

Safety Data Sheet

according to Regulation (EU) 2015/830

Date of issue: 8/3/2015 Revision date: 1/21/2020 Version: 2.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product form : Mixture
 Trade name : Tempilaq® Advanced 400 °F (204 °C)

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

Industrial/Professional use spec : Industrial
 For professional use only
 Use of the substance/mixture : Coatings and paints, thinners, paint removers

1.2.2. Uses advised against

Restrictions on use : No additional information available

1.3. Details of the supplier of the safety data sheet

LA-CO Industries Europe S.A.S.

Parc Industriel de la Plaine de

l'Ain - Allée des Combes.

01150.BLYES.France.

Phone: +33 (0)4 74 46 23 23

Fax: +33 (0)4 74 46 23 29

E-mail: info@eu.laco.com

Web: http://www.markal.com

1.4. Emergency telephone number

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887;
 全国应急中心 0532 8388 9090

EU Member State	Officieel adviesorgaan	Adres	Noodnummer
AUSTRIA	Vergiftungsinformationszentrale (Poisons Information Centre)	Allgemeines Krankenhaus Waehringer Geurtel 18-20 1090 Wien	+43 1 406 43 43
BELARUS	The Belarus Republican Poisons Centre	Kizhevatova str. 58 Minsk 220115	+375 (0)17 201 9158
BELGIUM	Centre Anti-Poisons/Antigifcentrum c/o Hôpital Central de la Base - Reine Astrid	Rue Bruyn 1 B -1120 Bruxelles/Brussel	+32 70 245 245
BULGARIA	Национален токсикологичен информационен център National Clinical Toxicology Centre, Emergency Medical Institute "Pirogov"	21 Tottleben Boulevard 1606 SOFIA	+359 2 9154 409
CROATIA	Poisons Control Centre Institute of Medical Research & Occupational Health	Ksaverska Cesta 2 P.O. Box 291 HR-10000 Zagreb	+385 1 234 8342
CZECH REPUBLIC	Toxikologické informační středisko Clinic For Occupational Medicine, 1st Medical Faculty, Charles University	Na Bojišti 1 120 00 Praha 2	+42 2 2491 9293 +42 2 2491 5402
DENMARK	Giftlinjen Bispebjerg Hospital	Bispebjerg Bakke 23, 60, 1 DK-2400 København NV	+45 82 12 12 12 +45 35 31 55 55
ESTONIA	Mürgistusteabekeskus	Gonsiori 29 15027 Tallinn	+372 626 93 90
FINLAND	Myrkytystietokeskus	P.O.B 340 (Haartmaninkatu 4) HUS SF - 00029 Helsinki	+358 9 471 977
FRANCE	ORFILA		+33 1 45 42 59 59
GERMANY	Berliner Betrieb für Zentrale Gesundheitliche Aufgaben	Oranienburger Strasse 285 13437 Berlin	+49 30 19240
GERMANY	Informations und Beratungszentrum für Vergiftungsfälle	Kirrberger Straße, Gebäude 9 D-66421 Homburg/Saar	+49 6841 19240
GERMANY	Beratungstelle bei Vergiftungen, Klinische Toxikologie und Beratungsstelle bei Vergiftungen	Langenbeckstrasse 1 55131 Mainz	+49 6131 19240
GREECE	Poisons Information Centre	11527 Athens	+30 10 779 3777
HUNGARY	Országos Kémiai Biztonsági Intézet (National Institute of Chemical Safety) Egészségügyi Toxikológiai Tájékoztató Szolgálat (Health Toxicological Information Service)	1437 Budapest PO Box 839 1097 Budapest, Nagyvárad tér 2	+36 80 20 11 99
ICELAND	Eitrunarmiðstöðin	Eitrunarmiðstöðin 108 Reykjavik	+354 543 22 22
IRELAND	National Poisons Information Centre	Beaumont Hospital PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2166

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

EU Member State	Officieel adviesorgaan	Adres	Noodnummer
LATVIA	Valsts Toksikoloģijas centra Saindēšanās un zāļu informācijas centrs	2 Hipocrate Street LV 1038 Riga	+371 67 04 24 73
LITHUANIA	Apsinuodijimų kontrolės ir informacijos biuras	Siltnamiu 29 2043 Vilnius	+370 5 236 20 52/+370 687 53 378
MALTA	Medicines & Poisons Info Office	Mater Dei Hospital, Msida MSD 2090 Malta	25450000
NETHERLANDS	Nationaal Vergiftigingen Informatie Centrum National Institute for Public Health and the Environment, NB this service is only available to health professionals	Huispostnummer B.00.118, PO Box 85500 3508 GA Utrecht	+31 30 274 88 88
PORTUGAL	Centro de Informação Antivenenos Instituto Nacional de Emergência Médica (INEM)	Rua Almirante Barroso, 36 1000-013 Lisboa	808 250 143 (for use only in Portugal), +351 21 330 3284
ROMANIA	Biroul pentru Regulamentul Sanitar International si Informare Toxicologica	Str. Dr. Leonte Anastasievici Nr.1-3, Sector 5 50463 Bucuresti	+40 21 318 36 06
SLOVAKIA	Národné toxikologické informačné centrum University Hospital Bratislava	Limbová 5 833 05 Bratislava	+421 2 54 77 4 166
SPAIN	Servicio de Información Toxicológica Instituto Nacional de Toxicología, Departamento de Madrid	Calle Luis Cabrera 9 E-28002 Madrid	+34 91 562 04 20
SWEDEN	Giftinformationscentralen Swedish Poisons Information Centre, Karolinska Hospital	Box 60 500 SE-171 76 Stockholm	+46 8 33 12 31 (International) 112 (National)
SWITZERLAND	Centre Suisse d'Information Toxicologique	Freiestrasse 16 Postfach CH-8028 Zurich	+41 44 251 51 51 (International) 145 (National)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (inhalation:dust,mist) Category 4	H332
Serious eye damage/eye irritation, Category 2	H319
Carcinogenicity, Category 1B	H350
Reproductive toxicity, Category 2	H361
Specific target organ toxicity — Repeated exposure, Category 2	H373
Hazardous to the aquatic environment — Chronic Hazard, Category 3	H412
Full text of H statements : see section 16	

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



GHS07

GHS08

Signal word (CLP)

: Danger

Hazardous ingredients

: Phenolphthalein; Toluene; Benzene

Hazard statements (CLP)

: H319 - Causes serious eye irritation.
H332 - Harmful if inhaled.
H350 - May cause cancer.
H361 - Suspected of damaging fertility or the unborn child.
H373 - May cause damage to organs through prolonged or repeated exposure.
H412 - Harmful to aquatic life with long lasting effects.
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
P264 - Wash hands thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

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 CENTRE/doctor/... if you feel unwell.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

