kerakoll

Certified B Corporation

Kind Customer

We send you the documentation concerning the products supplied: **S45 , S45F**

- Information letter concerning Regulation (EU) 2019/1148 on the marketing and use of explosives precursors
- Material Safety Data Sheet

For further information and clarifications, please contact us at safety@kerakoll.com

Best regards,

kerakoll
Kerakoll Spa - via dell'Artigianato 9
41049 Sassuolo (MO) Italia
C.F./P.I. 01174510360

kerakoll

Certified B Corporation

Esteemed Customer

Sassuolo, 19/04/2024

Object: provisions of Regulation (EU) 2019/1148 concerning the marketing (including online) and use of Explosives Precursors starting from February 1, 2021

Kind Customer,

we hereby inform you that starting from 1st of February 2021, provisions of EU 2019/1148 Regulation inherent to Explosive Precursors will be applied. This new legislation aims to reinforce the system of controlling the availability on the market of Explosive Precursor, in order to limit the availability of certain substances for private consumers and to guarantee the adequate reporting of suspicious transactions. Substances included in the field of application are listed in the respective annex of the regulation:

- Annex I – Explosive Precursors subject to RESTRICTION
- Annex II - Explosive Precursors subject to SEGNALATION

The legislations is applied to pure substances and to mixtures containing those components (depending from the concentration) and the fulfilments of the requirements for each subjects involved in the supply chain are dependent from the type of precursors.

Within the product supplied from us, there are not precursors subject to restriction.

REGULATED PRECURSORS

To date, the products S45 , S45F that we supply, contains the following substance included in the precursors list: Acetone N° CAS 67-64-1

A regulated explosive precursor:

- is available for a professional user o for a private consumer if it is possible to demonstrate to the national authority in charge of inspections, that the staff involved in sales is:

a) Aware of which of the marketed products contains regulated explosive precursors;

b) Educated about the obligation set by the legislation.

- is available to an economic operator only after informing it that that the acquisition, introduction, detention or the use by private consumers is subject to reporting (see next point).

Reporting of suspicious transaction, shipments, disappearances and thefts

Economic operators and online markets must report suspicious transactions, after considering all circumstances, especially in case that the customer acts as follow:

a) He is not able to give accurate description of the predicted use of explosive precursors

b) He seems to be unrelated to the predicted use of the regulated explosive precursor or he cannot explain it in a reasonable way.

c) He has the intention of buying regulated explosive precursors in an unusual quantity, combination or concentration for a legit use.

d) He is reluctant to give a document to validate his identity, place of residence or the status of professional user or of economic operator

e) He insists on using an unusual payment method, like large amount of cash for instance.

Economic operators and on-line markets may reject the suspicious transaction and they can report it within 24 hours to the national point of contact of the member state where the transaction was made or attempted.

Economic operators and professional users report to the national contact point of the member state, disappearances and significant thefts of regulated explosive precursors within 24 hours from the detection.

CONTACT POINTS:

- AUSTRIA: Bundeskriminalamt - Meldestelle Drogenausgangsstoffe; E-mail: Precursor@bmi.gv.at;Tel. +43 1 24836 985372
- BELGIUM: Federale politie - Police fédérale - Föderale Polizei; explosiveprecursor@police.belgium.eu ; Tel.: 00 32 26 42 63 20 (24h/24h); Tel Duty Officer: 00 32 475 29 28 88 (24h/24h)
- BULGARIA: Министерство на вътрешните работи; тел. (+359) 2 9828 336 тел. (+359) 2 9828 106; gdbop@mvr.bg
- CROATIA: Ministarstvo unutarnjih poslova, Ravnateljstvo policije; Email: prekursori@mup.hr ; Tel: +38513788776
- CYPRUS: Αρχηγείο Αστυνομίας; Telephone1: + 357 22 808262 (during office hours) Telephone2: +357 99 629353 (available 24/7); deptc.cto@police.gov.cy
- CZECH REPUBLIC: Český báňský úřad; email: Info@cbusbs.cz ; tel. +420 721 329 137; Policie - National Organized Crime Agency tel.: +420 974 842 333 E-mail: ncoz.t4@pcr.cz; ncoz.nkbt.info@pcr.cz;
- DENMARK: National Situation and Operations Centre; email: pol-nsioc@politi.dk; tel: +4545153400
- ESTONIA: Politsei- ja Piirivalveamet; Phone: +372 612 3810 and 112; E-mail: spoc@politsei.ee
- FINLAND: Keskusrikospoliisi; Tel. +358 504 177 229; E-mail: lahtoaine.krp@poliisi.fi
- FRANCE: Pôle judiciaire de la Gendarmerie nationale; Plateau d'investigation Armes à feu et explosifs (PIXAF); Adresse mail : pixaf@gendarmerie.interieur.gouv.fr; Téléphone : +33 1 78 47 34 29
- GERMANY: Landeskriminalamt; Emergency line: 110

  - Baden-Württemberg, 0711/5401-3333, stuttgart.lka@polizei.bwl.de
  - Bayern, 089/1212-0, blka@polizei.bayern.de
  - Berlin, 030/4664-950130, lka5fuedsteuerung@polizei.berlin.de
  - Brandenburg, 03334/388-0, monitoring.fdlka@polizei.brandenburg.de
  - Bremen, 0421/362-3888, landeskriminalamt@polizei.bremen.de

- Hamburg, 040/4286-72610, lkahh26.kkvd@polizei.hamburg.de
- Hessen, 0611/83-1186, ful.hlka@polizei.hessen.de
- Mecklenburg-Vorpommern, 03866/64-9003, lka@polmv.de
- Niedersachsen, 0511/26262-0, liz@lka.polizei.niedersachsen.de
- Nordrhein-Westfalen, 0211/939-0, poststelle.lka@polizei.nrw.de
- Rheinland-Pfalz, 06131/65-2350, lka.21.ldd@polizei.rlp.de
- Saarland, 0681/962-2133, lpp212@polizei.slpol.de
- Sachsen, 0351/855-0, lka@polizei.sachsen.de
- Sachsen-Anhalt, 0391/250-0, lka@polizei.sachsen-anhalt.de
- Schleswig-Holstein, 0431/160-0, lob.glfz@polizei.landsh.de
- Thüringen, 0361/341-1224, auswertung.lka@polizei.thueringen.de

- GREECE: Ελληνική Αστυνομία; Tel: +302106914916; email: dka_opla@police.gr
- HUNGARY: National Police Headquarters; Tel.: 061/443-5500; Tel. 107; Tel. 112; Email: orfktitkarsag@orfk.police.hu;
- IRELAND: An Garda Síochána; Phone: +353 1 6661782 (office hours); or Garda 24hr Confidential Line: 1800 666 111; or 999 or 112 (in the event of a serious or imminent threat); Email: Liaisonandprotection_DV@garda.ie
- ITALY: Ministero dell'Interno; Tel.: +390646542182; precursori@dcpc.interno.it
- LATVIA: Valsts drošības dienests; Tel. (+371) 67208964; E-mail: kontaktpunkts@vdd.gov.lv
- LITHUANIA: Policijos Departamentas, Prie vidaus reikalų ministerijos; Phone +370 5 271 9949; email: leidimai.pd@policija.lt
- LUXEMBOURG: Police grand-ducale; Direction générale – Service des relations internationals; Point de contact central – INTERPOL – EUROPOL – SIRENE; Courriel : sri@police.etat.lu; Tel : (+352) 4997-2575; Fax : (+352) 4997-2598
- MALTA: Competition and Consumer Affairs Authority; Tel. (+356) 23952000; Fax : (+356) 21242420; E-mail: info@mccaa.org.mt
- NETHERLANDS: Meldpunt Verdachte Transacties Chemicaliën; Belastingdienst / Nationale politie; Tel. 0031 88 154 00 00 (24/7); E-mail: precursoren@belastingdienst.nl (08-17 hrs)
- NORWAY: Den nasjonale enhet for bekjempelse av organisert og annen alvorlig kriminalitet (Kripos); Tel. + 47 23 20 80 10; E-mail: kripos.kjemiskestoffer@politiet.no
- POLAND: Komenda Główna Policji; Puławska 148/150, 02-624; Warszawa tel. +48 226 012 012 tel; +48 22 60 116 40; e-mail: prekursory@policja.gov.pl
- Ministério da Administração Interna - Polícia de Segurança Pública; tlf: +351 218111000; Fax: + 351 21 3874772; E-mail: depaex@psp.pt
- ROMANIA: Poliția Română; Tel . +4021/312.78.20; e-mail: anne@politiaromana.ro
- SLOVAKIA: Ministerstvo vnútra; Tel . 00421 - 2/9610 56201; E-mail: prekurzoryvybusnin@minv.sk

- SLOVENIA: Ministrstvo za notranje zadeve – POLICIJA; interpol.ljubljana@policija.si; T. +386 1 428 4780; T. +386 41 713 680; T. +386 41 713 699; Fax. +386 1 428 4790
- SPAIN: Ministerio del Interior - Centro de Inteligencia contra el Terrorismo y el Crimen Organizado (CITCO) Tel. +34 91 537 27 66 Tel. +34 91 537 27 26 Tel. +34 91 537 27 33; E-mail:cico@interior.es; E-mail: precursores@interior.es SWEDEN: Polismyndigheten; Tel. 114 14 (+46 77 114 14 00 from abroad); E-mail: prekursor@polisen.se
- SWITZERLAND: Federal Office of Police – fedpol; National Contact Point for Explosives Precursors; Phone: +41 58 460 52 10; Email: chemicals@fedpol.admin.ch
- UNITED KINDOM – GRAT BRITAIN: Metropolitan Police Service; Tel. 0207 230 9066; Tel. 0207 2308850; E-mail: Chemical.Reporting@Met.Police.UK
- UNITED KINDOM – NORTHERN IRELAND: Police Service of Northern Ireland; Tel. 0800 789 321; Email: Chemical.reporting@psni.pnn.police.uk

The information about the presence of regulated explosive precursors has to be extended along the supply chain, by sending the Material Safety Data Sheet of the product.

