

## SAFETY DATA SHEET

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

<b>Trade name or designation of the mixture</b>	CIM 61TN Epoxy Hardener	
<b>Registration number</b>	-	
<b>Synonyms</b>	None.	
<b>Issue date</b>	27-July-2016	
<b>Version number</b>	01	

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

<b>Identified uses</b>	Epoxy Primer for CIM Urethane Coatings
<b>Uses advised against</b>	None known.

#### 1.3. Details of the supplier of the safety data sheet

##### Supplier

<b>Company name</b>	CIM INDUSTRIES INC	
<b>Address</b>	6900 NELMS STREET HOUSTON, TX 77061 United States	
<b>Division</b>	A CHASE CORPORATION COMPANY	
<b>Telephone</b>	General Assistance	800 543-3458
<b>e-mail</b>	info@chasecorp.com	
<b>Contact person</b>	Not available.	

<b>1.4. Emergency telephone number</b>	Chemtrec (US - 24 hrs)	800 424-9300
	Chemtrec (INTL - 24 hrs)	703-527-3887

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

##### Classification according to Directive 67/548/EEC or 1999/45/EC as amended

**Classification** F;R11, Carc. Cat. 2;R45, Muta. Cat. 2;R46, Xi;R36/37/38, R43

The full text for all R-phrases is displayed in section 16.

##### Classification according to Regulation (EC) No 1272/2008 as amended

##### Physical hazards

Flammable liquids	Category 2	H225 - Highly flammable liquid and vapour.
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##### Health hazards

Skin corrosion/irritation	Category 2	H315 - Causes skin irritation.
Serious eye damage/eye irritation	Category 2	H319 - Causes serious eye irritation.
Skin sensitisation	Category 1	H317 - May cause an allergic skin reaction.
Germ cell mutagenicity	Category 1B	H340 - May cause genetic defects.
Carcinogenicity	Category 1B	H350 - May cause cancer.

**Hazard summary**

<b>Physical hazards</b>	Highly flammable.
<b>Health hazards</b>	May cause cancer. May cause heritable genetic damage. Irritating to eyes, respiratory system and skin. May cause sensitisation by skin contact. Occupational exposure to the substance or mixture may cause adverse health effects.
<b>Environmental hazards</b>	Not classified for hazards to the environment.
<b>Specific hazards</b>	None known.
<b>Main symptoms</b>	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Coughing. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

**2.2. Label elements****Label according to Regulation (EC) No. 1272/2008 as amended**

**Contains:** Aromatic solvent, Dimer Acids reacted with Polyamine, Isobutanol, Methyl ethyl ketone (MEK)

**Hazard pictograms**

**Signal word** Danger

**Hazard statements**

H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H340	May cause genetic defects.
H350	May cause cancer.

**Precautionary statements****Prevention**

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing mist or vapour.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear eye protection/face protection.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

**Response**

P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a POISON CENTER/doctor if you feel unwell.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P370 + P378	In case of fire: Use appropriate media to extinguish.

**Storage**

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

**Disposal**

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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**Supplemental label information** None.

2.3. Other hazards None known.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Aromatic solvent	10 - < 20	64742-95-6 265-199-0	-	649-356-00-4	
<b>Classification:</b>		<b>DSD:</b> Carc. Cat. 2;R45, Muta. Cat. 2;R46, Xn;R65			P
		<b>CLP:</b> Asp. Tox. 1;H304, Muta. 1B;H340, Carc. 1B;H350			P
Dimer Acids reacted with Polyamine	10 - < 20	Proprietary -	-	-	
<b>Classification:</b>		<b>DSD:</b> -			
		<b>CLP:</b> -			
Methyl ethyl ketone (MEK)	5 - < 10	78-93-3 201-159-0	-	606-002-00-3	#
<b>Classification:</b>		<b>DSD:</b> F;R11, Xi;R36, R66-67			
		<b>CLP:</b> Flam. Liq. 2;H225, Eye Irrit. 2;H319, STOT SE 3;H336			
Isobutanol	1 - < 3	78-83-1 201-148-0	-	603-108-00-1	
<b>Classification:</b>		<b>DSD:</b> R10, Xi;R37/38-41, R67			
		<b>CLP:</b> Flam. Liq. 3;H226, Skin Irrit. 2;H315, Eye Dam. 1;H318, STOT SE 3;H335, STOT SE 3;H336			

Other components below reportable levels 60 - < 70

#### List of abbreviations and symbols that may be used above

CLP: Regulation No. 1272/2008.

