# Paint-Riter ™ + Heat Treat (2100F, 2200F) White, Yellow, Black, Blue

Safety Data Sheet

according to Regulation (EU) 2015/830

Issue date: 8/10/2020 Version: 1.0

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

### 1.1. Product identifier

Product form : Mixture

Product name : Paint-Riter ™ + Heat Treat (2100F, 2200F) White, Yellow, Black, Blue

Other means of identification : UFI White: MGF2-WX3K-EU1M-E7A2

UFI Yellow: UNF2-WXGD-1U1K-RWG6

UFI Black: 3WF2-EXJJ-YU12-RX7D

UFI Blue: F8G2-FXA5-6U12-D9JN

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

#### 1.2.1. Relevant identified uses

Main use category : Industrial use,Professional use

Use of the substance/mixture : Marking.

#### 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 220115 Minsk | +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 Totleben 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 |

| EU Member State | Officieel adviesorgaan | Adres | Noodnummer |
|---|---|---|---|
| HUNGARY | Országos Kémiai Biztonsági Intézet (National Institute of Chemical Safety)<br>Egészségügyi Toxikológiai Tájékoztató Szolgálat (Health Toxicological Information Service) | 1437 Budapest PO Box 839<br>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<br>Beaumont Road 9 Dublin | +353 1 809 2166 |
| 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<br>National Institute for Public Health and the Environment, NB this service is only available to health professionals | Huispostnummer B.00.118, PO Box 85500<br>3508 GA Utrecht | +31 30 274 88 88 |
| PORTUGAL | Centro de Informação Antivenenos<br>Instituto Nacional de Emergência Médica (INEM) | Rua Almirante Barroso, 36<br>1000-013 Lisboa | 808 250 143 (for use only in Portugal),<br>+351 21 330 3284 |
| ROMANIA | Biroul pentru Regulamentul Sanitar International si Informare Toxicologica | Str. Dr. Leonte Anastasievici Nr.1-3, Sector 5<br>50463 Bucuresti | +40 21 318 36 06 |
| SLOVAKIA | Národné toxikologické informačné centrum<br>University Hospital Bratislava | Limbová 5<br>833 05 Bratislava | +421 2 54 77 4 166 |
| SPAIN | Servicio de Información Toxicológica<br>Instituto Nacional de Toxicología, Departamento de Madrid | Calle Luis Cabrera 9<br>E-28002 Madrid | +34 91 562 04 20 |
| SWEDEN | Giftinformationscentralen<br>Swedish Poisons Information Centre, Karolinska Hospital | Box 60 500<br>SE-171 76 Stockholm | +46 8 33 12 31<br>(International) 112 (National) |
| SWITZERLAND | Centre Suisse d'Information Toxicologique | Freiestrasse 16 Postfach CH-8028 Zurich | +41 44 251 51 51<br>(International) 145 (National) |

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

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

Flammable liquids, Category 2 H225

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) :

GHS02

Signal word (CLP) : Danger

Hazard statements (CLP) : H225 - Highly flammable liquid and vapour.

Precautionary statements (CLP) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 - Keep container tightly closed.
P240 - Ground and bond container and receiving equipment.
P241 - Use explosion-proof electrical/ventilating/lighting equipment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water .
P370+P378 - In case of fire: Use media other than water to extinguish.
P403+P235 - Store in a well-ventilated place. Keep cool.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

EUH-statements : EUH211: Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

**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] |
|---|---|---|---|
| dimethyl carbonate | (CAS-No.) 616-38-6<br>(EC-No.) 210-478-4<br>(EC Index-No.) 607-013-00-6 | 15 - 45 | Flam. Liq. 2, H225 |
| Titanium dioxide | (CAS-No.) 13463-67-7<br>(EC-No.) 236-675-5 | 0 - 40 | Not classified |
| antimony nickel titanium oxide; Pigment Yellow 53; C.I. 77788<br>substance listed as REACH Candidate | (CAS-No.) 8007-18-9<br>(EC-No.) 232-353-3 | 0 - 30 | Not classified |
| cobalt aluminate blue spinel C.I. 77346 | (CAS-No.) 1345-16-0<br>(EC-No.) 310-193-6 | 0 – 25 | Not classified |
| Cyclohexanone | (CAS-No.) 108-94-1<br>(EC-No.) 203-631-1<br>(EC Index-No.) 606-010-00-7<br>(REACH-no) 01-2119453616-35 | 5 - 10 | Flam. Liq. 3, H226<br>Acute Tox. 4 (Inhalation:dust,mist), H332 |
| Silicon dioxide (amorphous) | (CAS-No.) 7631-86-9<br>(EC-No.) 231-545-4 | 0 - 5 | Not classified |
| Aluminum hydroxide | (CAS-No.) 21645-51-2<br>(EC-No.) 244-492-7 | 0 - 5 | Not classified |
| (2-Methoxymethylethoxy)-propanol | (CAS-No.) 34590-94-8<br>(EC-No.) 252-104-2 | 0.1 - 0.5 | Not classified |
| Aluminum oxide | (CAS-No.) 1344-28-1<br>(EC-No.) 215-691-6 | 0 - 1 | Not classified |

