m2	
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Poland				0.045 mg/m3	
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Switzerland Short Term Exposure Limit (STEL) 0.02 mg/m3 expressed as NCO UK Time Weighted Average (TWA) 0.02 mg/m3 expressed as NCO UK Short Term Exposure Limit (STEL) 0.07 mg/m3 expressed as NCO USA Time Weighted Average (TWA) 0.005 ppm USA California Time Weighted Average (TWA) Permissible Exposure Limit (PEL) 0.005 ppm 0.045 mg/m3 USA			0.00∠ ppm		avaraged as NCO
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UK Short Term Exposure Limit (STEL) 0.07 mg/m3 expressed as NCO USA Time Weighted Average (TWA) 0.005 ppm USA California Time Weighted Average (TWA) Permissible Exposure Limit (PEL) 0.005 ppm 0.045 mg/m3 USA					
USA Time Weighted Average (TWA) 0.005 ppm USA California Time Weighted Average (TWA) Permissible Exposure Limit (PEL) 0.005 ppm 0.045 mg/m3 USA					
USA California Time Weighted Average (TWA) Permissible Exposure Limit (PEL) USA USA 0.005 ppm 0.045 mg/m3			0.005	U.U/ mg/m3	expressed as NCO
California Time Weighted Average (TWA) Permissible Exposure Limit (PEL) 0.005 ppm 0.045 mg/m3 USA		Time vveignted Average (TVVA)	0.005 ppm	ļ	
USA		T. M I I			
		Time weignted Average (TWA) Permissible Exposure Limit (PEL)	0.005 ppm	0.045 mg/m3	
California Short Term Exposure Limit (STEL) [0.02 ppm]		OL AT E LIVERY			
	California	Short Term Exposure Limit (STEL)	0.02 ppm		

Dicylohexylmethane-4,4'-diisocyanate (H12MDI) CAS-No. 5124-30-1 (January 2016) Note: This is a compilation of relevant limits based on best knowledge. However, no warranty, whether expressed or implied is intended regarding completeness, accuracy and applicability of this information. The compilation of this information does not prevent the user from his duty to consult the regulations and thus to ensure compliance with the respective national regulations where the product is handled. emarks and additional information (not exhaustive; Country/Region Value [ppm] [mg/m3] Limit type refer to regulation) Short Term Exposure Limit (STEL) Time Weighted Average (TWA) MAK Ceiling Limit Value Australia 0.07 mg/m3 0.02 mg/m3 Australia 0.054 mg/m3 Austria .005 ppm 0.005 ppm Austria Maximum allowable concentration 0.054 mg/m3 Time Weighted Average (TWA) 0.055 mg/m3 0.005 ppm Belgium Fed. of Bosnia and Herzegowina Maximum allowable concentration).11 ppm 0.11 mg/m3 anada Alberta Time Weighted Average (TWA) 0.005 ppm 0.05 mg/m3 Canada British Columbia Time Weighted Average (TWA) 0.005 ppm Canada British Columbia Ceiling Limit Value 0.01 ppm Canada Manitoba (MB) Time Weighted Average (TWA) .005 ppm Canada Ontario Time Weighted Average (TWAEV) 0.005 ppm Canada).02 ppm Ontario Ceiling Limit Value (CEV) Canada Quebec Time Weighted Average (TWA) 0.005 ppm 0.054 mg/m3 Exposure must be minimized Canada Saskatchewan 15 minute average contamination limit 0.015 ppm Canada Saskatchewan 8 hour average contamination limit .005 ppm Threshold Limit Values (TLV) Ceiling Limit Value Time Weighted Average (TWA) 0.054 mg/m3 Denmark .005 ppm).01 ppm).005 ppm Estonia Estonia Finland Short Term Exposure Limit (STEL) 0.035 mg/m3 expressed as NCO ncluded in the regulation but with no data values. See MAK value (DFG) Germany egulation for further details Greece Short Term Exposure Limit (STEL) .01 ppm 0.11 mg/m3 Greece Time Weighted Average (TWA) 0.01 ppm 0.11 mg/m3 0.054 mg/m3 Iceland Time Weighted Average (TWA) 0.005 ppm expressed as NCO Ireland Time Weighted Average (TWA) 0.02 mg/m3 expressed as NCO Short Term Exposure Limit (STEL) Time Weighted Average (TWA) 0.07 mg/m3 0.005 ppm Italy Lithuania Time Weighted Average (TWA) 0.005 ppm Lithuania Ceiling Limit Value 0.01 ppm Norway Short Term Exposure Limit (STEL) .01 ppm Norway Threshold Limit Value 0.005 ppm 0.05 mg/m3 Portugal Time Weighted Average (TWA) 0.005 ppm Serbia Slovenia Maximum allowable concentration value Time Weighted Average (TWA) 0.11 ppm 0.11 mg/m3 0.054 mg/m3 0.005 ppm 0.055 mg/m3 Time Weighted Average (TWA) Ceiling Limit Value Spain Sweden 0.005 ppm Time Weighted Average (TWA) Time Weighted Average (TWA) Sweden 0.002 ppm 0.02 mg/m3 expressed as NCO Switzerland Switzerland Short Term Exposure Limit (STEL) 0.02 mg/m3 expressed as NCO expressed as NO Time Weighted Average (TWA) 0.02 mg/m3

0.07 mg/m3

0.054 mg/m3

0.005 ppm

0.005 ppm

expressed as NCO

Short Term Exposure Limit (STEL)

Limit (PEL)

USA

California

Time Weighted Average (TWA)
Time Weighted Average (TWA) Permissible Exposure

Generic limits for isocyanates (January 2016)

Note: This is a compilation of relevant limits based on best knowledge. However, no warranty, whether expressed or implied is intended regarding completeness, accuracy and applicability of this information. The compilation of this information does not prevent the user from his duty to consult the regulations and thus to ensure compliance with the respective national regulations where the product is handled.

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				Remarks and additional information (not exhaustive; refer	
Country / Region	Limit type	Value [ppm]	Value [mg/m3]	to regulation)	
Germany	TRGS 430 Expositionsleitwert (ELW)		0.018 mg/m3	expressed as NCO	
UK	Time Weighted Average (TWA)		0.02 mg/m3	expressed as NCO	
UK	Short Term Exposure Limit (STEL)		0.07 mg/m3	expressed as NCO	
Ireland	Short Term Exposure Limit (STEL)		0.07 mg/m3	expressed as NCO	
Ireland	Time Weighted Average (TWA)		0.02 mg/m3	expressed as NCO	
Norway	Short Term Exposure Limit (STEL)	0.01 ppm			
Norway	Threshold Limit Value	0.005 ppm			
Estonia	Ceiling Limit Value	0.01 ppm			
Estonia	Time Weighted Average (TWA)	0.005 ppm			
Finland	Short Term Exposure Limit (STEL)		0.035 mg/m3	expressed as NCO	
Lithuania	Ceiling Limit Value	0.01 ppm			
Lithuania	Time Weighted Average (TWA)	0.005 ppm			
Switzerland	Short Term Exposure Limit (STEL)		0.02 mg/m3	expressed as NCO	
Switzerland	Time Weighted Average (TWA)		0.02 mg/m3	expressed as NCO	
Australia	Short Term Exposure Limit (STEL)		0.07 mg/m3	expressed as NCO	
Australia	Time Weighted Average (TWA)		0.02 mg/m3	expressed as NCO	