DSD: Directive 67/548/EEC.

M: M-factor

vPvB: very persistent and very bioaccumulative substance.

PBT: persistent, bioaccumulative and toxic substance.

#: This substance has been assigned Community workplace exposure limit(s).

#### Composition comments

The full text for all R- and H-phrases is displayed in section 16. Note: As supplied and during application the quartz is bound within the CIM matrix. The quartz is not in a respirable form and should not pose a hazard to the user.

## SECTION 4: First aid measures

#### General information

Take off all contaminated clothing immediately. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

#### 4.1. Description of first aid measures

##### Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE or doctor/physician if you feel unwell.

##### Skin contact

Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse.

##### Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

##### Ingestion

Rinse mouth. Get medical attention if symptoms occur.

#### 4.2. Most important symptoms and effects, both acute and delayed

Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Coughing. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

## SECTION 5: Firefighting measures

<b>General fire hazards</b>	Highly flammable liquid and vapour.
<b>5.1. Extinguishing media</b>	
<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>5.2. Special hazards arising from the substance or mixture</b>	Vapours may form explosive mixtures with air. Vapours may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
<b>5.3. Advice for firefighters</b>	
<b>Special protective equipment for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Special fire fighting procedures</b>	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapour. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8.
<b>For emergency responders</b>	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Use personal protection recommended in Section 8 of the SDS.

**6.2. Environmental precautions** Avoid discharge into drains, water courses or onto the ground.

**6.3. Methods and material for containment and cleaning up** Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil etc) away from spilled material. This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.

**6.4. Reference to other sections** For personal protection, see section 8. For waste disposal, see section 13 of the SDS.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist or vapour. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

**7.2. Conditions for safe storage, including any incompatibilities** Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

**7.3. Specific end use(s)** Not available.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

## Occupational exposure limits

### Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	MAK	150 mg/m3 50 ppm	
	STEL	600 mg/m3 200 ppm	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	MAK	295 mg/m3	
	STEL	100 ppm 590 mg/m3 200 ppm	
Quartz (CAS 14808-60-7)	MAK	0,15 mg/m3	Respirable dust.

### Belgium. Exposure Limit Values.

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	TWA	154 mg/m3 50 ppm	
	STEL	900 mg/m3	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	TWA	300 ppm 600 mg/m3 200 ppm	
	TWA	0,1 mg/m3	Respirable dust.

### Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Components	Type	Value	Form
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	885 mg/m3	
	TWA	590 mg/m3	
Quartz (CAS 14808-60-7)	TWA	0,07 mg/m3	Respirable fraction.

### Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	MAC	154 mg/m3 50 ppm	
	STEL	231 mg/m3 75 ppm	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	MAC	600 mg/m3	
	STEL	200 ppm 900 mg/m3 300 ppm	
Quartz (CAS 14808-60-7)	MAC	0,1 mg/m3	

### Cyprus. OELs. Control of factory atmosphere and dangerous substances in factories regulation, PI 311/73, as amended.

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	TWA	150 mg/m3 50 ppm	

### Czech Republic. OELs. Government Decree 361

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	Ceiling	600 mg/m3	
	TWA	300 mg/m3	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	Ceiling	900 mg/m3	
	TWA	600 mg/m3	
Quartz (CAS 14808-60-7)	TWA	0,1 mg/m3	Respirable dust.

### Denmark. Exposure Limit Values

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	Ceiling	150 mg/m3 50 ppm	
	TLV	145 mg/m3	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	TLV	50 ppm	
	TLV	0,3 mg/m3	Total

**Denmark. Exposure Limit Values**

Components	Type	Value	Form
		0,1 mg/m3	Respirable.

**Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)**

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	TWA	150 mg/m3 50 ppm	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	900 mg/m3	
	TWA	300 ppm 600 mg/m3 200 ppm	
Quartz (CAS 14808-60-7)	TWA	0,1 mg/m3	Respirable dust.