Full text of H-statements: see section 16

## 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 exposed or concerned: Get medical advice/attention.
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 : Wash skin thoroughly with mild soap and water. Take off contaminated clothing and wash it before reuse.
First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
First-aid measures after ingestion : Do NOT induce vomiting. Call a POISON CENTER/doctor if you feel unwell.

**4.2. Most important symptoms and effects, both acute and delayed**
Symptoms/effects after inhalation : Inhalation of vapours may cause respiratory irritation.
Symptoms/effects after ingestion : Like any product not designed to be ingested, this product may cause stomach distress if ingested in large quantities.

**4.3. Indication of any immediate medical attention and special treatment needed**
Treat symptomatically and supportively.

## SECTION 5: Firefighting measures

**5.1. Extinguishing media**
Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media : None known.

**5.2. Special hazards arising from the substance or mixture**
Fire hazard : Burning produces irritating, toxic and noxious fumes. Carbon oxides (CO, CO2). Highly flammable liquid and vapour. Heavier than air, vapours may travel long distances along ground, ignite and flash back to source. Flammable vapours may accumulate in the container.
Explosion hazard : May form flammable/explosive vapour-air mixture. Heat may build pressure, rupturing closed containers.

Hazardous decomposition products in case of fire : Carbon dioxide. Carbon monoxide. metallic oxides.

**5.3. Advice for firefighters**

Precautionary measures fire : Store in dry, cool, well-ventilated area.

Firefighting instructions : Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Use self-contained breathing apparatus. EN469.

## SECTION 6: Accidental release measures

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

General measures : Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking. Do not breathe aerosol. Do not breathe vapour. Do not get in eyes, on skin, or on clothing.

**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**

Avoid release to the environment.

**6.3. Methods and material for containment and cleaning up**

For containment : Absorb and/or contain spill with inert material, then place in suitable container.

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Take up in non-combustible absorbent material and shove into container for disposal.

**6.4. Reference to other sections**

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling**

Precautions for safe handling : No open flames. No smoking. Use only non-sparking tools. Use only outdoors or in a well-ventilated area. Do not breathe aerosol. Do not breathe vapours. Do not get in eyes, on skin, or on clothing.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

**7.2. Conditions for safe storage, including any incompatibilities**

Storage conditions : Keep container tightly closed. Keep away from open flames, hot surfaces and sources of ignition.

Incompatible products : Alkali. Oxidizer. acid. Moisture.

Incompatible materials : Heat sources.

Heat and ignition sources : Keep away from heat, sparks and flame.

Prohibitions on mixed storage : Incompatible materials.

**7.3. Specific end use(s)**

Marking.

## SECTION 8: Exposure controls/personal protection

**8.1. Control parameters**

| **Cyclohexanone (108-94-1)** | |
|---|---|
| **EU - Occupational Exposure Limits** | |
| Local name | Cyclohexanone |
| IOELV TWA (mg/m³) | 40.8 mg/m³ |
| IOELV TWA (ppm) | 10 ppm |
| IOELV STEL (mg/m³) | 81.6 mg/m³ |
| IOELV STEL (ppm) | 20 ppm |
| Notes | Skin |
| Regulatory reference | COMMISSION DIRECTIVE 2000/39/EC |
| **Austria - Occupational Exposure Limits** | |
| MAK (mg/m³) | 20 mg/m³ (H) |
| MAK Daily average value (ppm) | 5 ppm (H) |
| MAK Short time value (mg/m³) | 80 mg/m³ max. 4x15 min./Schicht, (H) |