PBT: not yet assessed

vPvB: not yet assessed

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
trans-dichloroethylene (Note C)	(CAS-No.) 156-60-5 (EC-No.) 205-860-2 (EC Index-No.) 602-026-00-3	35 - 55	Flam. Liq. 2, H225 Acute Tox. 4 (Inhalation), H332 Aquatic Chronic 3, H412
Isopropanol	(CAS-No.) 67-63-0 (EC-No.) 200-661-7 (EC Index-No.) 603-117-00-0	5 - 15	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336
Methyl nonafluoroisobutyl ether	(CAS-No.) 163702-08-7 (EC-No.) 605-340-9	1 - 7	Acute Tox. 4 (Inhalation), H332
Methyl nonafluorobutyl ether	(CAS-No.) 163702-07-6 (EC-No.) 605-339-3	1 - 7	Acute Tox. 4 (Inhalation), H332
Toluene	(CAS-No.) 108-88-3 (EC-No.) 203-625-9 (EC Index-No.) 601-021-00-3	0.5 - 1.5	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361d STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 3, H412
Phenolphthalein substance listed as REACH Candidate	(CAS-No.) 77-09-8 (EC-No.) 201-004-7 (EC Index-No.) 604-076-00-1	0.1 - 1	Muta. 2, H341 Carc. 1B, H350 Repr. 2, H361f
Chromium oxide	(CAS-No.) 1308-38-9 (EC-No.) 215-160-9	0.1 - 1	Not classified
Benzene (Note E (obsolete))	(CAS-No.) 71-43-2 (EC-No.) 200-753-7 (EC Index-No.) 601-020-00-8	<0.1	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Muta. 1B, H340 Carc. 1A, H350 STOT RE 1, H372 Asp. Tox. 1, H304

Specific concentration limits:

Name	Product identifier	Specific concentration limits
Phenolphthalein	(CAS-No.) 77-09-8 (EC-No.) 201-004-7 (EC Index-No.) 604-076-00-1	(1 ≤C ≤ 100) Carc. 1B, H350

Note C : Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers.

Note E : Substances with specific effects on human health (see Chapter 4 of Annex VI to Directive 67/548/EEC) that are classified as carcinogenic, mutagenic and/or toxic for reproduction in categories 1 or 2 are ascribed Note E if they are also classified as very toxic (T+), toxic (T) or harmful (Xn). For these substances, the risk phrases R20, R21, R22, R23, R24, R25, R26, R27, R28, R39, R68 (harmful), R48 and R65 and all combinations of these risk phrases shall be preceded by the word 'Also'. (obsolete)

Full text of H-statements: see section 16

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

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

Symptoms/effects	: Suspected of damaging fertility or the unborn child. May cause cancer. May cause damage to organs through prolonged or repeated exposure.
Symptoms/effects after inhalation	: Harmful if inhaled. Dizziness. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.
Symptoms/effects after eye contact	: Causes serious eye irritation.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Carbon dioxide. dry extinguishing powder. Large fires: Water spray. alcohol resistant foam.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Not flammable. Flammable vapours may accumulate in the container. Burning produces irritating, toxic and noxious fumes.
Explosion hazard	: Heat may build pressure, rupturing closed containers.

5.3. Advice for firefighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus. Wear fire/flamm resistant/retardant clothing. EN469.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Avoid contact with skin, eyes and clothing. Do not breathe vapour. Do not breathe aerosol.
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6.1.1. For non-emergency personnel

Protective equipment	: Refer to section 8.2.
Emergency procedures	: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment	: Refer to section 8.2.
Emergency procedures	: Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment	: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up	: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Use only outdoors or in a well-ventilated area. Avoid contact with skin, eyes and clothing. Do not breathe aerosol. Do not breathe vapours.
Hygiene measures	: Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety procedures. Use drum pumps, do not pour.

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Keep only in the original container. Keep container tight closed.
Incompatible products	: Alkali metals. Alkaline earth metals. Powdered metallic salts. Strong bases.
Incompatible materials	: Sources of ignition. Direct sunlight.
Storage temperature	: < 37.8 °C
Heat and ignition sources	: Keep away from heat, sparks and flame.
Storage area	: Store in dry, cool, well-ventilated area.

7.3. Specific end use(s)

Coatings and paints, thinners, paint removers.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Toluene (108-88-3)		
EU	Local name	Toluene
EU	IOELV TWA (mg/m³)	192 mg/m³
EU	IOELV TWA (ppm)	50 ppm
EU	IOELV STEL (mg/m³)	384 mg/m³
EU	IOELV STEL (ppm)	100 ppm
EU	Notes	skin
Austria	MAK (mg/m³)	190 mg/m³ (H,d)
Austria	MAK (ppm)	50 ppm (H,d)
Austria	MAK Short time value (mg/m³)	380 mg/m³ max. 4x15 min./Schicht, (H,d)
Austria	MAK Short time value (ppm)	100 ppm max. 4x15 min./Schicht, (H,d)
Belgium	Limit value (mg/m³)	77 mg/m³
Belgium	Limit value (ppm)	20 ppm
Belgium	Short time value (mg/m³)	384 mg/m³
Belgium	Short time value (ppm)	100 ppm
Belgium	Remark (BE)	D
Czech Republic	Local name	Toluen
Czech Republic	Expoziční limity (PEL) (mg/m³)	200 mg/m³
Czech Republic	Expoziční limity (PEL) (ppm)	53 ppm
Czech Republic	Expoziční limity (NPK-P) (mg/m³)	500 mg/m³
Czech Republic	Expoziční limity (NPK-P) (ppm)	130 ppm
Czech Republic	Remark (CZ)	D
Denmark	Local name	Toluen (Methylbenzen; Phenylmethan)
Denmark	Grænseværdie (langvarig) (mg/m³)	94 mg/m³
Denmark	Grænseværdie (langvarig) (ppm)	25 ppm
Denmark	Grænseværdie (kortvarig) (mg/m³)	188 mg/m³
Denmark	Grænseværdie (kortvarig) (ppm)	50 ppm
Denmark	Anmærkninger (DK)	E (betyder, at stoffet har en EF-grænseværdi); H (betyder, at stoffet kan optages gennem huden)
Finland	Local name	Toluene
Finland	HTP-arvo (8h) (mg/m³)	81 mg/m³
Finland	HTP-arvo (8h) (ppm)	25 ppm
Finland	HTP-arvo (15 min)	380 mg/m³
Finland	HTP-arvo (15 min) (ppm)	100 ppm
Finland	Huomautus (FI)	iho, melu
France	Local name	Toluène
France	VME (mg/m³)	76.8 mg/m³