**Finland. Workplace Exposure Limits Components**

Components	Type	Value	Form
Aromatic solvent (CAS 64742-95-6)	TWA	100 mg/m3	
Isobutanol (CAS 78-83-1)	STEL	230 mg/m3 75 ppm	
	TWA	150 mg/m3 50 ppm	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	300 mg/m3	
		100 ppm	
Quartz (CAS 14808-60-7)	TWA	0,05 mg/m3	Respirable.

**France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984 Components**

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	VME	150 mg/m3 50 ppm	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	VLE	900 mg/m3	
	VME	300 ppm 600 mg/m3 200 ppm	
Quartz (CAS 14808-60-7)	VME	0,1 mg/m3	Respirable fraction.

**Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)**

Components	Type	Value
Isobutanol (CAS 78-83-1)	TWA	310 mg/m3 100 ppm
Methyl ethyl ketone (MEK) (CAS 78-93-3)	TWA	600 mg/m3 200 ppm

**Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace Components**

Components	Type	Value
Isobutanol (CAS 78-83-1)	AGW	310 mg/m3 100 ppm
Methyl ethyl ketone (MEK) (CAS 78-93-3)	AGW	600 mg/m3 200 ppm

**Greece. OELs (Decree No. 90/1999, as amended) Components**

Components	Type	Value
Isobutanol (CAS 78-83-1)	STEL	300 mg/m3 100 ppm
	TWA	300 mg/m3 100 ppm
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	900 mg/m3
	TWA	300 ppm 600 mg/m3

**Greece. OELs (Decree No. 90/1999, as amended)**

Components	Type	Value	Form
		200 ppm	

**Hungary. OELs. Joint Decree on Chemical Safety of Workplaces**

Components	Type	Value	Form
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	900 mg/m3	
	TWA	600 mg/m3	
Quartz (CAS 14808-60-7)	TWA	0,15 mg/m3	Respirable.

**Iceland. OELs. Regulation 154/1999 on occupational exposure limits**

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	STEL	150 mg/m3 50 ppm	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	900 mg/m3	
	TWA	300 ppm 145 mg/m3	
Quartz (CAS 14808-60-7)	TWA	50 ppm 0,3 mg/m3 0,1 mg/m3	Total dust. Respirable dust.

**Ireland. Occupational Exposure Limits**

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	STEL	225 mg/m3 75 ppm	
	TWA	150 mg/m3 50 ppm	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	900 mg/m3	
	TWA	300 ppm 600 mg/m3	
Quartz (CAS 14808-60-7)	TWA	200 ppm 0,1 mg/m3	Respirable dust.

**Italy. Occupational Exposure Limits**

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	TWA	50 ppm	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	900 mg/m3	
	TWA	300 ppm 600 mg/m3	
Quartz (CAS 14808-60-7)	TWA	200 ppm 0,025 mg/m3	Respirable fraction.

**Latvia. OELs. Occupational exposure limit values of chemical substances in work environment**

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	TWA	10 mg/m3	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	900 mg/m3	
	TWA	300 ppm 200 mg/m3 67 ppm	

**Lithuania. OELs. Limit Values for Chemical Substances, General Requirements**

Components	Type	Value	Form
Aromatic solvent (CAS 64742-95-6)	STEL	600 mg/m3	
	TWA	100 ppm 300 mg/m3 50 ppm	
Isobutanol (CAS 78-83-1)	TWA	10 mg/m3	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	900 mg/m3	
	TWA	300 ppm 600 mg/m3	

**Lithuania. OELs. Limit Values for Chemical Substances, General Requirements**

Components	Type	Value	Form
Quartz (CAS 14808-60-7)	TWA	200 ppm 0,1 mg/m3	Respirable fraction.

**Luxembourg. Binding Occupational exposure limit values (Annex I), Memorial A**

Components	Type	Value	Form
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	900 mg/m3	
	TWA	300 ppm 600 mg/m3 200 ppm	

**Malta. OELs. Occupational Exposure Limit Values (L.N. 227. of Occupational Health and Safety Authority Act (CAP. 424), Schedules I and V)**

Components	Type	Value	Form
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	900 mg/m3	
	TWA	300 ppm 600 mg/m3 200 ppm	

**Netherlands. OELs (binding)**

Components	Type	Value	Form
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	900 mg/m3	
	TWA	590 mg/m3	
Quartz (CAS 14808-60-7)	TWA	0,075 mg/m3	Respirable dust.