Sanctions

Anyone who, without being entitled, introduces into the State territory, holds, uses or makes available to private individuals the substances or mixtures that contain them indicated as precursors of explosives subject to restriction in Annex I and anyone who fails to report the to the Authority the theft or the disappearance of the substances indicated as precursors of regulated explosives included in Annexes I and II, is punished with the sanctions provided by the reference State.

Kind Regards,

Kerakoll Spa - via dell'Artigianato 9
41049 Sassuolo (MO) Italia
C.F./P.I. 01174510360

Safety Data Sheet

Conforms to Regulation (EC) No. 1907/2006 (REACH), Article 31, Annex II, as amended by Commission Regulation (EU) 2020/878

S45 F

Date of first edition: 7/19/2021

Safety Data Sheet dated 20/10/2026 version 8

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

1.1. Product identifier

Mixture identification:

Trade name: S45 F

Trade code: 28022020

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

Recommended use: Adhesives, sealants

Uses advised against: All uses other than recommended ones

1.3. Details of the supplier of the safety data sheet

Company: KERAKOLL S.p.A.

Via dell'Artigianato, 9

41049 Sassuolo (MODENA) - ITALY

Tel.+39 0536 816511 Fax. +39 0536816581

safety@kerakoll.com

1.4. Emergency telephone number

European emergency phone number 112

Ireland Emergency medical information: (seven days) contact National Poisons Information Centre, Beaumont Hospital, Dublin 9 DOV2NO, Ireland.

Members of the public Number (8 am-10 pm): +353 (0)1 809 2166

Healthcare professional telephone Number (24hrs): +353 (0)1 809 2566

Malta In case of emergency call: +356 2395 2000 (24h)

SECTION 2: Hazards identification



2.1. Classification of the substance or mixture

Regulation (EC) n. 1272/2008 (CLP)

Flam. Liq. 2	Highly flammable liquid and vapour.
Eye Irrit. 2	Causes serious eye irritation.
STOT SE 3	May cause drowsiness or dizziness.
Aquatic Chronic 2	Toxic to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Regulation (EC) No 1272/2008 (CLP):

Hazard pictograms and Signal Word



Danger

Hazard statements

H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P260	Do not breathe vapours.
P273	Avoid release to the environment.
P280	Wear protective gloves/clothing and eye/face protection.
P370+P378	In case of fire, use a dry powder fire extinguisher to extinguish.

Special Provisions:

EUH208	Contains colophony. May produce an allergic reaction.
EUH066	Repeated exposure may cause skin dryness or cracking.

Contains

ethyl acetate

Acetone

Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane

Special provisions according to Annex XVII of REACH and subsequent amendments:

None.

2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration >= 0.1%

Other Hazards: No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: S45 F

Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Numb.	Classification	Registration Number	Material Properties
≥20-<50 %	Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane	EC:926-605-8	Flam. Liq. 2, H225; STOT SE 3, H336; Asp. Tox. 1, H304; Aquatic Chronic 2, H411, M-Chronic:1, EUH066	01-2119486291-36	
≥20-<50 %	Acetone	CAS:67-64-1 EC:200-662-2 Index:606-001-00-8	Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336, EUH066	01-2119471330-49	
≥5-<10 %	ethyl acetate	CAS:141-78-6 EC:205-500-4 Index:607-022-00-5	Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336, EUH066	01-2119475103-46	
≥0.5-<1 %	colophony	CAS:8050-09-7 EC:232-475-7 Index:650-015-00-7	Skin Sens. 1, H317	01-2119480418-32	
≥0.25-<0.3 %	zinc oxide	CAS:1314-13-2 EC:215-222-5 Index:030-013-00-7	Aquatic Acute 1, H400; Aquatic Chronic 1, H410, M-Chronic:1, M-Acute:1	01-2119463881-32	
≥0.1-<0.15 %	n-hexane	CAS:110-54-3 EC:203-777-6 Index:601-037-00-0	Flam. Liq. 2, H225; Repr. 2, H361f; Asp. Tox. 1, H304; STOT SE 3, H336; STOT RE 1, H372; Skin Irrit. 2, H315; Aquatic Chronic 2, H411		SVHC

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.

Wash thoroughly the body (shower or bath).

Remove contaminated clothing immediatley and dispose off safely.

After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an opthalmologist immediately.

Protect uninjured eye.

In case of Ingestion:

Do not induce vomiting, get medical attention showing the SDS and label hazardous.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

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

Eye irritation

Eye damages

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

In case of fire, use a dry powder fire extinguisher to extinguish.

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non emergency personnel:

Wear personal protection equipment.

Remove all sources of ignition.

Remove persons to safety.

See protective measures under point 7 and 8.

For emergency responders:

Wear personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Retain contaminated washing water and dispose it.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

Suitable material for taking up: absorbing material, organic, sand

6.3. Methods and material for containment and cleaning up

Suitable material for taking up: absorbing material, organic, sand

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.

Don't use empty container before they have been cleaned.

Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

Contamined clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

Advice on general occupational hygiene:

7.2. Conditions for safe storage, including any incompatibilities

Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.

Incompatible materials:

Instructions as regards storage premises:

Cool and adequately ventilated.

7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane

	ACGIH	Long Term: 400 mg/m3 (8h)

Acetone

CAS: 67-64-1	ACGIH	Long Term: 250 ppm (8h); Short Term: 500 ppm Notes: A4, BEI - URT and eye irr, CNS impair
	EU	Long Term: 1210 mg/m3 - 500 ppm (8h)
	NATIONAL	AUSTRIA Long Term: 1200 mg/m3 - 500 ppm; Short Term: 4800 mg/m3 - 2000 ppm Notes: 15(Miw), 4x, MAK Source: GKV, BGBl. II Nr. 156/2021
	NATIONAL	BELGIUM Long Term: 594 mg/m3 - 246 ppm; Short Term: 1187 mg/m3 - 492 ppm Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	BULGARIA Long Term: 600 mg/m3; Short Term: 1400 mg/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CYPRUS Long Term: 1210 mg/m3 - 500 ppm Notes: δέρμα Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
	NATIONAL	CZECHIA Long Term: 800 mg/m3; Short Term: Ceiling - 1500 mg/m3 Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	GERMANY Long Term: 1200 mg/m3 - 500 ppm Notes: AGS, DFG, EU, Y, 2(I) Source: TRGS 900
	NATIONAL	DENMARK Long Term: 600 mg/m3 - 250 ppm Notes: E Source: BEK nr 2203 af 29/11/2021
	NATIONAL	SPAIN Long Term: 1210 mg/m3 - 500 ppm Notes: VLB®, VLI Source: LEP 2022
	NATIONAL	ESTONIA Long Term: 1210 mg/m3 - 500 ppm Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FINLAND Long Term: 1200 mg/m3 - 500 ppm; Short Term: 1500 mg/m3 - 630 ppm Source: HTP-ARVOT 2020
	NATIONAL	FRANCE Long Term: 1210 mg/m3 - 500 ppm; Short Term: 2420 mg/m3 - 1000 ppm Source: INRS outil65, article R. 4412-149 du Code du travail
	NATIONAL	GREECE Long Term: 1780 mg/m3; Short Term: 3560 mg/m3 Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	CROATIA Long Term: 1210 mg/m3 - 500 ppm Source: 2000/39/EZ
	NATIONAL	HUNGARY Long Term: 1210 mg/m3 Notes: i, EU[1], N Source: 5/2020. (II. 6.) ITM rendelet
	NATIONAL	IRELAND Long Term: 1210 mg/m3 - 500 ppm Notes: IOELV Source: 2021 Code of Practice
	NATIONAL	ITALY Long Term: 1210 mg/m3 - 500 ppm Source: D.lgs. 81/2008, Allegato XXXVIII