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

Toluene (108-88-3)		
France	VME (ppm)	20 ppm
France	VLE (mg/m³)	384 mg/m³
France	VLE (ppm)	100 ppm
France	Note (FR)	Valeurs réglementaires contraignantes; substance classée toxique pour la reproduction de catégorie 2; risque de pénétration percutanée
Germany	TRGS 900 Local name	Toluol
Germany	Occupational exposure limit value (mg/m³)	190 mg/m³
Germany	Occupational exposure limit value (ppm)	50 ppm
Germany	TRGS 900 Remark	DFG,EU,H,Y
Germany	TRGS 903 Biological limit value	3 mg/l o-Kresol (Urin; bei Langzeitexposition/Expositionsende bzw. Schichtende) 1 mg/l Toluol (Blut; Expositionsende bzw. Schichtende)
Germany	TRGS 910 Acceptable concentration notes	
Hungary	Local name	TOLUOL
Hungary	AK-érték	190 mg/m³
Hungary	CK-érték	380 mg/m³
Hungary	Megjegyzések (HU)	b, i; II.2.
Ireland	OEL (8 hours ref) (mg/m³)	192 mg/m³
Ireland	OEL (8 hours ref) (ppm)	50 ppm
Ireland	OEL (15 min ref) (mg/m³)	384 mg/m³
Ireland	OEL (15 min ref) (ppm)	100 ppm
Italy	Local name	Toluene
Italy	OEL TWA (mg/m³)	192 mg/m³
Italy	OEL TWA (ppm)	50 ppm
Latvia	Local name	Toluols (metilbenzols)
Latvia	OEL TWA (mg/m³)	50 mg/m³
Latvia	OEL TWA (ppm)	14 ppm
Latvia	OEL STEL (mg/m³)	150 mg/m³
Latvia	OEL STEL (ppm)	40 ppm
Lithuania	IPRV (mg/m³)	192 mg/m³
Lithuania	IPRV (ppm)	50 ppm
Lithuania	TPRV (mg/m³)	384 mg/m³
Lithuania	TPRV (ppm)	100 ppm
Lithuania	Remark (LT)	O
Netherlands	Local name	Tolueen
Netherlands	Grenswaarde TGG 8H (mg/m³)	150 mg/m³
Netherlands	Grenswaarde TGG 15MIN (mg/m³)	384 mg/m³
Poland	Local name	Toluen
Poland	NDS (mg/m³)	100 mg/m³
Poland	NDSch (mg/m³)	200 mg/m³
Portugal	Local name	Tolueno
Portugal	OEL TWA (ppm)	20 ppm
Slovakia	Local name	Toluén
Slovakia	NPHV (priemerná) (mg/m³)	192 mg/m³ (K)

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

Toluene (108-88-3)		
Slovakia	NPHV (priemerná) (ppm)	50 ppm (K) 600 ppm (Toluén) 1.5 ppm (O-krezol) 2401 ppm (Kyselina hippurová)
Slovakia	OEL STEL (mg/m³)	384 mg/m³
Slovakia	OEL STEL (ppm)	100 ppm
Slovenia	Local name	toluen
Slovenia	OEL TWA (mg/m³)	192 mg/m³
Slovenia	OEL TWA (ppm)	50 ppm
Slovenia	OEL STEL (mg/m³)	384 mg/m³
Slovenia	OEL STEL (ppm)	100 ppm
Spain	Local name	Tolueno
Spain	VLA-ED (mg/m³)	192 mg/m³
Spain	VLA-ED (ppm)	50 ppm
Spain	VLA-EC (mg/m³)	384 mg/m³
Spain	VLA-EC (ppm)	100 ppm
Spain	Notes	Vía dérmica (Indica que, en las exposiciones a esta sustancia, la aportación por la vía cutánea puede resultar significativa para el contenido corporal total si no se adoptan medidas para prevenir la absorción. En estas situaciones, es aconsejable la utilización del control biológico para poder cuantificar la cantidad global absorbida del contaminante. Para más información véase el Apartado 5 de este documento), VLB® (Agente químico que tiene Valor Límite Biológico específico en este documento), VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo. Todos estos agentes químicos figuran al menos en una de las directivas de valores límite indicativos publicadas hasta ahora (ver Anexo C. Bibliografía). Los estados miembros disponen de un tiempo fijado en dichas directivas para su transposición a los valores límites de cada país miembro. Una vez adoptados, estos valores tienen la misma validez que el resto de los valores adoptados por el país), r (Esta sustancia tiene establecidas restricciones a la fabricación, la comercialización o el uso en los términos especificados en el "Reglamento (CE) nº 1907/2006 sobre Registro, Evaluación, Autorización y Restricción de sustancias y preparados químicos" (REACH) de 18 de diciembre de 2006 (DOUE L 369 de 30 de diciembre de 2006). Las restricciones de una sustancia pueden aplicarse a todos los usos o sólo a usos concretos. El anexo XVII del Reglamento REACH contiene la lista de todas las sustancias restringidas y especifica los usos que se han restringido).
Sweden	Local name	Toluen
Sweden	nivågränsvärde (NVG) (mg/m³)	192 mg/m³
Sweden	nivågränsvärde (NVG) (ppm)	50 ppm
Sweden	kortidsvärde (KTV) (mg/m³)	384 mg/m³
Sweden	kortidsvärde (KTV) (ppm)	100 ppm
Sweden	Anmärkning (SE)	B (Ämnet kan orsaka hörselskada Exponering för ämnet nära det befintliga yrkeshygieniska gränsvärdet och vid samtidig exponering för buller nära insatsvärdet 80 dB kan orsaka hörselskada); H (Ämnet kan lätt upptas genom huden Det föreskrivna gränsvärdet bedöms ge tillräckligt skydd endast under förutsättning att huden är skyddad mot exponering för ämnet ifråga)
United Kingdom	WEL TWA (mg/m³)	191 mg/m³
United Kingdom	WEL TWA (ppm)	50 ppm

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

Toluene (108-88-3)		
United Kingdom	WEL STEL (mg/m³)	384 mg/m³
United Kingdom	WEL STEL (ppm)	100 ppm
United Kingdom	Remark (WEL)	(Sk)
Norway	Local name	Toluen
Norway	Grenseverdier (AN) (mg/m³)	94 mg/m³
Norway	Grenseverdier (AN) (ppm)	25 ppm
Norway	Merknader (NO)	H (Kjemikalier som kan tas opp gjennom huden); E (EU har en veiledende grenseverdi for stoffet)
Switzerland	VME (mg/m³)	190 mg/m³
Switzerland	MAK (ppm)	50 ppm 0.6 ppm toluolo (sangue; fine dell'esposizione / del turno) 0.5 ppm o-cresolo (urina; in caso di esposizione per molto tempo/fine dell'esposizione / del turno)
Switzerland	KZGW (mg/m³)	760 mg/m³ max. 4x15 min./turno
Switzerland	KZGW (ppm)	200 ppm max. 4x15 min./turno