**Norway. Administrative Norms for Contaminants in the Workplace**

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	Ceiling	75 mg/m3 25 ppm	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	TLV	220 mg/m3 75 ppm	
Quartz (CAS 14808-60-7)	TLV	0,3 mg/m3 0,1 mg/m3	Total dust. Respirable dust.

**Poland. MACs. Regulation regarding maximum permissible concentrations and intensities of harmful factors in the work environment, Annex 1**

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	STEL	200 mg/m3	
	TWA	100 mg/m3	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	900 mg/m3	
	TWA	450 mg/m3	
Quartz (CAS 14808-60-7)	TWA	2 mg/m3 0,3 mg/m3	Inhalable fraction. Respirable fraction.

**Portugal. OELs. Decree-Law n. 290/2001 (Journal of the Republic - 1 Series A, n.266)**

Components	Type	Value	Form
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	900 mg/m3	
	TWA	300 ppm 600 mg/m3 200 ppm	

**Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)**

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	TWA	50 ppm	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	300 ppm	
	TWA	200 ppm	
Quartz (CAS 14808-60-7)	TWA	0,025 mg/m3	Respirable fraction.



**Romania. OELs. Protection of workers from exposure to chemical agents at the workplace**

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	STEL	200 mg/m <sup>3</sup> 66 ppm	
	TWA	100 mg/m <sup>3</sup> 33 ppm	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	900 mg/m <sup>3</sup> 300 ppm	
	TWA	600 mg/m <sup>3</sup> 200 ppm	
Quartz (CAS 14808-60-7)	TWA	0,1 mg/m <sup>3</sup>	Respirable fraction.

**Romania. OELs/CMRs. Protection of workers from exposure to carcinogen and mutagen agents. Hotarâre Nr. 1093 din 16 august 2006, Annex 3**

Components	Type	Value	Form
Quartz (CAS 14808-60-7)	TWA	0,1 mg/m <sup>3</sup>	Respirable dust.

**Slovakia. OELs for carcinogens and mutagens. Regulation No. 46/2002 on carcinogenic and mutagenic substances**

Components	Type	Value	Form
Quartz (CAS 14808-60-7)	TWA	0,1 mg/m <sup>3</sup>	Respirable fraction.

**Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents**

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	TWA	310 mg/m <sup>3</sup> 100 ppm	
	STEL	900 mg/m <sup>3</sup> 300 ppm	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	TWA	600 mg/m <sup>3</sup> 200 ppm	

**Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)**

Components	Type	Value	Form
Aromatic solvent (CAS 64742-95-6)	TWA	100 mg/m <sup>3</sup> 20 ppm	
Isobutanol (CAS 78-83-1)	TWA	310 mg/m <sup>3</sup> 100 ppm	
	STEL	600 mg/m <sup>3</sup> 200 ppm	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	TWA	600 mg/m <sup>3</sup> 200 ppm	
Quartz (CAS 14808-60-7)	TWA	0,15 mg/m <sup>3</sup>	Respirable fraction.

**Spain. Occupational Exposure Limits**

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	TWA	154 mg/m <sup>3</sup> 50 ppm	
	STEL	900 mg/m <sup>3</sup> 300 ppm	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	TWA	600 mg/m <sup>3</sup> 200 ppm	
	STEL	900 mg/m <sup>3</sup> 300 ppm	
Quartz (CAS 14808-60-7)	TWA	0,1 mg/m <sup>3</sup>	Respirable fraction.

**Sweden. Occupational Exposure Limit Values**

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	STEL	250 mg/m <sup>3</sup> 75 ppm	
	TWA	150 mg/m <sup>3</sup> 50 ppm	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	300 mg/m <sup>3</sup> 100 ppm	
	TWA	150 mg/m <sup>3</sup> 50 ppm	
Quartz (CAS 14808-60-7)	TWA	0,1 mg/m <sup>3</sup>	Respirable dust.

**Switzerland. SUVA Grenzwerte am Arbeitsplatz**

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	STEL	150 mg/m3 50 ppm	
	TWA	150 mg/m3 50 ppm	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	590 mg/m3 200 ppm	
	TWA	590 mg/m3 200 ppm	
Quartz (CAS 14808-60-7)	TWA	0,15 mg/m3	Respirable dust.