	NATIONAL	LITHUANIA	Long Term: 1210 mg/m3 - 500 ppm; Short Term: 2420 mg/m3 - 1000 ppm Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	LUXEMBOURG	Long Term: 1210 mg/m3 - 500 ppm Source: Mémorial A n.226 du 22 mars 2021
	NATIONAL	LATVIA	Long Term: 1210 mg/m3 - 500 ppm Source: KN325P1
	NATIONAL	MALTA	Long Term: 1210 mg/m3 - 500 ppm Source: S.L.424.24
	NATIONAL	NETHERLANDS	Long Term: 1210 mg/m3; Short Term: 2420 mg/m3 Source: Arbeidsomstandighedenregeling - Lijst A
	NATIONAL	NORWAY	Long Term: 295 mg/m3 - 125 ppm Notes: E Source: FOR-2021-06-28-2248
	NATIONAL	POLAND	Long Term: 600 mg/m3; Short Term: 1800 mg/m3 Source: Dz.U. 2018 poz. 1286
	NATIONAL	PORTUGAL	Long Term: 1210 mg/m3 - 500 ppm Source: Decreto-Lei n.º 1/2021
	NATIONAL	ROMANIA	Long Term: 1210 mg/m3 - 500 ppm Notes: Dir. 2000/39 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
	NATIONAL	SLOVAKIA	Long Term: 1210 mg/m3 - 500 ppm Notes: 7) Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	NATIONAL	SLOVENIA	Long Term: 1210 mg/m3 - 500 ppm; Short Term: 2420 mg/m3 - 1000 ppm Notes: Y, BAT, EU1 Source: UL št. 72, 11. 5. 2021
	NATIONAL	SWEDEN	Long Term: 600 mg/m3 - 250 ppm; Short Term: 1200 mg/m3 - 500 ppm Notes: V Source: AFS 2021:3
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 1210 mg/m3 - 500 ppm; Short Term: 3620 mg/m3 - 1500 ppm Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	SUVA	SWITZERLAND	Long Term: 1200 mg/m3 - 500 ppm; Short Term: 2400 mg/m3 - 1000 ppm Notes: B, VR SNC Yeux / AW ZNS Auge, NIOSH Source: suva.ch/valeurs-limites

ethyl acetate

CAS: 141-78-6	EU		Long Term: 734 mg/m3 - 200 ppm (8h); Short Term: 1468 mg/m3 - 400 ppm
	NATIONAL	AUSTRIA	Long Term: 734 mg/m3 - 200 ppm; Short Term: 1468 mg/m3 - 400 ppm Notes: 15(Miw), 4x, MAK Source: BGBl. II Nr. 156/2021
	NATIONAL	BELGIUM	Long Term: 734 mg/m3 - 200 ppm; Short Term: 1468 mg/m3 - 400 ppm Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	BULGARIA	Long Term: 734 mg/m3 - 200 ppm; Short Term: 1468 mg/m3 - 400 ppm Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CYPRUS	Long Term: 734 mg/m3 - 200 ppm; Short Term: 1468 mg/m3 - 400 ppm Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
	NATIONAL	CZECHIA	Long Term: 700 mg/m3; Short Term: Ceiling - 900 mg/m3 Notes: I Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	GERMANY	Long Term: 730 mg/m3 - 200 ppm Notes: DFG, EU, Y, 2(I) Source: TRGS 900
	NATIONAL	DENMARK	Long Term: 540 mg/m3 - 150 ppm Notes: E Source: BEK nr 2203 af 29/11/2021

NATIONAL	SPAIN	Long Term: 734 mg/m3 - 200 ppm; Short Term: 1468 mg/m3 - 400 ppm Notes: VLI Source: LEP 2022
NATIONAL	ESTONIA	Long Term: 500 mg/m3 - 150 ppm; Short Term: 1100 mg/m3 - 300 ppm Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATIONAL	FINLAND	Long Term: 730 mg/m3 - 200 ppm; Short Term: 1470 mg/m3 - 400 ppm Source: HTP-ARVOT 2020
NATIONAL	FRANCE	Long Term: 734 mg/m3 - 200 ppm; Short Term: 1468 mg/m3 - 400 ppm Source: INRS outil65, article R. 4412-149 du Code du travail
NATIONAL	GREECE	Long Term: 734 mg/m3 - 200 ppm; Short Term: 1468 mg/m3 - 400 ppm Source: Π.Δ. 82/2018 (ΦΕΚ 152/Α` 21.8.2018)
NATIONAL	CROATIA	Long Term: 734 mg/m3 - 200 ppm; Short Term: 1468 mg/m3 - 400 ppm Source: 2017/164/EU
NATIONAL	HUNGARY	Long Term: 734 mg/m3; Short Term: 1468 mg/m3 Notes: i, sz, EU4, N Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	IRELAND	Long Term: 734 mg/m3 - 200 ppm; Short Term: 1468 mg/m3 - 400 ppm Notes: IOELV Source: 2021 Code of Practice
NATIONAL	ITALY	Long Term: 734 mg/m3 - 200 ppm; Short Term: 1468 mg/m3 - 400 ppm Source: D.lgs. 81/2008, Allegato XXXVIII
NATIONAL	LITHUANIA	Long Term: 500 mg/m3 - 150 ppm; Short Term: Ceiling - 1100 mg/m3 - 300 ppm Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	LUXEMBOURG	Long Term: 734 mg/m3 - 200 ppm; Short Term: 1468 mg/m3 - 400 ppm Source: Mémorial A n.226 du 22 mars 2021
NATIONAL	LATVIA	Long Term: 200 mg/m3 - 54 ppm; Short Term: 1468 mg/m3 - 400 ppm Source: KN325P1
NATIONAL	MALTA	Long Term: 734 mg/m3 - 200 ppm; Short Term: 1468 mg/m3 - 400 ppm Source: S.L.424.24
NATIONAL	NETHERLANDS	Long Term: 734 mg/m3; Short Term: 1468 mg/m3 Source: Arbeidsomstandighedenregeling - Lijst A
NATIONAL	NORWAY	Long Term: 734 mg/m3 - 200 ppm; Short Term: 1468 mg/m3 - 400 ppm Notes: E S Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 734 mg/m3; Short Term: 1468 mg/m3 Source: Dz.U. 2018 poz. 1286
NATIONAL	PORTUGAL	Long Term: 734 mg/m3 - 200 ppm; Short Term: 1468 mg/m3 - 400 ppm Source: Decreto-Lei n.º 1/2021
NATIONAL	ROMANIA	Long Term: 734 mg/m3 - 200 ppm; Short Term: 1468 mg/m3 - 400 ppm Notes: Dir. 2017/164 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATIONAL	SLOVAKIA	Long Term: 734 mg/m3 - 200 ppm; Short Term: 1468 mg/m3 - 400 ppm Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SLOVENIA	Long Term: 734 mg/m3 - 200 ppm; Short Term: 1468 mg/m3 - 400 ppm Notes: Y, EU4 Source: UL št. 72, 11. 5. 2021
NATIONAL	SWEDEN	Long Term: 550 mg/m3 - 150 ppm; Short Term: 1100 mg/m3 - 300 ppm Source: AFS 2021:3
WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 734 mg/m3 - 200 ppm; Short Term: 1468 mg/m3 - 400 ppm Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
SUVA	SWITZERLAND	Long Term: 730 mg/m3 - 200 ppm; Short Term: 1460 mg/m3 - 400 ppm Notes: SSC, VRS Yeux / OAW Auge, INRS NIOSH Source: suva.ch/valeurs-limites

colophony

CAS: 8050-09-7	ACGIH		Long Term: 0.001 mg/m3 (8h) Notes: I, DSEN, RSEN - Asthma, resp and eye irr, dermal and resp sens
	NATIONAL	CZECHIA	Long Term: 1 mg/m3 Notes: S, V Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	SPAIN	Notes: m, Sen Source: LEP 2022
	NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 0.05 mg/m3 (8h); Short Term: 0.15 mg/m3
	NATIONAL	CROATIA	Long Term: 0.05 mg/m3; Short Term: 0.15 mg/m3 Notes: alergen koža Source: NN 1/2021
	NATIONAL	LATVIA	Long Term: 4 mg/m3 Source: KN325P1
	NATIONAL	ROMANIA	Long Term: 0.1 mg/m3 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
	WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 0.05 mg/m3; Short Term: 0.15 mg/m3 Notes: Sen Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
	SUVA	SWITZERLAND	Notes: S, Poumons Peau / Lunge Haut Source: suva.ch/valeurs-limites