Chromium oxide (1308-38-9)		
Germany	TRGS 910 Acceptable concentration notes	
Latvia	Local name	Hroma(III)oksīds, pēc hroma
Latvia	OEL TWA (mg/m³)	1 mg/m³

trans-dichloroethylene (156-60-5)		
Austria	MAK (mg/m³)	790 mg/m³
Austria	MAK (ppm)	200 ppm
Austria	MAK Short time value (mg/m³)	3160 mg/m³ max. 4x15 min./Schicht
Austria	MAK Short time value (ppm)	800 ppm max. 4x15 min./Schicht
Denmark	Local name	trans-Dichlorethen
Denmark	Grænseværdie (langvarig) (mg/m³)	790 mg/m³
Denmark	Grænseværdie (langvarig) (ppm)	200 ppm
Denmark	Grænseværdie (kortvarig) (mg/m³)	1580 mg/m³
Denmark	Grænseværdie (kortvarig) (ppm)	400 ppm
Denmark	Regulatory reference	BEK nr 655 af 31/05/2018
Finland	Local name	trans-Dikloorietyleeni
Finland	HTP-arvo (8h) (mg/m³)	800 mg/m³
Finland	HTP-arvo (8h) (ppm)	200 ppm
Finland	HTP-arvo (15 min)	1000 mg/m³
Finland	HTP-arvo (15 min) (ppm)	250 ppm
Finland	Regulatory reference	HTP-ARVOT 2018 (Sosiaali- ja terveystieteiden ministeriö)
Germany	TRGS 910 Acceptable concentration notes	
Poland	Local name	1,2-Dichloroeten – izomery trans-
Poland	NDS (mg/m³)	700 mg/m³
Poland	Regulatory reference	Dz. U. 2018 poz. 1286
Portugal	Local name	1,2-Dicloroetileno, todos os isómeros
Portugal	OEL TWA (ppm)	200 ppm
Slovakia	Regulatory reference	Norma Portuguesa NP 1796:2014
Slovenia	Local name	trans-dikloroeten

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

trans-dichloroethylene (156-60-5)		
Slovenia	OEL TWA (mg/m ³)	800 mg/m ³
Slovenia	OEL TWA (ppm)	200 ppm
Slovenia	OEL STEL (mg/m ³)	1600 mg/m ³
Slovenia	OEL STEL (ppm)	400 ppm
Slovenia	Regulatory reference	Uradni list RS, št. 78/2018 z dne 4.12.2018
Switzerland	VME (mg/m ³)	790 mg/m ³
Switzerland	MAK (ppm)	200 ppm
Switzerland	KZGW (mg/m ³)	1580 mg/m ³
Switzerland	KZGW (ppm)	400 ppm

Isopropanol (67-63-0)		
Austria	MAK (mg/m ³)	500 mg/m ³
Austria	MAK (ppm)	200 ppm
Austria	MAK Short time value (mg/m ³)	2000 mg/m ³ max. 4x15 min./Schicht
Austria	MAK Short time value (ppm)	800 ppm max. 4x15 min./Schicht
Belgium	Limit value (mg/m ³)	500 mg/m ³
Belgium	Limit value (ppm)	200 ppm
Belgium	Short time value (mg/m ³)	1000 mg/m ³
Belgium	Short time value (ppm)	400 ppm
Czech Republic	Local name	iso-Propanol
Czech Republic	Expoziční limity (PEL) (mg/m ³)	500 mg/m ³
Czech Republic	Expoziční limity (PEL) (ppm)	203.5 ppm
Czech Republic	Expoziční limity (NPK-P) (mg/m ³)	1000 mg/m ³
Czech Republic	Expoziční limity (NPK-P) (ppm)	407 ppm
Czech Republic	Remark (CZ)	I
Denmark	Local name	Isopropylalkohol (Isopropanol; 2-Propanol; sec-Propylalkohol)
Denmark	Grænseværdie (langvarig) (mg/m ³)	490 mg/m ³
Denmark	Grænseværdie (langvarig) (ppm)	200 ppm
Denmark	Grænseværdie (kortvarig) (mg/m ³)	980 mg/m ³
Denmark	Grænseværdie (kortvarig) (ppm)	400 ppm
Finland	Local name	2-Propanoli
Finland	HTP-arvo (8h) (mg/m ³)	500 mg/m ³
Finland	HTP-arvo (8h) (ppm)	200 ppm
Finland	HTP-arvo (15 min)	620 mg/m ³
Finland	HTP-arvo (15 min) (ppm)	250 ppm
France	Local name	Alcool isopropylique
France	VLE (mg/m ³)	980 mg/m ³
France	VLE (ppm)	400 ppm
Germany	TRGS 900 Local name	Propan-2-ol
Germany	Occupational exposure limit value (mg/m ³)	500 mg/m ³
Germany	Occupational exposure limit value (ppm)	200 ppm
Germany	TRGS 903 Biological limit value	50 mg/l Aceton (Blut; Expositionsende bzw. Schichtende)
Germany	TRGS 910 Acceptable concentration notes	

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

Isopropanol (67-63-0)		
Hungary	Local name	IZOPROPIL-ALKOHOL
Hungary	AK-érték	500 mg/m ³
Hungary	CK-érték	2000 mg/m ³
Ireland	OEL (8 hours ref) (ppm)	200 ppm
Ireland	OEL (15 min ref) (ppm)	400 ppm
Ireland	Notes (IE)	Sk
Latvia	Local name	Izopropanols (2-propanols, izopropilspirts, 1-metil-1-etanols)
Latvia	OEL TWA (mg/m ³)	350 mg/m ³
Latvia	OEL STEL (mg/m ³)	600 mg/m ³
Lithuania	IPRV (mg/m ³)	350 mg/m ³
Lithuania	IPRV (ppm)	150 ppm
Lithuania	TPRV (mg/m ³)	600 mg/m ³
Lithuania	TPRV (ppm)	250 ppm
Netherlands	Grenswaarde TGG 8H (mg/m ³)	650 mg/m ³
Netherlands	Grenswaarde TGG 8H (ppm)	250 ppm
Poland	Local name	Propan-2-ol (izopropylowy alkohol)
Poland	NDS (mg/m ³)	900 mg/m ³
Poland	NDSch (mg/m ³)	1200 mg/m ³
Portugal	Local name	2-Propanol (isopropanol ou álcool isopropílico)
Portugal	OEL TWA (ppm)	200 ppm
Portugal	OEL STEL (ppm)	400 ppm
Slovakia	Local name	Izopropylalkohol (propán-2-ol)
Slovakia	NPHV (priemerná) (mg/m ³)	500 mg/m ³
Slovakia	NPHV (priemerná) (ppm)	200 ppm
Slovakia	OEL STEL (mg/m ³)	1000 mg/m ³
Slovakia	OEL STEL (ppm)	400 ppm
Slovenia	Local name	propan-2-ol (izopropilalkohol; izopropanol)
Slovenia	OEL TWA (mg/m ³)	500 mg/m ³
Slovenia	OEL TWA (ppm)	200 ppm
Slovenia	OEL STEL (mg/m ³)	2000 mg/m ³
Slovenia	OEL STEL (ppm)	800 ppm
Spain	Local name	Isopropanol (Alcohol isopropílico)
Spain	VLA-ED (mg/m ³)	500 mg/m ³ VLB, s
Spain	VLA-ED (ppm)	200 ppm VLB, s 40 ppm F, I "(Acetona en orina; Final de la semana, laboral 1)"
Spain	VLA-EC (mg/m ³)	1000 mg/m ³ VLB, s
Spain	VLA-EC (ppm)	400 ppm VLB, s
Sweden	Local name	Isopropanol
Sweden	nivågränsvärde (NVG) (mg/m ³)	350 mg/m ³
Sweden	nivågränsvärde (NVG) (ppm)	150 ppm
Sweden	kortidsvärde (KTV) (mg/m ³)	600 mg/m ³
Sweden	kortidsvärde (KTV) (ppm)	250 ppm
United Kingdom	WEL TWA (mg/m ³)	999 mg/m ³
United Kingdom	WEL TWA (ppm)	400 ppm