**UK. EH40 Workplace Exposure Limits (WELs)**

Components	Type	Value	Form
Isobutanol (CAS 78-83-1)	STEL	231 mg/m3 75 ppm	
	TWA	154 mg/m3 50 ppm	
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	899 mg/m3 300 ppm	
	TWA	600 mg/m3 200 ppm	
Quartz (CAS 14808-60-7)	TWA	0,1 mg/m3	Respirable.

**EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU**

Components	Type	Value
Methyl ethyl ketone (MEK) (CAS 78-93-3)	STEL	900 mg/m3 300 ppm
	TWA	600 mg/m3 200 ppm

**Biological limit values****France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS, ND 2065))**

Components	Value	Determinant	Specimen	Sampling time
Methyl ethyl ketone (MEK) (CAS 78-93-3)	2 mg/l	Méthyléthylcétone	Urine	*

\* - For sampling details, please see the source document.

**Germany. TRGS 903, BAT List (Biological Limit Values)**

Components	Value	Determinant	Specimen	Sampling time
Methyl ethyl ketone (MEK) (CAS 78-93-3)	5 mg/l	2-Butanon	Urine	*

\* - For sampling details, please see the source document.

**Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4**

Components	Value	Determinant	Specimen	Sampling time
Methyl ethyl ketone (MEK) (CAS 78-93-3)	2 mg/l	Metiletilcetona	Urine	*

\* - For sampling details, please see the source document.

**Switzerland. BAT-Werte (Biological Limit Values in the Workplace as per SUVA)**

Components	Value	Determinant	Specimen	Sampling time
Methyl ethyl ketone (MEK) (CAS 78-93-3)	5 mg/l	2-Butanon (MEK)	Urine	*

\* - For sampling details, please see the source document.

**UK. EH40 Biological Monitoring Guidance Values (BMGVs)**

Components	Value	Determinant	Specimen	Sampling time
Methyl ethyl ketone (MEK) (CAS 78-93-3)	70 umol/l	Butan-2-one	Urine	*

\* - For sampling details, please see the source document.

**Recommended monitoring procedures** Follow standard monitoring procedures.

**Derived no-effect level (DNEL)** Not available.

**Predicted no effect concentrations (PNECs)** Not available.

## 8.2. Exposure controls

**Appropriate engineering controls** Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

## Individual protection measures, such as personal protective equipment

**General information** Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye/face protection** Chemical respirator with organic vapour cartridge and full facepiece.

### Skin protection

**- Hand protection** Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

**- Other** Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

**Respiratory protection** Chemical respirator with organic vapour cartridge and full facepiece.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**Hygiene measures** When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

**Environmental exposure controls** Environmental manager must be informed of all major releases.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

#### Appearance

**Physical state** Liquid.

**Form** Viscous Liquid.

**Colour** Light brown.

**Odour** Solvent.

**Odour threshold** Not available.

**pH** Not available.

**Melting point/freezing point** -86,64 °C (-123,95 °F) estimated

**Initial boiling point and boiling range** 79,59 °C (175,26 °F) estimated

**Flash point** -4,0 °C (24,8 °F)

**Evaporation rate** Not available.

**Flammability (solid, gas)** Not applicable.

#### Upper/lower flammability or explosive limits

**Flammability limit - lower (%)** 1,8 % estimated

**Flammability limit - upper (%)** 10 % estimated

**Explosive limit - lower (%)** 0,5

**Explosive limit – upper (%)** 11,4

**Vapour pressure** 20,13 hPa estimated

**Vapour density** Not available.

**Relative density** Not available.

#### Solubility(ies)

**Solubility (water)** Very Slightly Soluble

**Solubility (other)** Not available.

<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	> 450 °C (> 842 °F)
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Explosive properties</b>	Not explosive.
<b>Oxidising properties</b>	Not oxidising.
<b>9.2. Other information</b>	
<b>Density</b>	0,80 g/cm <sup>3</sup> estimated
<b>Percent volatile</b>	25 % estimated
<b>Specific gravity</b>	1,5
<b>VOC (Weight %)</b>	240 g/l for the mixed epoxy (per EPA Method 24)

## SECTION 10: Stability and reactivity

<b>10.1. Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>10.2. Chemical stability</b>	Material is stable under normal conditions.
<b>10.3. Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>10.4. Conditions to avoid</b>	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
<b>10.5. Incompatible materials</b>	Strong oxidising agents. Powerful oxidizers. Ammonia. Amines. Isocyanates Caustics. Chlorine.
<b>10.6. Hazardous decomposition products</b>	No hazardous decomposition products are known.