zinc oxide

CAS: 1314-13-2	ACGIH		Long Term: 2 mg/m3 (8h); Short Term: 10 mg/m3 Notes: R - Metal fume fever
	NATIONAL	AUSTRIA	Long Term: 5 mg/m3 Notes: MAK, A Source: BGBl. II Nr. 156/2021
	NATIONAL	BELGIUM	Long Term: 2 mg/m3; Short Term: 10 mg/m3 Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	BULGARIA	Long Term: 5 mg/m3; Short Term: 10 mg/m3 Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	CZECHIA	Long Term: 2 mg/m3; Short Term: Ceiling - 5 mg/m3 Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	DENMARK	Long Term: 4 mg/m3 Source: BEK nr 2203 af 29/11/2021
	NATIONAL	SPAIN	Long Term: 2 mg/m3; Short Term: 10 mg/m3 Notes: d Source: LEP 2022
	NATIONAL	ESTONIA	Long Term: 5 mg/m3 Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
	NATIONAL	FINLAND	Long Term: 2 mg/m3; Short Term: 10 mg/m3 Source: HTP-ARVOT 2020
	NATIONAL	FRANCE	Long Term: 5 mg/m3 Source: INRS outil65
			Long Term: 10 mg/m3 Source: INRS outil65
	NATIONAL	GREECE	Long Term: 5 mg/m3; Short Term: 10 mg/m3 Source: ΦΕΚ 94/Α` 13.5.1999
	NATIONAL	CROATIA	Long Term: 2 mg/m3; Short Term: 10 mg/m3 Notes: GVI: R

			Source: NN 1/2021
	NATIONAL	HUNGARY	Long Term: 5 mg/m3 Notes: i, N Source: 5/2020. (II. 6.) ITM rendelet Long Term: 5 mg/m3 Notes: i, R Source: 5/2020. (II. 6.) ITM rendelet
	NATIONAL	IRELAND	Long Term: 2 mg/m3; Short Term: 10 mg/m3 Notes: OEL (8-hour reference period) : R Source: 2021 Code of Practice
	NATIONAL	LITHUANIA	Long Term: 5 mg/m3 Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
	NATIONAL	LATVIA	Long Term: 0.5 mg/m3 Source: KN325P1
	NATIONAL	NORWAY	Long Term: 5 mg/m3 Source: FOR-2021-06-28-2248
	NATIONAL	POLAND	Long Term: 5 mg/m3; Short Term: 10 mg/m3 Notes: 4) Source: Dz.U. 2018 poz. 1286
	NATIONAL	ROMANIA	Long Term: 5 mg/m3; Short Term: 10 mg/m3 Notes: (Fumuri) Source: Republicarea 1 - nr. 743 din 29 iulie 2021
	NATIONAL	SLOVAKIA	Long Term: 1 mg/m3; Short Term: 1 mg/m3 Notes: 11) Source: 355 NARIADENIE VLÁDY z 10. mája 2006
	NATIONAL	SWEDEN	Long Term: 5 mg/m3 Notes: 3 Source: AFS 2021:3
	SUVA	SWITZERLAND	Long Term: 3 mg/m3; Short Term: 3 mg/m3 Notes: TWA mg/m3: (a), Fimétal / Metallrauch, NIOSH OSHA Source: suva.ch/valeurs-limites
n-hexane			
CAS: 110-54-3	ACGIH		Long Term: 50 ppm (8h) Notes: Skin, BEI - CNS impair, peripheral neuropathy, eye irr
	EU		Long Term: 72 mg/m3 - 20 ppm (8h)
	NATIONAL	AUSTRIA	Long Term: 72 mg/m3 - 20 ppm; Short Term: 288 mg/m3 - 80 ppm Notes: 15(Miw), 4x, MAK, f Source: BGBl. II Nr. 156/2021
	NATIONAL	BELGIUM	Long Term: 72 mg/m3 - 20 ppm Source: Code du bien-être au travail, Livre VI, Titre 1er, Annexe VI.1-1
	NATIONAL	BULGARIA	Long Term: 72 mg/m3 - 20 ppm Source: НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г.
	NATIONAL	SWITZERLAND	Long Term: 180 mg/m3 - 50 ppm (8h); Short Term: 1440 mg/m3 - 400 ppm
	NATIONAL	CYPRUS	Long Term: 72 mg/m3 - 20 ppm Source: Οι περί Ασφάλειας και Υγείας στην Εργασία (Χημικοί Παράγοντες) Κανονισμοί του 2001 έως 2021
	NATIONAL	CZECHIA	Long Term: 70 mg/m3; Short Term: Ceiling - 200 mg/m3 Notes: I, D Source: Nařízení vlády č. 361-2007 Sb
	NATIONAL	GERMANY	Long Term: 180 mg/m3 - 50 ppm Notes: DFG, EU, Y, 8(II) Source: TRGS 900
	NATIONAL	DENMARK	Long Term: 72 mg/m3 - 20 ppm Notes: E Source: BEK nr 2203 af 29/11/2021
	NATIONAL	SPAIN	Long Term: 72 mg/m3 - 20 ppm Notes: VLB®, VLI

		Source: LEP 2022
NATIONAL	ESTONIA	Long Term: 72 mg/m3 - 20 ppm Source: Vabariigi Valitsuse, 20. märtsi 2001. a määrus nr 105
NATIONAL	FINLAND	Long Term: 72 mg/m3 - 20 ppm Notes: iho Source: HTP-ARVOT 2020
NATIONAL	FRANCE	Long Term: 72 mg/m3 - 20 ppm Notes: Toxique pour la reproduction de catégorie 2 Source: INRS outil65, article R. 4412-149 du Code du travail
NATIONAL	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 72 mg/m3 - 20 ppm (8h)
NATIONAL	GREECE	Long Term: 72 mg/m3 - 20 ppm Source: ΦΕΚ 202/Α` 23.8.2007
NATIONAL	CROATIA	Long Term: 72 mg/m3 - 20 ppm Notes: koža Source: 2006/15/EZ
NATIONAL	HUNGARY	Long Term: 72 mg/m3 Notes: b, i, BEM, EU2, T Source: 5/2020. (II. 6.) ITM rendelet
NATIONAL	IRELAND	Long Term: 72 mg/m3 - 20 ppm Notes: IOELV, Sk Source: 2021 Code of Practice
NATIONAL	ITALY	Long Term: 72 mg/m3 - 20 ppm Source: D.lgs. 81/2008, Allegato XXXVIII
NATIONAL	LITHUANIA	Long Term: 72 mg/m3 - 20 ppm Notes: R Source: 2011 m. rugsėjo 1 d. Nr. V-824/A1-389
NATIONAL	LUXEMBOURG	Long Term: 72 mg/m3 - 20 ppm Source: Mémorial A n.226 du 22 mars 2021
NATIONAL	LATVIA	Long Term: 72 mg/m3 - 20 ppm Notes: Ietekme uz dzirdi Source: KN325P1
NATIONAL	MALTA	Long Term: 72 mg/m3 - 20 ppm Source: S.L.424.24
NATIONAL	NETHERLANDS	Long Term: 72 mg/m3; Short Term: 144 mg/m3 Source: Arbeidsomstandighedenregeling - Lijst A
NATIONAL	NORWAY	Long Term: 72 mg/m3 - 20 ppm Notes: R E Source: FOR-2021-06-28-2248
NATIONAL	POLAND	Long Term: 72 mg/m3 Notes: skóra Source: Dz.U. 2018 poz. 1286
NATIONAL	PORTUGAL	Long Term: 72 mg/m3 - 20 ppm Source: Decreto-Lei n.º 1/2021
NATIONAL	ROMANIA	Long Term: 72 mg/m3 - 20 ppm Notes: R2, Dir. 2006/15 Source: Republicarea 1 - nr. 743 din 29 iulie 2021
NATIONAL	SLOVAKIA	Long Term: 72 mg/m3 - 20 ppm; Short Term: 140 mg/m3 - 40 ppm Notes: 7) Source: 355 NARIADENIE VLÁDY z 10. mája 2006
NATIONAL	SLOVENIA	Long Term: 72 mg/m3 - 20 ppm; Short Term: 576 mg/m3 - 160 ppm Notes: Y, BAT, EU2, RD2 Source: UL št. 72, 11. 5. 2021
NATIONAL	SWEDEN	Long Term: 72 mg/m3 - 20 ppm; Short Term: 180 mg/m3 - 50 ppm Source: AFS 2021:3

WEL-EH40	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	Long Term: 72 mg/m3 - 20 ppm Source: EH40/2005 Workplace exposure limits (Fourth Edition 2020)
SUVA	SWITZERLAND	Long Term: 180 mg/m3 - 50 ppm; Short Term: 1440 mg/m3 - 400 ppm Notes: R/H, R2F, SSC, B, Yeux SN / Auge NS, NIOSH Source: suva.ch/valeurs-limites