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

Isopropanol (67-63-0)		
United Kingdom	WEL STEL (mg/m ³)	1250 mg/m ³
United Kingdom	WEL STEL (ppm)	500 ppm
Norway	Local name	2-propanol (Isopropanol)
Norway	Grenseverdier (AN) (mg/m ³)	245 mg/m ³
Norway	Grenseverdier (AN) (ppm)	100 ppm
Switzerland	VME (mg/m ³)	500 mg/m ³
Switzerland	MAK (ppm)	200 ppm 25 ppm acetone (urina; fine dell'esposizione / del turno) 25 ppm acetone (sangue; fine dell'esposizione / del turno)
Switzerland	KZGW (mg/m ³)	1000 mg/m ³ max. 4x15 min./turno
Switzerland	KZGW (ppm)	400 ppm max. 4x15 min./turno

Benzene (71-43-2)		
EU	Local name	Benzene
EU	IOELV TWA (mg/m ³)	3.25 mg/m ³
EU	IOELV TWA (ppm)	1 ppm
EU	Notes	Skin (Substantial contribution to the total body burden via dermal exposure possible)
EU	European BLV	28 µg/l Parameter: benzene - Medium: blood - Sampling time: immediately end of shift 46 µg/g creatinine Parameter: phenylmercapturic - Medium: urine - Sampling time: end of exposure/shift
EU	Regulatory reference	DIRECTIVE (EU) 2019/130 (amending Directive 2004/37/EC)
Austria	MAK (mg/m ³)	3.2 mg/m ³ (H, III A1)
Austria	MAK (ppm)	1 ppm (H, III A1)
Austria	MAK Short time value (mg/m ³)	12.8 mg/m ³ (H, III A1) max. 4x15 min./Schicht
Austria	MAK Short time value (ppm)	4 ppm (H, III A1) max. 4x15 min./Schicht
Belgium	Limit value (mg/m ³)	3.25 mg/m ³
Belgium	Limit value (ppm)	1 ppm
Belgium	Remark (BE)	C, D
Czech Republic	Local name	Benzen
Czech Republic	Expoziční limity (PEL) (mg/m ³)	3 mg/m ³
Czech Republic	Expoziční limity (PEL) (ppm)	0.94 ppm
Czech Republic	Expoziční limity (NPK-P) (mg/m ³)	10 mg/m ³
Czech Republic	Expoziční limity (NPK-P) (ppm)	3.1 ppm
Czech Republic	Remark (CZ)	D (při expozici se významně uplatňuje pronikání látky kůží), I (dráždí sliznice (oči, dýchací cesty) resp. kůži), P (u látky nelze vyloučit závažné pozdní účinky)
Czech Republic	Czech Republic - BLV	0.05 mg/g creatinine Ukazatel: S-Fenylmerkapturová kyselina - Biološki uzorak: moči - Doba odběru: konec směny 0.024 µmol/mmol Creatinine Ukazatel: S-Fenylmerkapturová kyselina - Biološki uzorak: moči - Doba odběru: konec směny 1.5 mg/g creatinine Ukazatel: t,t-Mukonová kyselina - Biološki uzorak: moči - Doba odběru: konec směny 1.2 µmol/mmol Creatinine Ukazatel: t,t-Mukonová kyselina - Biološki uzorak: moči - Doba odběru: konec směny
Czech Republic	Regulatory reference	Nařízení vlády č. 361/2007 Sb. (zpracovány změny č. 246/2018 Sb.)

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

Benzene (71-43-2)		
Denmark	Local name	Benzen
Denmark	Grænseværdie (langvarig) (mg/m³)	1.6 mg/m³
Denmark	Grænseværdie (langvarig) (ppm)	0.5 ppm
Denmark	Grænseværdie (kortvarig) (mg/m³)	3.2 mg/m³
Denmark	Grænseværdie (kortvarig) (ppm)	1 ppm
Denmark	Anmærkninger (DK)	E (betyder, at stoffet har en EF-grænseværdi); H (betyder, at stoffet kan optages gennem huden); K (betyder, at stoffet anses for at kunne være kræftfremkaldende)
Denmark	Regulatory reference	BEK nr 655 af 31/05/2018
Finland	Local name	Bentseeni
Finland	HTP-arvo (8h) (mg/m³)	3.25 mg/m³
Finland	HTP-arvo (8h) (ppm)	1 ppm
Finland	Huomautus (FI)	iho, Valtioneuvosto on työturvallisuuslain nojalla antamissaan päätöksissä ja asetuksissa määrännyt työpaikan ilman epäpuhtauksille joukon sitovia raja-arvoja. Soveltamisala: Kaikki työt. Viite: Valtioneuvoston asetus työhön liittyvän syöpävaaran torjunnasta (716/2000), Bentseeni voi imeytyä elimistöön hengitysteitse, ihon kautta tai nieltynä. Se saattaa aiheuttaa syöpää. Bentseeni saattaa aiheuttaa myös perimävaurioita, joten siihen tulee suhtautua siten kuin se aiheuttaisi periytyviä mutaatioita ihmisen sukusoluissa. Se vahingoittaa elimiä a voi tappaa nieltynä ja joutuessaan iholle. Lisäksi se ärsyttää silmiä ja ihoa. Haju ei varoita terveysvaarasta.
Finland	Regulatory reference	HTP-ARVOT 2018 (Sosiaali- ja terveysministeriö)
France	Local name	Benzène
France	VME (mg/m³)	3.25 mg/m³
France	VME (ppm)	1 ppm
France	Note (FR)	Valeurs réglementaires contraignantes; risque de pénétration percutanée
France	Regulatory reference	Article R4412-149 du Code du travail (réf.: INRS ED 984, 2016; Décret n° 2019-1487)
Germany	TRGS 910 Acceptable concentration notes	
Hungary	Local name	BENZOL
Hungary	MK-érték	3 mg/m³
Hungary	Megjegyzések (HU)	k (rákkeltő), b (Bőrön át is felszívódik), i (ingerlő anyag, amely izgatja a bőrt, nyálkahártyát, szemet vagy mindhármát); EU99 (99/38/EK irányelvben közölt érték), BEM (biológiai expozíciós mutató)
Hungary	Regulatory reference	25/2000. (IX. 30.) EüM–SZCSM együttes rendelet a munkahelyek kémiai biztonságáról
Ireland	OEL (8 hours ref) (mg/m³)	3 mg/m³
Ireland	OEL (8 hours ref) (ppm)	1 ppm
Ireland	Notes (IE)	Sk, C1
Latvia	Local name	Benzols
Latvia	OEL TWA (mg/m³)	3.25 mg/m³
Latvia	OEL TWA (ppm)	1 ppm
Latvia	Latvia - BLV	25 µg/g creatinine Urīnā maiņas beigās nosaka fenolu
Latvia	Regulatory reference	Ministru kabineta 2007.gada 15.maija noteikumiem Nr.325
Lithuania	IPRV (mg/m³)	3.25 mg/m³