## SECTION 11: Toxicological information

**General information** Occupational exposure to the substance or mixture may cause adverse effects.

### Information on likely routes of exposure

<b>Inhalation</b>	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
<b>Skin contact</b>	Causes skin irritation. May cause an allergic skin reaction.
<b>Eye contact</b>	Causes serious eye irritation.
<b>Ingestion</b>	May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

**Symptoms** Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Coughing. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

### 11.1. Information on toxicological effects

**Acute toxicity** May cause an allergic skin reaction. May cause respiratory irritation.

Components	Species	Test results
Isobutanol (CAS 78-83-1)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rabbit	3392 mg/kg
<b>Inhalation</b>		
LC50	Rat	8000 ppm, 4 Hours
LD50	Guinea pig	19,9 mg/l
	Rabbit	26,25 mg/l
	Rat	19,2 mg/l
<b>Oral</b>		
LD50	Mouse	3500 mg/kg
	Rat	2,46 g/kg
Methyl ethyl ketone (MEK) (CAS 78-93-3)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rabbit	> 8000 mg/kg
<b>Inhalation</b>		
LC50	Mouse	11000 ppm, 45 Minutes

Components	Species	Test results
	Rat	11700 ppm, 4 Hours
<b>Oral</b>		
LD50	Mouse	670 mg/kg
	Rat	2300 - 3500 mg/kg

\* Estimates for product may be based on additional component data not shown.

<b>Skin corrosion/irritation</b>	Causes skin irritation.
<b>Serious eye damage/eye irritation</b>	Causes serious eye irritation.
<b>Respiratory sensitisation</b>	Due to partial or complete lack of data the classification is not possible.
<b>Skin sensitisation</b>	May cause an allergic skin reaction.
<b>Germ cell mutagenicity</b>	May cause genetic defects.
<b>Carcinogenicity</b>	May cause cancer.
<b>Reproductive toxicity</b>	Due to partial or complete lack of data the classification is not possible.
<b>Specific target organ toxicity - single exposure</b>	May cause respiratory irritation.
<b>Specific target organ toxicity - repeated exposure</b>	Due to partial or complete lack of data the classification is not possible.
<b>Aspiration hazard</b>	Due to partial or complete lack of data the classification is not possible.
<b>Mixture versus substance information</b>	No information available.
<b>Other information</b>	Not available.

## SECTION 12: Ecological information

**12.1. Toxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test results
Isobutanol (CAS 78-83-1)		
<b>Aquatic</b>		
Crustacea	EC50	Water flea ( <i>Daphnia pulex</i> )
		950 - 1200 mg/l, 48 hours
Fish	LC50	Bleak ( <i>Alburnus alburnus</i> )
		1000 - 3000 mg/l, 96 hours
Methyl ethyl ketone (MEK) (CAS 78-93-3)		
<b>Aquatic</b>		
Crustacea	EC50	Water flea ( <i>Daphnia magna</i> )
		4025 - 6440 mg/l, 48 hours
Fish	LC50	Sheepshead minnow ( <i>Cyprinodon variegatus</i> )
		> 400 mg/l, 96 hours

\* Estimates for product may be based on additional component data not shown.

**12.2. Persistence and degradability** No data is available on the degradability of this product.

### 12.3. Bioaccumulative potential

#### Partition coefficient n-octanol/water (log Kow)

Isobutanol	0,76
Methyl ethyl ketone (MEK)	0,29

**Bioconcentration factor (BCF)** Not available.

**12.4. Mobility in soil** No data available.

**12.5. Results of PBT and vPvB assessment** Not available.

**12.6. Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**Residual waste** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

<b>Contaminated packaging</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
<b>EU waste code</b>	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Disposal methods/information</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Special precautions</b>	Dispose in accordance with all applicable regulations.