Biological limit values

Acetone

CAS: 67-64-1 Biological Indicator: Acetone; Sampling Period: End of turn
Value: 80 mg/L; Medium: Urine
Remark: Not Specific

n-hexane

CAS: 110-54-3 Biological Indicator: 2.5-hexanedione in the urine; Sampling Period: End of turn
Value: 5 mg/L; Medium: Urine

Predicted No Effect Concentration (PNEC) values

Acetone

CAS: 67-64-1 Exposure Route: Fresh Water; PNEC Limit: 10.6 mg/l
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 21 mg/l
Exposure Route: Marine water; PNEC Limit: 1.06 mg/l
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 100 mg/l
Exposure Route: Freshwater sediments; PNEC Limit: 30.4 mg/kg
Exposure Route: Marine water sediments; PNEC Limit: 3.04 mg/kg
Exposure Route: Soil; PNEC Limit: 29.5 mg/kg

ethyl acetate

CAS: 141-78-6 Exposure Route: Fresh Water; PNEC Limit: 240 mg/m3
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 1.65 mg/l
Exposure Route: Marine water; PNEC Limit: 24 mg/m3
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 650 mg/l
Exposure Route: Freshwater sediments; PNEC Limit: 1.15 mg/kg
Exposure Route: Marine water sediments; PNEC Limit: 115 µg/kg
Exposure Route: Soil; PNEC Limit: 148 µg/kg
Exposure Route: Secondary poisoning; PNEC Limit: 200 mg/kg

colophony

CAS: 8050-09-7 Exposure Route: Fresh Water; PNEC Limit: 1.6 mg/m3
Exposure Route: Intermittent releases (fresh water); PNEC Limit: 16 mg/m3
Exposure Route: Marine water; PNEC Limit: 160 ng/l
Exposure Route: Microorganisms in sewage treatments; PNEC Limit: 1000 mg/l
Exposure Route: Freshwater sediments; PNEC Limit: 7 µg/kg
Exposure Route: Marine water sediments; PNEC Limit: 0.7 µg/kg
Exposure Route: Soil; PNEC Limit: 0.45 µg/kg

Derived No Effect Level (DNEL) values

Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 5306 mg/kg/day; Consumer: 1131 mg/kg/day

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 13964 mg/kg; Consumer: 1377 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 1301 mg/kg

ethyl acetate

CAS: 141-78-6 Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects

Worker Professional: 734 mg/kg/day; Consumer: 367 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, systemic effects
Worker Professional: 1468 mg/kg/day; Consumer: 734 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, local effects
Worker Professional: 734 mg/kg/day; Consumer: 367 mg/kg/day

Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects
Worker Professional: 1468 mg/kg/day; Consumer: 734 mg/kg/day

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 63 mg/kg; Consumer: 37 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 4.5 mg/kg

colophony

CAS: 8050-09-7

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 2.131 mg/kg; Consumer: 1.065 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 1.065 mg/kg

n-hexane

CAS: 110-54-3

Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects
Worker Professional: 75 mg/kg/day; Consumer: 16 mg/kg/day

Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects
Worker Professional: 11 mg/kg; Consumer: 5.3 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 4 mg/kg

8.2. Exposure controls

Eye protection:

Eye glasses with side protection.(EN166)

Protection for skin:

Chemical protection clothing. Safety shoes.

Protection for hands:

Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions.

Respiratory protection:

Gas filter type AX .

Thermal Hazards:

Wear appropriate thermal protective clothing, when necessary.

Environmental exposure controls:

Prevent the product from entering sewers or surface and underground water.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	Light yellow
Odour:	Characteristic
pH:	Not Relevant
Kinematic viscosity:	> 20,5 mm2/s (40 °C)
Melting point/freezing point:	10 °C (50 °F)
Boiling point or initial boiling point and boiling range:	36 °C (97 °F)
Flash point:	< 23°C
Lower and upper explosion limit:	9.40 % (UEL). 1.50 % (LEL).
Relative vapour density:	N.A.
Vapour pressure:	107.20 (kPa 50°C). mm Hg @ 20°C

Density and/or relative density:	0.90 g/cm3
Solubility in water:	Insoluble
Solubility in oil:	N.A.
Partition coefficient n-octanol/water (log value):	N.A.
Auto-ignition temperature:	N.A.
Decomposition temperature:	N.A.
Flammability:	The product is classified Flam. Liq. 2
Volatile Organic compounds - VOCs =	74.40%; 669.60g/L

Particle characteristics:

Particle size: N.A.

9.2. Other information

Viscosity: 4,500.00 cPo

No other relevant information

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Data not available.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

Stable under normal conditions.

10.5. Incompatible materials

Avoid contact with oxidizing materials. The product could catch fire.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Toxicological Information of the Preparation

a) acute toxicity	Not classified
	Based on available data, the classification criteria are not met
b) skin corrosion/irritation	Not classified
	Based on available data, the classification criteria are not met
c) serious eye damage/irritation	The product is classified: Eye Irrit. 2(H319)
d) respiratory or skin sensitisation	Not classified
	Based on available data, the classification criteria are not met
e) germ cell mutagenicity	Not classified
	Based on available data, the classification criteria are not met
f) carcinogenicity	Not classified
	Based on available data, the classification criteria are not met
g) reproductive toxicity	Not classified
	Based on available data, the classification criteria are not met
h) STOT-single exposure	The product is classified: STOT SE 3(H336)
i) STOT-repeated exposure	Not classified
	Based on available data, the classification criteria are not met
j) aspiration hazard	Not classified
	Based on available data, the classification criteria are not met

Toxicological information on main components of the mixture:

Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane

	a) acute toxicity	LD50 Oral Rat = 25 ml/Kg
		LC50 Inhalation Rat = 73860 mg/kg
		LD50 Skin Rat = 5 ml/Kg
Acetone		
CAS: 67-64-1	a) acute toxicity	LD50 Oral Rat = 5800 mg/kg
		LC50 Inhalation Vapour Rat = 76 mg/l 4h
		LD50 Skin Rabbit > 7400 mg/kg 24h
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative
	c) serious eye damage/irritation	Eye Irritant Rabbit Yes
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative
	f) carcinogenicity	Genotoxicity Negative
	g) reproductive toxicity	No Observed Effect Level Oral Rat = 10000 mg/l
ethyl acetate		
CAS: 141-78-6	a) acute toxicity	LD50 Oral Rat = 5620 mg/kg
		LC50 Inhalation Vapour Rat > 22.5 mg/l 6h
		LD50 Skin Rabbit > 20000 mg/kg 24h
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative 24h
	c) serious eye damage/irritation	Eye Irritant Rabbit No
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative
	f) carcinogenicity	Genotoxicity Negative
	g) reproductive toxicity	No Observed Adverse Effect Level Oral = 13800 mg/kg
colophony		
CAS: 8050-09-7	a) acute toxicity	LD50 Oral Rat > 2000 mg/kg
		LD50 Skin Rat > 2000 mg/kg 24h
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative
	c) serious eye damage/irritation	Eye Irritant No 6h
	d) respiratory or skin sensitisation	Skin Sensitization Negative
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 5000
zinc oxide		
CAS: 1314-13-2	a) acute toxicity	LD50 Oral Rat > 5000 mg/kg
		LC50 Inhalation Rat > 5.7 mg/l 4h
		LD50 Skin Rat > 2000 mg/kg 24h
	b) skin corrosion/irritation	Skin Irritant Rabbit Negative
	c) serious eye damage/irritation	Eye Irritant Rabbit No
	d) respiratory or skin sensitisation	Skin Sensitization Guineapig Negative
	f) carcinogenicity	Genotoxicity Negative
	g) reproductive toxicity	No Observed Adverse Effect Level Oral Rat = 7.2 mg/kg
n-hexane		
CAS: 110-54-3	a) acute toxicity	LD50 Oral Rat = 24 ml/Kg
		LC50 Inhalation Vapour Rat = 73860 Ppm 4h
		LD50 Skin Rabbit > 5 ml/Kg 4h
	b) skin corrosion/irritation	Skin Irritant Rabbit Positive
	c) serious eye damage/irritation	Eye Irritant Rabbit No

d) respiratory or skin sensitisation	Skin Sensitization Negative
f) carcinogenicity	Genotoxicity Negative
	Carcinogenicity Negative
g) reproductive toxicity	No Observed Adverse Effect Level Inhalation Rat = 10560 mg/m3

11.2. Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration >= 0.1%

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

Eco-Toxicological Information:

Toxic to aquatic life with long lasting effects.