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

Benzene (71-43-2)		
Lithuania	IPRV (ppm)	1 ppm
Lithuania	TPRV (mg/m ³)	19 mg/m ³
Lithuania	TPRV (ppm)	6 ppm
Lithuania	Remark (LT)	K O; IPRV 3,25mg/m ³ (1 ppm) galios nuo 2003 06 27 (pagal direktyvos 97/42 EC 2 str. 1 dalyje nurodytą datą).
Netherlands	Local name	Benzeen
Netherlands	Grenswaarde TGG 8H (mg/m ³)	3.25 mg/m ³
Netherlands	Remark (MAC)	H (Huidopname) Stoffen die relatief gemakkelijk door de huid kunnen worden opgenomen, hetgeen een substantiële bijdrage kan betekenen aan de totale inwendige blootstelling, hebben in de lijst een H-aanduiding. Bij deze stoffen moeten naast maatregelen tegen inademing ook adequate maatregelen ter voorkoming van huidcontact worden genomen.
Netherlands	Regulatory reference	Arbeidsomstandighedenregeling 2018
Poland	Local name	Benzen
Poland	NDS (mg/m ³)	1.6 mg/m ³
Poland	Remark (PL)	Skóra (Oznakowanie substancji notacją „skóra” oznacza, że wchłanianie substancji przez skórę może być tak samo istotne jak przy narażeniu drogą oddechową)
Poland	Regulatory reference	Dz. U. 2018 poz. 1286
Portugal	Local name	Benzeno
Portugal	OEL TWA (ppm)	0.5 ppm
Portugal	OEL STEL (ppm)	2.5 ppm
Portugal	Portugal (BEI)	25 µg/g creatinine Parâmetro: Ácido s-fenilmercaptúrico - Meio: urina - Momento da amostragem: Fim do turno - Notação: Vb (Valor basal) 500 µg/g creatinine Parâmetro: Ácido t,t-mucónico - Meio: urina - Momento da amostragem: Fim do turno - Notação: Vb (Valor basal)
Slovakia	Regulatory reference	Norma Portuguesa NP 1796:2014
Slovakia	Local name	benzén
Slovakia	NPHV (priemerná) (mg/m ³)	1 mg/m ³
Slovakia	NPHV (priemerná) (ppm)	3.25 ppm
Slovakia	Upozornenie (SK)	Kategória karcinogénov 1A – Dokázaný karcinogén pre ľudí; Kategória karcinogénov 1B – Mutagén cicavčích zárodočných buniek; Prienik cez pokožku (Niektoré látky môžu prenikať ľahko cez pokožku a spôsobovať smrteľné otravy často bez varovných príznakov)
Slovakia	Regulatory reference	Nariadenie vlády č. 83/2015 Z. z.
Slovenia	Local name	benzen
Slovenia	OEL TWA (mg/m ³)	3.25 mg/m ³
Slovenia	OEL TWA (ppm)	1 ppm
Slovenia	OEL STEL (mg/m ³)	13 mg/m ³
Slovenia	OEL STEL (ppm)	4 ppm
Spain	Local name	Benceno
Spain	VLA-ED (mg/m ³)	3.25 mg/m ³
Spain	VLA-ED (ppm)	1 ppm

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

Benzene (71-43-2)		
Spain	Notes	C1A (Carcinógeno para el hombre), M1B (Sustancias de las que se considera que inducen mutaciones hereditarias en las células germinales humanas), vía dérmica (Indica que, en las exposiciones a esta sustancia, la aportación por la vía cutánea puede resultar significativa para el contenido corporal total si no se adoptan medidas para prevenir la absorción. En estas situaciones, es aconsejable la utilización del control biológico para poder cuantificar la cantidad global absorbida del contaminante), VLB® (Agente químico que tiene Valor Límite Biológico), v (Real Decreto 1124/2000, de 16 de junio (BOE nº 145 de 17 de junio de 2000), por el que se modifica el Real Decreto 665/1997, de 12 de mayo, sobre la protección de los trabajadores contra los riesgos relacionados con la exposición a agentes cancerígenos durante el trabajo), r (Esta sustancia tiene establecidas restricciones a la fabricación, la comercialización o el uso en los términos especificados en el "Reglamento (CE) nº 1907/2006 sobre Registro, Evaluación, Autorización y Restricción de sustancias y preparados químicos" (REACH) de 18 de diciembre de 2006 (DOUE L 369 de 30 de diciembre de 2006). Las restricciones de una sustancia pueden aplicarse a todos los usos o sólo a usos concretos. El anexo XVII del Reglamento REACH contiene la lista de todas las sustancias restringidas y especifica los usos que se han restringido).
Spain		0.045 mg/g creatinine Parámetro: Ácido S-Fenilmercaptúrico - Medio: Orina - Momento de muestreo: Final de la jornada laboral 2 mg/l Parámetro: Ácido t,t-Mucónico - Medio: Orina - Momento de muestreo: Final de la jornada laboral
Spain	Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2019. INSHT
Sweden	Local name	Bensen
Sweden	nivågränsvärde (NVG) (mg/m³)	1.5 mg/m³
Sweden	nivågränsvärde (NVG) (ppm)	0.5 ppm
Sweden	kortidsvärde (KTV) (mg/m³)	9 mg/m³
Sweden	kortidsvärde (KTV) (ppm)	3 ppm
Sweden	Anmärkning (SE)	C (Ämnet är cancerframkallande. Risk för cancer finns även vid annan exponering än via inandning. För vissa cancerframkallande ämnen som inte har gränsvärden gäller förbud eller tillståndskrav enligt föreskrifterna om kemiska arbetsmiljörisker); H (Ämnet kan lätt upptas genom huden. Det föreskrivna gränsvärdet bedöms ge tillräckligt skydd endast under förutsättning att huden är skyddad mot exponering för ämnet ifråga)
Sweden	Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)
United Kingdom	WEL TWA (mg/m³)	3.25 mg/m³
United Kingdom	WEL TWA (ppm)	1 ppm
United Kingdom	Remark (WEL)	Carc, Sk
Norway	Local name	Benzen
Norway	Grenseverdier (AN) (mg/m³)	3 mg/m³
Norway	Grenseverdier (AN) (ppm)	1 ppm
Norway	Merknader (NO)	G (EU har fastsatt en bindende grenseverdi for stoffet); H (Kjemikalier som kan tas opp gjennom huden); K (Kjemikalier som skal betraktes som kreftfremkallende)
Norway	Regulatory reference	FOR-2018-08-21-1255
Switzerland	VME (mg/m³)	1.6 mg/m³

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

Benzene (71-43-2)

Switzerland	MAK (ppm)	0.5 ppm 25 ppm S-Phenylmerkaptursäure, Urin, b, 500 ppm t,t-Mukonsäure, Urin, b
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8.2. Exposure controls

Appropriate engineering controls:

Avoid splashing. Avoid creating mist or spray. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide local exhaust or general room ventilation.