## SECTION 14: Transport information

### ADR

<b>14.1. UN number</b>	UN1993
<b>14.2. UN proper shipping name</b>	FLAMMABLE LIQUID, N.O.S. (vapour pressure at 50 °C more than 110 kPa) (Methyl ethyl ketone (MEK), Isobutanol)
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	3
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	3
<b>Hazard No. (ADR)</b>	33
<b>Tunnel restriction code</b>	D/E
<b>14.4. Packing group</b>	II
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

### RID

<b>14.1. UN number</b>	UN1993
<b>14.2. UN proper shipping name</b>	FLAMMABLE LIQUID, N.O.S. (vapour pressure at 50 °C not more than 110 kPa) (Methyl ethyl ketone (MEK), Isobutanol)
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	3
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	3
<b>14.4. Packing group</b>	II
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

### ADN

<b>14.1. UN number</b>	UN1993
<b>14.2. UN proper shipping name</b>	Flammable Liquid, ( [vapour pressure at 50 °c not more than 110 kpa])
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	3
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	3
<b>14.4. Packing group</b>	II
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

### IATA

<b>14.1. UN number</b>	UN1993
<b>14.2. UN proper shipping name</b>	Flammable liquid, n.o.s. (Methyl ethyl ketone (MEK), Isobutanol)
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	3
<b>Subsidiary risk</b>	-
<b>14.4. Packing group</b>	II
<b>14.5. Environmental hazards</b>	No.
<b>ERG Code</b>	3H
<b>14.6. Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Other information</b>	
<b>Passenger and cargo aircraft</b>	Allowed with restrictions.
<b>Cargo aircraft only</b>	Allowed with restrictions.

## IMDG

14.1. UN number	UN1993
14.2. UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (Methyl ethyl ketone (MEK), Isobutanol)
14.3. Transport hazard class(es)	
Class	3
Subsidiary risk	-
14.4. Packing group	II
14.5. Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-E
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
14.7. Transport in bulk according to Annex II of Marpol and the IBC Code	Not established.

ADN; ADR; IATA; IMDG; RID



## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### EU regulations

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**

Not listed.

**Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**

Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**

Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**

Not listed.

#### Authorisations

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**

Not listed.

#### Restrictions on use

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

Methyl ethyl ketone (MEK) (CAS 78-93-3)

Aromatic solvent (CAS 64742-95-6)

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended**

Aromatic solvent (CAS 64742-95-6)

**Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding, as amended**

Aromatic solvent (CAS 64742-95-6)

## Other EU regulations

### Directive 2012/18/EU on major accident hazards involving dangerous substances

Isobutanol (CAS 78-83-1)

Methyl ethyl ketone (MEK) (CAS 78-93-3)

### Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended

Aromatic solvent (CAS 64742-95-6)

Isobutanol (CAS 78-83-1)

Methyl ethyl ketone (MEK) (CAS 78-93-3)

### Directive 94/33/EC on the protection of young people at work, as amended

Aromatic solvent (CAS 64742-95-6)

## Other regulations

The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006. Pregnant women should not work with the product, if there is the least risk of exposure.

## National regulations

Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work. Follow national regulation for work with chemical agents.

## 15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

## SECTION 16: Other information

### List of abbreviations

Not available.

### References

Not available.

### Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

### Full text of any statements or R-phrases and H-statements under Sections 2 to 15

R10 Flammable.  
R11 Highly flammable.  
R36 Irritating to eyes.  
R36/37/38 Irritating to eyes, respiratory system and skin.  
R37/38 Irritating to respiratory system and skin.  
R41 Risk of serious damage to eyes.  
R43 May cause sensitisation by skin contact.  
R45 May cause cancer.  
R46 May cause heritable genetic damage.  
R65 Harmful: may cause lung damage if swallowed.  
R66 Repeated exposure may cause skin dryness or cracking.  
R67 Vapours may cause drowsiness and dizziness.  
H225 Highly flammable liquid and vapour.  
H226 Flammable liquid and vapour.  
H304 May be fatal if swallowed and enters airways.  
H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H336 May cause drowsiness or dizziness.  
H340 May cause genetic defects.  
H350 May cause cancer.

### Revision information

None.

### Training information

Follow training instructions when handling this material.

### Issued by

Dan Libby

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