List of Eco-Toxicological properties of the product

The product is classified: Aquatic Chronic 2(H411)

List of Eco-Toxicological properties of the components

Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane

a) Aquatic acute toxicity: LC50 Fish onocorhynchus mykiss = 12 mg/L 96h

a) Aquatic acute toxicity: EC50 Daphnia daphinia magna = 3 mg/L 48h

a) Aquatic acute toxicity: EC50 Algae pseudokirchneriella subcapitata = 55 mg/L 72h

Acetone

CAS: 67-64-1

a) Aquatic acute toxicity: LC50 Fish Oncorhynchus mykiss = 5540 mg/L 96h

a) Aquatic acute toxicity: LC50 Daphnia Daphnia pulex = 8800 mg/L 48h

b) Aquatic chronic toxicity: NOEC Daphnia Daphnia magna = 2212 mg/L

a) Aquatic acute toxicity: NOEC Algae Microcystis aeruginosa = 530 mg/L

a) Aquatic acute toxicity: NOEC Sludge Activated sludge = 1000 mg/L

d) Terrestrial toxicity: LC50 Worm Eisenia fetida = 0.55 mg/cm2 48h

ethyl acetate

CAS: 141-78-6

a) Aquatic acute toxicity: LC50 Fish S Gairdneri = 230 mg/L 96h

b) Aquatic chronic toxicity: NOEC Fish freshwater fish = 6.9 mg/L

a) Aquatic acute toxicity: LC50 Daphnia Daphnia Cucullata = 165 mg/L 48h

b) Aquatic chronic toxicity: NOEC Daphnia daphnia magna = 2.4 mg/L

a) Aquatic acute toxicity: EC50 Algae S. subspicatus = 5600 mg/L 48h

c) Bacteria toxicity: NOEC Pseudomonas putida = 650 mg/L

colophony

CAS: 8050-09-7

a) Aquatic acute toxicity: EL50 Fish Leuciscus idus > 1000 mg/L 96h

a) Aquatic acute toxicity: EL50 Daphnia > 100 mg/L 48h

a) Aquatic acute toxicity: EC50 microorganisms > 10000 mg/L

a) Aquatic acute toxicity: EL50 Algae > 100 mg/L 48h

zinc oxide

CAS: 1314-13-2

a) Aquatic acute toxicity: LC50 Fish Oncorrhynchus Mykiss = 0.169 mg/L 96h

b) Aquatic chronic toxicity: NOEC Fish Cyprinodontidae , Cyprinidae, Salmonidae and Cottidae = 0.044 mg/L

a) Aquatic acute toxicity: EC50 Ceriodaphnia dubia = 0.147 mg/L

b) Aquatic chronic toxicity: NOEC aquatic invertebrates = 0.014 mg/L

a) Aquatic acute toxicity: IC50 Algae Selenastrum capricornutum = 0.136 mg/L

b) Aquatic chronic toxicity: NOEC Algae = 0.06 mg/L

c) Bacteria toxicity: NOEC Sludge activated slugde = 100 µg/L

d) Terrestrial toxicity: EC10 Worm Lumbricus terrestris = 1634 mg/kg

d) Terrestrial toxicity: EC10 Folsomia candida = 14.6 mg/kg

n-hexane

CAS: 110-54-3

a) Aquatic acute toxicity: LL50 Fish freshwater fish = 12.51 mg/L 96h

b) Aquatic chronic toxicity: NOEC Fish = 2.8 mg/L

a) Aquatic acute toxicity: EL50 freshwater invertebrates = 21.85 mg/L 48h

b) Aquatic chronic toxicity: NOELR freshwater invertebrate = 4.88 mg/L

a) Aquatic acute toxicity: EL50 Algae = 9.28 mg/L 48h

12.2. Persistence and degradability

Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane

Readily biodegradable

Acetone

CAS: 67-64-1	Readily biodegradable	Test: Biochemical oxigen demand; Value: 90

ethyl acetate

CAS: 141-78-6	Readily biodegradable	Test: CO2 production; Value: 94 Notes: 28days

n-hexane

CAS: 110-54-3	Readily biodegradable

12.3. Bioaccumulative potential

Acetone

CAS: 67-64-1	Bioaccumulative	Test: BCF - Bioconcentrantion factor; Value: 3

ethyl acetate

CAS: 141-78-6	Bioaccumulative	Test: BCF - Bioconcentrantion factor; Value: 30 Notes: aquatic species

colophony

CAS: 8050-09-7	Bioaccumulative	Test: BCF - Bioconcentrantion factor; Value: 56.23 Notes: L/kg ww.

n-hexane

CAS: 110-54-3	Bioaccumulative	Test: BCF - Bioconcentrantion factor; Value: 501

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

No PBT or vPvB substances present in concentration >= 0.1%

12.6. Endocrine disrupting properties

No endocrine disruptor substances present in concentration >= 0.1%

12.7. Other adverse effects

N.A.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

The product disposed of as such, pursuant to Regulation (EU) 1357/2014, must be classified as hazardous waste

A waste code according to the European List of Wastes (LoW) cannot be specified, due to dependence on the usage. Contact an authorized waste disposal service.

Properties of waste which render it hazardous (Annex III, Directive 2008/98/EC):

N.A.

SECTION 14: Transport information

14.1. UN number or ID number

1133

14.2. UN proper shipping name

ADR-Shipping Name: ADHESIVES containing flammable liquid (vapour pressure at 50 °C more than 110 kPa)

IATA-Shipping Name: ADHESIVES containing flammable liquid

IMDG-Shipping Name: ADHESIVES containing flammable liquid

14.3. Transport hazard class(es)

ADR-Class: 3

IATA-Class: 3

IMDG-Class: 3

14.4. Packing group

ADR-Packing Group: II

IATA-Packing group: II

IMDG-Packing group: II

14.5. Environmental hazards

Most important toxic component: Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane

Marine pollutant: Yes

Environmental Pollutant: Yes

IMDG-EMS: F-E, S-D

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR-Label: 3

ADR - Hazard identification number: 33

ADR-Special Provisions: 640C

ADR-Transport category (Tunnel restriction code): 2 (D/E)

ADR Limited Quantities: 5 L

ADR Excepted Quantities: E2

Air (IATA):

IATA-Passenger Aircraft: 353

IATA-Cargo Aircraft: 364

IATA-Label: 3

IATA-Subsidiary hazards: -

IATA-Erg: 3L

IATA-Special Provisions: A3

Sea (IMDG):

IMDG-Stowage and handling: Category B

IMDG-Segregation: -

IMDG-Subsidiary hazards: -

IMDG-Special Provisions: -

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information

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

Dir. 98/24/EC (Risks related to chemical agents at work)

Dir. 2000/39/EC (Occupational exposure limit values)

Regulation (EC) n. 1907/2006 (REACH)

Regulation (EU) n. 2020/878

Regulation (EC) n. 1272/2008 (CLP)

Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013

Regulation (EU) n. 286/2011 (ATP 2 CLP)

Regulation (EU) n. 618/2012 (ATP 3 CLP)

Regulation (EU) n. 487/2013 (ATP 4 CLP)

Regulation (EU) n. 944/2013 (ATP 5 CLP)

Regulation (EU) n. 605/2014 (ATP 6 CLP)

Regulation (EU) n. 2015/1221 (ATP 7 CLP)

Regulation (EU) n. 2016/918 (ATP 8 CLP)

Regulation (EU) n. 2016/1179 (ATP 9 CLP)

Regulation (EU) n. 2017/776 (ATP 10 CLP)

Regulation (EU) n. 2018/669 (ATP 11 CLP)

Regulation (EU) n. 2018/1480 (ATP 13 CLP)

Regulation (EU) n. 2019/521 (ATP 12 CLP)

Regulation (EU) n. 2020/217 (ATP 14 CLP)

Regulation (EU) n. 2020/1182 (ATP 15 CLP)

Regulation (EU) n. 2021/643 (ATP 16 CLP)

Regulation (EU) n. 2021/849 (ATP 17 CLP)

Regulation (EU) n. 2022/692 (ATP 18 CLP)

Regulation (EU) n. 2023/707

Regulation (EU) n. 2023/1434 (ATP 19 CLP)

Regulation (EU) n. 2023/1435 (ATP 20 CLP)

Regulation (EU) n. 2024/197 (ATP 21 CLP)

Regulation (EU) n. 2024/2564 (ATP 22 CLP)

Regulation (EU) n. 2024/2865

Regulation (EU) n. 2025/1222 (ATP 23 CLP)

Regulation (EC) nr 648/2004 (Detergents).

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product: 3, 40

Restrictions related to the substances contained: 75

Provisions related to directive EU 2012/18 (Seveso III):

Seveso III category according	**Lower-tier threshold (tonnes)**	**Upper-tier threshold (tonnes)**

to Annex 1, part 1

Product belongs to category: P5c	5000	50000
Product belongs to category: E2	200	500

Explosives precursors – Regulation 2019/1148

No substances listed

Regulation (EU) No 649/2012 (PIC regulation)

No substances listed

German Water Hazard Class.