Personal protective equipment:

Avoid all unnecessary exposure.

Hand protection:

Wear suitable gloves resistant to chemical penetration. neoprene/butyl rubber. EN 374

Eye protection:

Safety glasses with side guards should be worn to prevent injury from airborne particles and/or other eye contact with this product. EN 166

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of inadequate ventilation wear respiratory protection. Supplied air respirator if working in a confined area. EN 14594. Handling large quantities of product: Wear a self contained breathing apparatus. EN 137. EN 145

Environmental exposure controls:

Prevent leakage or spillage.

Other information:

Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Opaque liquid.
Colour	: Green.
Odour	: mild. characteristic.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: > 100 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: 1000 mm²/s
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Alkali metals. Alkaline earth metals. Powdered metallic salts. Strong bases.

10.6. Hazardous decomposition products

None under normal use. Under fire conditions, hazardous fumes will be present. Fluorinated hydrocarbons. Hydrogen fluoride. Carbon oxides (CO, CO₂). hydrogen chloride. Carbonyl fluoride.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified (Based on available data, the classification criteria are not met)

Acute toxicity (dermal) : Not classified (Based on available data, the classification criteria are not met)

Acute toxicity (inhalation) : Harmful if inhaled.

ATE (dust,mist)	2.314 mg/l/4h
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Phenolphthalein (77-09-8)

LD50 oral rat	> 2000 mg/kg bodyweight
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Toluene (108-88-3)

LD50 oral rat	5580 mg/kg EU Method B.
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LC50 inhalation rat (mg/l)	> 20 mg/l/4h OECD Guideline 403
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Chromium oxide (1308-38-9)

LD50 oral rat	> 15000 mg/kg
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LC50 inhalation rat (mg/l)	> 5.41 mg/l/4h
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LC50 inhalation rat (Dust/Mist - mg/l/4h)	> 5.1 mg/l/4h
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trans-dichloroethylene (156-60-5)

LD50 oral rat	7902 mg/kg
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LD50 dermal rabbit	> 5000 mg/kg
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LC50 inhalation rat (mg/l)	95.4 mg/l/4h
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LC50 inhalation rat (Vapours - mg/l/4h)	24100 mg/l/4h
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Isopropanol (67-63-0)

LD50 oral rat	5840 mg/kg
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LD50 dermal rabbit	16.4 ml/kg
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LC50 inhalation rat (ppm)	> 10000 ppm/4h
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Benzene (71-43-2)

LD50 oral rat	5970 mg/kg OECD Guideline 401 (Acute Oral Toxicity)
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LD50 dermal rabbit	> 9.4 mg/kg OECD Guideline 402 (Acute Dermal Toxicity)
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LC50 inhalation rat (mg/l)	43.7 mg/l/4h OECD Guideline 403 (Acute Inhalation Toxicity)
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Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)

Serious eye damage/irritation : Causes serious eye irritation.

Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)

Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)

Carcinogenicity : May cause cancer.

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

Phenolphthalein (77-09-8)

IARC group	2B - Possibly carcinogenic to humans
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Toluene (108-88-3)

IARC group	3 - Not classifiable
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Isopropanol (67-63-0)

IARC group	3 - Not classifiable
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Benzene (71-43-2)

IARC group	1 - Carcinogenic to humans
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Reproductive toxicity	: Suspected of damaging fertility or the unborn child.
STOT-single exposure	: Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure	: May cause damage to organs through prolonged or repeated exposure.

Toluene (108-88-3)

LOAEC (inhalation, rat, gas, 90 days)	1250 ppmv/6h/day
NOAEL (oral, rat, 90 days)	625 mg/kg bodyweight/day EU Method B.26.
NOAEC (inhalation, rat, gas, 90 days)	300 ppmv/6h/day OECD Guideline 453

Benzene (71-43-2)

LOAEL (oral, rat, 90 days)	25 mg/kg bodyweight/day OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
NOAEL (oral, rat, 90 days)	100 mg/kg bodyweight/day OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
NOAEC (inhalation, rat, gas, 90 days)	30 ppmv/6h/day OECD Guideline 412 / 413

Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)
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Tempilaq® Advanced 400 °F (204 °C)

Viscosity, kinematic	1000 mm²/s
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SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Harmful to aquatic life with long lasting effects.

Phenolphthalein (77-09-8)

EC50 crustacea	> 100 mg/l
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Toluene (108-88-3)

LC50 fish 1	5.5 mg/l
EC50 Daphnia 2	3.78 mg/l
ErC50 (algae)	134 mg/l
LOEC (chronic)	2.77 mg/l
NOEC chronic fish	1.39 mg/l
NOEC chronic crustacea	0.74 mg/l

Chromium oxide (1308-38-9)

LC50 fish 1	> 10000 mg/l
NOEC (chronic)	1000 mg/l

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

trans-dichloroethylene (156-60-5)

LC50 fish 1	135 mg/l 96 h
EC50 crustacea	220 mg/l 48 h

Isopropanol (67-63-0)

LC50 fish 1	10000 mg/l
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Benzene (71-43-2)

LC50 fish 1	5.3 mg/l OECD Guideline 203 (Fish, Acute Toxicity Test)
EC50 crustacea	10 mg/l OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
ErC50 (algae)	100 mg/l OECD Guideline 201 (Alga, Growth Inhibition Test)
LOEC (chronic)	1.6 mg/l 32 d
NOEC chronic crustacea	3 mg/l

12.2. Persistence and degradability

Tempilaq® Advanced 400 °F (204 °C)

Persistence and degradability	May cause long-term adverse effects in the environment.
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Toluene (108-88-3)

Persistence and degradability	Readily biodegradable.
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trans-dichloroethylene (156-60-5)

Persistence and degradability	Readily biodegradable.
Biodegradation	95 % 28 d

Isopropanol (67-63-0)

Persistence and degradability	Readily biodegradable.
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Benzene (71-43-2)

Persistence and degradability	Readily biodegradable.
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12.3. Bioaccumulative potential

Tempilaq® Advanced 400 °F (204 °C)