Class 3: extremely hazardous.

German Lagerklasse according to TRGS 510:

LGK 3

SVHC Substances:

Substances in candidate list (Art. 59 Reg. 1907/2006, REACH):

Component	Ident. Numb.	Quantity	Material Properties
n-hexane	CAS: 110-54-3	≥0.1-<0.15 %	SVHC
	EINECS: 203-777-6		Specific target organ toxicity - repeated exposure
	Index: 601-037-00-0		

Regulation (EU) 2019/1148 concerning the marketing and use of explosives precursors.

ACETONE (CAS 67-64-1): ANNEX II- Regulated explosives precursors.

Substance indicated in section 3.2 included in Annex II (regulated precursor).

This product is regulated by Regulation (EU) 2019/1148: all suspicious transactions and significant disappearances and thefts must be reported to the competent national contact point at

GREAT BRITAIN: Metropolitan Police Service - Tel. 0207 230 9066; Tel. 0207 230 8850; E-mail: Chemical.Reporting@Met.Police.UK

NORTHERN IRELAND: Police Service of Northern Ireland - Tel. 0800 789 321; E-mail: Chemical.reporting@psni.pnn.police.uk

MALTA: Competition and Consumer Affairs Authority - Tel. (+356) 23952000; Fax: (+356) 21242420; E-mail: info@mccaa.org.mt

IRELAND: An Garda Síochána - Phone: +353 1 6661782 (office hours); or Garda 24hr Confidential Line: 1800 666 111; or 999 or 112 (in the event of a serious or imminent threat); Email: Liaisonandprotection_DV@garda.ie

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

Substances for which a Chemical Safety Assessment has been carried out:

Acetone

ethyl acetate

zinc oxide

SECTION 16: Other information

Code	Description
EUH066	Repeated exposure may cause skin dryness or cracking.
H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H361f	Suspected of damaging fertility.
H372	Causes damage to organs (T) through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

Code	Hazard class and hazard category	Description
2.6/2	Flam. Liq. 2	Flammable liquid, Category 2
3.10/1	Asp. Tox. 1	Aspiration hazard, Category 1
3.2/2	Skin Irrit. 2	Skin irritation, Category 2
3.3/2	Eye Irrit. 2	Eye irritation, Category 2

3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.7/2	Repr. 2	Reproductive toxicity, Category 2
3.8/3	STOT SE 3	Specific target organ toxicity — single exposure, Category 3
3.9/1	STOT RE 1	Specific target organ toxicity — repeated exposure, Category 1
4.1/A1	Aquatic Acute 1	Acute aquatic hazard, category 1
4.1/C1	Aquatic Chronic 1	Chronic (long term) aquatic hazard, category 1
4.1/C2	Aquatic Chronic 2	Chronic (long term) aquatic hazard, category 2

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Flam. Liq. 2, H225	On basis of test data
Eye Irrit. 2, H319	Calculation method
STOT SE 3, H336	Calculation method
Aquatic Chronic 2, H411	Calculation method

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

Legend to abbreviations and acronyms used in the safety data sheet:

ACGIH: American Conference of Governmental Industrial Hygienists

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

AND: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

BCF: Biological Concentration Factor

BEI: Biological Exposure Index

BOD: Biochemical Oxygen Demand

CAS: Chemical Abstracts Service (division of the American Chemical Society).

CAV: Poison Center

CE: European Community

CLP: Classification, Labeling, Packaging.

CMR: Carcinogenic, Mutagenic and Reprotoxic

COD: Chemical Oxygen Demand

COV: Volatile Organic Compound

CSA: Chemical Safety Assessment

CSR: Chemical Safety Report

DMEL: Derived Minimal Effect Level

DNEL: Derived No Effect Level.

DPD: Dangerous Preparations Directive

DSD: Dangerous Substances Directive

EC50: Half Maximal Effective Concentration

ECHA: European Chemicals Agency

EINECS: European Inventory of Existing Commercial Chemical Substances.

ES: Exposure Scenario

GefStoffVO: Ordinance on Hazardous Substances, Germany.

GHS: Globally Harmonized System of Classification and Labeling of Chemicals.

IARC: International Agency for Research on Cancer

IATA: International Air Transport Association.

IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).

IC50: half maximal inhibitory concentration

ICAO: International Civil Aviation Organization.

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).

IMDG: International Maritime Code for Dangerous Goods.

INCI: International Nomenclature of Cosmetic Ingredients.

IRCCS: Scientific Institute for Research, Hospitalization and Health Care

KAFH: Keep Away From Heat
KSt: Explosion coefficient.
LC50: Lethal concentration, for 50 percent of test population.
LD50: Lethal dose, for 50 percent of test population.
LDLo: Leathal Dose Low
N.A.: Not Applicable
N/A: Not Applicable
N/D: Not defined/ Not available
NA: Not available
NIOSH: National Institute for Occupational Safety and Health
NOAEL: No Observed Adverse Effect Level
OSHA: Occupational Safety and Health Administration
PBT: Persistent, Bioaccumulative and Toxic
PGK: Packaging Instruction
PNEC: Predicted No Effect Concentration.
PSG: Passengers
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL: Short Term Exposure limit.
STOT: Specific Target Organ Toxicity.
TLV: Threshold Limiting Value.
TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).
vPvB: Very Persistent, Very Bioaccumulative.
WGK: German Water Hazard Class.

Paragraphs modified from the previous revision:

- Safety Data Sheet
- SECTION 1: Identification of the substance/mixture and of the company/undertaking
- SECTION 2: Hazards identification
- SECTION 3: Composition/information on ingredients
- SECTION 7: Handling and storage
- SECTION 8: Exposure controls/personal protection
- SECTION 9: Physical and chemical properties
- SECTION 11: Toxicological information
- SECTION 12: Ecological information
- SECTION 13: Disposal considerations
- SECTION 14: Transport information
- SECTION 15: Regulatory information
- SECTION 16: Other information

Exposure Scenario
Zinc Oxide

Exposure Scenario, 04/07/2022

Substance identity	
	Zinc Oxide
CAS No.	1314-13-2
INDEX No.	030-013-00-7
EINECS No.	215-222-5
Registration number	01-2119463881-32

Table of contents

1. **ES 1** Widespread use by professional workers; Various products (PC9a, PC9b)

1. ES 1 Widespread use by professional workers; Various products (PC9a, PC9b)

1.1 TITLE SECTION

Exposure Scenario name	Professional application of coatings and inks - Use in rigid foams, coatings, adhesives and sealants
Date - Version	04/07/2022 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Coatings and paints, thinners, paint removers (PC9a) - Fillers, putties, plasters, modelling clay (PC9b)

Environment Contributing Scenario	
CS1	ERC8a - ERC8d

Worker Contributing Scenario	
CS2 Rolling, Brushing	PROC10
CS3 Rolling, Brushing	PROC10
CS4 Roller, spreader, flow application	PROC11
CS5 Roller, spreader, flow application	PROC11

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8a, ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)

Product (article) characteristics

Physical form of product:

Solid, medium dustiness

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use (or from service life)

Amounts used:

Application rate 50 t(onnes)/year

Release type: Intermittent release

Technical and organisational conditions and measures

Control measures to prevent releases

Upgrade of the system in place or additional air treatment measures, such as wet scrubber and/or air filtration and/or thermal oxidation and/or vapour recovery systems, in order to achieve a reduction of the air emissions.	Air - minimum efficiency of: > 50 %

Conditions and measures related to sewage treatment plant

STP type:

Municipal Sewage Treatment Plant

STP effluent (m^3/day): 2000

Conditions and measures related to treatment of waste (including article waste)

Waste treatment
Incineration, disposal or recycling at specific offsite provider

1.2. CS2: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:
Solid, medium dustiness

Concentration of substance in product:
Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Amounts used:
Application rate 50 t(onnes)/year
Application rate 0.15 tonnes/day

Duration:
Covers daily exposures up to 8 hours

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374. Wear suitable face shield. Use suitable eye protection. Provide employee with skin care programmes. Wear suitable respiratory protection.	Dermal - minimum efficiency of: >= 90 %

Other conditions affecting worker exposure

Indoor use
Professional use
Temperature: Assumes process temperature up to .... 25°C

1.2. CS3: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:
Solid, medium dustiness

Concentration of substance in product:
Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Amounts used:
Application rate 50 t(onnes)/year
Application rate 0.15 tonnes/day

Duration:
Covers daily exposures up to 8 hours

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374. Wear suitable face shield. Use suitable eye protection. Provide employee with skin care programmes.	Dermal - minimum efficiency of: >= 90 %

Wear suitable respiratory protection.	