Bioaccumulative potential	Not established.
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Phenolphthalein (77-09-8)

Log Kow	2.4
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Toluene (108-88-3)

Bioconcentration factor (BCF REACH)	90
Log Kow	2.73

trans-dichloroethylene (156-60-5)

Log Pow	2.06
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Isopropanol (67-63-0)

Bioaccumulative potential	Not expected to bioaccumulate.
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Benzene (71-43-2)

BCF fish 1	3.5 – 4.4
Bioconcentration factor (BCF REACH)	0

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

Log Pow	1.83
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12.4. Mobility in soil

Tempilaq® Advanced 400 °F (204 °C)	
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Ecology - soil	Not established.
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12.5. Results of PBT and vPvB assessment

Tempilaq® Advanced 400 °F (204 °C)	
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PBT: not yet assessed

vPvB: not yet assessed

Component	
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Phenolphthalein (77-09-8)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
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Toluene (108-88-3)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
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12.6. Other adverse effects

Additional information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations	: Do not dispose of waste into sewer.
Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	: Avoid release to the environment.
European List of Waste (LoW) code	: For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used.
HP Code	: HP10 - "Toxic for reproduction:" waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring. HP14 - "Ecotoxic:" waste which presents or may present immediate or delayed risks for one or more sectors of the environment HP4 - "Irritant — skin irritation and eye damage:" waste which on application can cause skin irritation or damage to the eye. HP5 - "Specific Target Organ Toxicity (STOT)/Aspiration Toxicity:" waste which can cause specific target organ toxicity either from a single or repeated exposure, or which cause acute toxic effects following aspiration. HP6 - "Acute Toxicity:" waste which can cause acute toxic effects following oral or dermal administration, or inhalation exposure. HP7 - "Carcinogenic:" waste which induces cancer or increases its incidence

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR)	: Not regulated.
UN-No. (IMDG)	: Not regulated.
UN-No. (IATA)	: Not regulated.
UN-No. (ADN)	: Not regulated.
UN-No. (RID)	: Not regulated.

14.2. UN proper shipping name

Proper Shipping Name (ADR)	: Not regulated.
Proper Shipping Name (IMDG)	: Not regulated.
Proper Shipping Name (IATA)	: Not regulated.
Proper Shipping Name (ADN)	: Not regulated.
Proper Shipping Name (RID)	: Not regulated.

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	: Not regulated.
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IMDG

Transport hazard class(es) (IMDG)	: Not regulated.
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IATA

Transport hazard class(es) (IATA)	: Not regulated.
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ADN

Transport hazard class(es) (ADN)	: Not regulated.
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Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

RID

Transport hazard class(es) (RID) : Not regulated.

14.4. Packing group

Packing group (ADR) : Not regulated.

Packing group (IMDG) : Not regulated.

Packing group (IATA) : Not regulated.

Packing group (ADN) : Not regulated.

Packing group (RID) : Not regulated.

14.5. Environmental hazards

Dangerous for the environment : No

Marine pollutant : No

Other information : No supplementary information available

14.6. Special precautions for user

Overland transport

Not regulated.

Transport by sea

Not regulated.

Air transport

Not regulated.

Inland waterway transport

Not regulated.

Rail transport

Not regulated.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

5. Benzene	Benzene
28. Substances which are classified as carcinogen category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and are listed in Appendix 1 or Appendix 2, respectively.	Tempilaq® Advanced 400 °F (204 °C) ; Phenolphthalein ; Benzene
29. Substances which are classified as germ cell mutagen category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and are listed in Appendix 3 or Appendix 4, respectively.	Benzene
3(a) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F	Toluene ; Benzene ; trans-dichloroethylene ; Isopropanol
3(b) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10	Tempilaq® Advanced 400 °F (204 °C) ; Toluene ; Benzene ; Methyl nonafluoroisobutyl ether ; Methyl nonafluorobutyl ether ; trans-dichloroethylene ; Isopropanol
3(c) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1	Tempilaq® Advanced 400 °F (204 °C) ; Toluene ; trans-dichloroethylene
40. Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.	Toluene ; Benzene ; trans-dichloroethylene ; Isopropanol
48. Toluene	Toluene
72. The substances listed in column 1 of the Table in Appendix 12	Benzene

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

Contains substance on the REACH candidate list in concentration $\geq 0.1\%$ or with a lower specific limit: Phenolphthalein (EC 201-004-7, CAS 77-09-8)

Contains no REACH Annex XIV substances

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

15.1.2. National regulations

Germany

VwVwS Annex reference : WGK 3, Highly hazardous to water (Classification according to AwSV, Annex 1)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : Phenolphthalein, Benzene are listed

SZW-lijst van mutagene stoffen : Benzene is listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : Phenolphthalein is listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : Toluene is listed

Denmark

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product

The requirements from the Danish Working Environment Authorities regarding work with carcinogens must be followed during use and disposal

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes:

Composition/information on ingredients. GHS classification. General information.

Abbreviations and acronyms:

	CAS (Chemical Abstracts Service) number
	GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).
	OSHA: Occupational Safety & Health Administration
	TSCA: Toxic Substances Control Act
	ATE: Acute Toxicity Estimate
	CLP: Classification, Labelling, Packaging.
	EC50: Environmental Concentration associated with a response by 50% of the test population.
	European List of Waste (LoW) code
	LD50: Lethal Dose for 50% of the test population
	STEL: Short Term Exposure Limits
	TWA: Time Weighted Average

Data sources : European Chemicals Agency (ECHA) C&L Inventory database. Accessed at <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>. Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition. National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition. REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

Classification according to Regulation (EC) No. 1272/2008 [CLP]:	
Acute Tox. 4 (Inhalation:dust,mist)	H332
Eye Irrit. 2	H319
Carc. 1B	H350
Repr. 2	H361
STOT RE 2	H373
Aquatic Chronic 3	H412

Full text of H- and EUH-statements:	
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Asp. Tox. 1	Aspiration hazard, Category 1
Carc. 1A	Carcinogenicity, Category 1A
Carc. 1B	Carcinogenicity, Category 1B
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Muta. 1B	Germ cell mutagenicity, Category 1B
Muta. 2	Germ cell mutagenicity, Category 2
Repr. 2	Reproductive toxicity, Category 2
Repr. 2	Reproductive toxicity, Category 2
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 1	Specific target organ toxicity — Repeated exposure, Category 1
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H361	Suspected of damaging fertility or the unborn child.
H361d	Suspected of damaging the unborn child.
H361f	Suspected of damaging fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:		
Acute Tox. 4 (Inhalation:dust,mist)	H332	Calculation method
Eye Irrit. 2	H319	Calculation method
Carc. 1B	H350	Expert judgment
Repr. 2	H361	Expert judgment

Tempilaq® Advanced 400 °F (204 °C)

Safety Data Sheet

according to Regulation (EU) 2015/830

STOT RE 2	H373	Expert judgment
Aquatic Chronic 3	H412	Calculation method

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.