Other conditions affecting worker exposure

Outdoor use
Professional use
Temperature: Assumes process temperature up to .... 25°C

1.2. CS4: Worker Contributing Scenario: Roller, spreader, flow application (PROC11)

Process Categories	Non industrial spraying (PROC11)

Product (article) characteristics

Physical form of product:
Solid, medium dustiness

Concentration of substance in product:
Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Amounts used:
Application rate 50 t(onnes)/year
Application rate 0.15 tonnes/day

Duration:
Covers daily exposures up to 8 hours

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374. Wear suitable face shield. Use suitable eye protection. Provide employee with skin care programmes. Wear suitable respiratory protection.	Dermal - minimum efficiency of: >= 90 %

Other conditions affecting worker exposure

Indoor use
Professional use
Temperature: Assumes process temperature up to .... 25°C

1.2. CS5: Worker Contributing Scenario: Roller, spreader, flow application (PROC11)

Process Categories	Non industrial spraying (PROC11)

Product (article) characteristics

Physical form of product:
Solid, medium dustiness

Concentration of substance in product:
Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Amounts used:
Application rate 50 t(onnes)/year
Application rate 0.15 tonnes/day

Duration:
Covers daily exposures up to 8 hours

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374. Wear suitable face shield. Use suitable eye protection. Provide employee with skin care programmes. Wear suitable respiratory protection.	Dermal - minimum efficiency of: >= 90 %

Other conditions affecting worker exposure

Outdoor use
Professional use
Temperature: Assumes process temperature up to .... 25°C

1.3 Exposure estimation and reference to its source

1.3. CS2: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic	<= 1.4 mg/day	MEASE	N/A
dermal, systemic	<= 0.12 mg/day	MEASE	N/A
combined routes, systemic	<= 1.5 mg/day	MEASE	<= 0.15

1.3. CS3: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic	<= 6 mg/day	MEASE	N/A
dermal, systemic	<= 0.12 mg/day	MEASE	N/A
combined routes, systemic	<= 6 mg/day	MEASE	<= 0.6

1.3. CS4: Worker Contributing Scenario: Roller, spreader, flow application (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic	<= 6 mg/day	MEASE	N/A
dermal, systemic	<= 0.12 mg/day	MEASE	N/A
combined routes, systemic	<= 6 mg/day	MEASE	<= 0.6

1.3. CS5: Worker Contributing Scenario: Roller, spreader, flow application (PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic	<= 24 mg/day	MEASE	N/A
dermal, systemic	<= 0.12 mg/day	MEASE	N/A

combined routes, systemic	<= 24 mg/day	MEASE	<= 2.4

1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Exposure Scenario
Ethyl acetate

Exposure Scenario, 13/07/2021

Substance identity	
	Ethyl acetate
CAS No.	141-78-6
INDEX No.	607-022-00-5
EINECS No.	205-500-4
Registration number	01-2119475103-46

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1. **ES 1** Widespread use by professional workers; Coatings and paints, thinners, paint removers (PC9a)

1. ES 1 Widespread use by professional workers; Coatings and paints, thinners, paint removers (PC9a)

1.1 TITLE SECTION

Exposure Scenario name	Professional application of coatings and inks by brush or roller - Handling and dilution of concentrates
Date - Version	13/07/2021 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Coatings and paints, thinners, paint removers (PC9a)

Environment Contributing Scenario

CS1	ERC8a - ERC8d

Worker Contributing Scenario

CS2 Handling and dilution of concentrates	PROC8a
CS3 Handling and dilution of concentrates	PROC10

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8a, ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers percentage substance in the product up to 100 %.

1.2. CS2: Worker Contributing Scenario: Handling and dilution of concentrates (PROC8a)

Process Categories	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)

Product (article) characteristics

Physical form of product:
Liquid

Concentration of substance in product:
Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:
Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Other conditions affecting worker exposure

Indoor use
Professional use
Temperature: Assumes use at not more than 20 °C above ambient temperature.

1.2. CS3: Worker Contributing Scenario: Handling and dilution of concentrates (PROC10)

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:

Liquid

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Ensure control measures are regularly inspected and maintained.
Provide extract ventilation to points where emissions occur.

Other conditions affecting worker exposure

Indoor use
Professional use
Temperature: Assumes use at not more than 20 °C above ambient temperature.

1.3 Exposure estimation and reference to its source

1.3. CS1: Environment Contributing Scenario (ERC8a, ERC8d)

Release route	Release rate	Release estimation method
Water	0.014 kg/day	N/A
Air	0.666 kg/day	N/A
soil	0 kg/day	N/A

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	= 0.0004036 mg/L	N/A	< 0.01
freshwater sediment	= 0.002 mg/kg KW	N/A	< 0.01
marine sediment	= 0.0003587 mg/kg KW	N/A	< 0.01
Agricultural soil	= 0.000113 mg/kg KW	N/A	< 0.336

1.3. CS2: Worker Contributing Scenario: Handling and dilution of concentrates (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	= 51.39 mg/m³	ECETOC TRA worker v3	= 0.07
inhalative, local, long-term	= 51.39 mg/m³	ECETOC TRA worker v3	= 0.07
dermal, systemic, long-term	= 13.71 mg/kg bw/day	ECETOC TRA worker v3	= 0.218

1.3. CS3: Worker Contributing Scenario: Handling and dilution of concentrates (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	= 51.39 mg/m³	ECETOC TRA worker v3	= 0.07
inhalative, local, long-term	= 51.39 mg/m³	ECETOC TRA worker v3	= 0.07
dermal, systemic, long-term	= 27.43 mg/kg bw/day	ECETOC TRA worker v3	= 0.435

1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Exposure Scenario
Acetone

Exposure Scenario, 27/08/2021

Substance identity	
	Acetone
CAS No.	67-64-1
INDEX No.	606-001-00-8
EINECS No.	200-662-2
Registration number	01-2119471330-49

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1. **ES 1** Widespread use by professional workers; Coatings and paints, thinners, paint removers (PC9a)

1. ES 1 Widespread use by professional workers; Coatings and paints, thinners, paint removers (PC9a)

1.1 TITLE SECTION

Exposure Scenario name	Professional application of coatings and inks
Date - Version	27/08/2021 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Coatings and paints, thinners, paint removers (PC9a)

Environment Contributing Scenario

CS1	ERC8a - ERC8c - ERC8d - ERC8f

Worker Contributing Scenario

CS2 Material transfers	PROC8a
CS3 Rolling, Brushing	PROC10

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario (ERC8a, ERC8c, ERC8d, ERC8f)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use leading to inclusion into/onto article (indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) - Widespread use leading to inclusion into/onto article (outdoor) (ERC8a, ERC8c, ERC8d, ERC8f)

Product (article) characteristics

Physical form of product:
Liquid, vapour pressure > 10 kPa at STP

Concentration of substance in product:
Covers concentrations up to 70 %

Amount used, frequency and duration of use (or from service life)

Emission days: 365 days per year

Conditions and measures related to treatment of waste (including article waste)

Waste treatment
External treatment and disposal of waste should comply with applicable local and/or national regulations.

Other conditions affecting environmental exposure

Local marine water dilution factor: 100
Local freshwater dilution factor: 10

1.2. CS2: Worker Contributing Scenario: Material transfers (PROC8a)

Process Categories	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)

Product (article) characteristics

Physical form of product:
Liquid, vapour pressure > 10 kPa at STP

Concentration of substance in product:
Covers concentrations up to 70 %

Amount used, frequency and duration of use/exposure

Duration:

Covers exposure up to 4 h

Technical and organisational conditions and measures

Technical and organisational measures
Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection
Wear suitable gloves tested to EN374.
Use suitable eye protection.

1.2. CS3: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Process Categories	Roller application or brushing (PROC10)

Product (article) characteristics

Physical form of product:
Liquid, vapour pressure > 10 kPa at STP

Concentration of substance in product:
Covers concentrations up to 70 %

Amount used, frequency and duration of use/exposure

Duration:
Covers exposure up to 4 h

Technical and organisational conditions and measures

Technical and organisational measures
Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection
Wear suitable gloves tested to EN374.
Use suitable eye protection.

1.3 Exposure estimation and reference to its source

1.3. CS1: Environment Contributing Scenario (ERC8a, ERC8c, ERC8d, ERC8f)

Additional information on exposure estimation:
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

1.3. CS2: Worker Contributing Scenario: Material transfers (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative	N/A	ECETOC TRA worker v2.0	= 0.6
dermal	N/A	ECETOC TRA worker v2.0	= 0.07
combined routes	N/A	ECETOC TRA worker v2.0	= 0.67

1.3. CS3: Worker Contributing Scenario: Rolling, Brushing (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative	N/A	ECETOC TRA worker v2.0	= 0.6
dermal	N/A	ECETOC TRA worker v2.0	= 0.15
combined routes	N/A	ECETOC TRA worker v2.0	= 0.75

1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.