| | |
|---|---|
| **Cyclohexanone (108-94-1)** | |
| MAK Short time value (ppm) | 20 ppm max. 4x15 min./Schicht, (H) |
| **Belgium - Occupational Exposure Limits** | |
| Limit value (mg/m³) | 40.8 mg/m³ |
| Limit value (ppm) | 10 ppm |
| Short time value (mg/m³) | 81.6 mg/m³ |
| Short time value (ppm) | 20 ppm |
| Remark (BE) | D |
| **Czech Republic - Occupational Exposure Limits** | |
| Local name | Cyklohexanon |
| Expoziční limity (PEL) (mg/m³) | 40 mg/m³ |
| Expoziční limity (PEL) (ppm) | 9.8 ppm |
| Expoziční limity (NPK-P) (mg/m³) | 80 mg/m³ |
| Expoziční limity (NPK-P) (ppm) | 19.6 ppm |
| Remark (CZ) | D - při expozici se významně uplatňuje pronikání faktoru kůží, B - u látky je zaveden biologický expoziční test (BET) v moči nebo krvi. |
| Regulatory reference | Nařízení vlády č. 361/2007 Sb. (Předpis 41/2020 Sb.) |
| **Czech Republic - Biological limit values** | |
| Local name | Cyklohexanon |
| Czech Republic - BLV | 50 mg/g creatinine Ukazatel: 1,2-Cyklohexandiol (po hydrolýze) - Biologický uzorak: moči - Doba odběru: konec směny na konci pracovního týdne<br>0.049 mmol/mmol Creatinine Ukazatel: 1,2-Cyklohexandiol (po hydrolýze) - Biologický uzorak: moči - Doba odběru: konec směny na konci pracovního týdne |
| Regulatory reference | Vyhláška č. 107/2013 Sb. (kterou se mění vyhláška č. 432/2003 Sb.) |
| **Denmark - Occupational Exposure Limits** | |
| Local name | Cyclohexanon (Anon) |
| Grænsevædi (8 timer) (mg/m³) | 41 mg/m³ |
| Grænsevædi (8 timer) (ppm) | 10 ppm |
| Grænsevædi (STEL) (mg/m³) | 80 mg/m³ |
| Grænsevædi (STEL) (ppm) | 20 ppm |
| Anmærkninger (DK) | E (betyder, at stoffet har en EF-grænseværdi); H (betyder, at stoffet kan optages gennem huden) |
| Regulatory reference | BEK nr 1458 af 13/12/2019 |
| **Finland - Occupational Exposure Limits** | |
| Local name | Sykloheksanoni |
| HTP-arvo (8h) (mg/m³) | 41 mg/m³ |
| HTP-arvo (8h) (ppm) | 10 ppm |
| HTP-arvo (15 min) | 82 mg/m³ |
| HTP-arvo (15 min) (ppm) | 20 ppm |
| Huomautus (FI) | iho |
| Regulatory reference | HTP-ARVOT 2018 (Sosiaali- ja terveysministeriö) |
| **France - Occupational Exposure Limits** | |
| Local name | Cyclohexanone |
| VME (mg/m³) | 40.8 mg/m³ |
| VME (ppm) | 10 ppm |
| VLE (mg/m³) | 81.6 mg/m³ |
| VLE (ppm) | 20 ppm |

| | |
|---|---|
| **Cyclohexanone (108-94-1)** | |
| Note (FR) | Valeurs règlementaires contraignantes |
| Regulatory reference | Article R4412-149 du Code du travail (réf.: INRS ED 984, 2016; Décret n° 2019-1487) |
| **Germany - Occupational Exposure Limits (TRGS 900)** | |
| TRGS 900 Local name | Cyclohexanon |
| Occupational exposure limit value (mg/m³) | 80 mg/m³ |
| Occupational exposure limit value (ppm) | 20 ppm |
| Peak exposure limitation factor | 1(I) |
| TRGS 900 Remark | AGS;EU;H;Y |
| TRGS 900 Regulatory reference | TRGS900 |
| **Hungary - Occupational Exposure Limits** | |
| Local name | CIKLOHEXANON |
| AK-érték | 40.8 mg/m³ |
| CK-érték | 81.6 mg/m³ |
| Megjegyzések (HU) | b (Bőrön át is felszívódik), i (ingerlő anyag, amely izgatja a bőrt, nyálkahártyát, szemet vagy mindhármat); EU1 (2000/39/EK irányelvben közölt érték); T (Azok az anyagok, amelyek egészségkárosító hatása TARTÓS expozíciót követően jelentkezik) |
| Regulatory reference | 5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről |
| **Ireland - Occupational Exposure Limits** | |
| OEL (8 hours ref) (mg/m³) | 40.8 mg/m³ |
| OEL (8 hours ref) (ppm) | 10 ppm |
| OEL (15 min ref) (mg/m3) | 81.6 mg/m³ |
| OEL (15 min ref) (ppm) | 20 ppm |
| Notes (IE) | Sk, IOELV |
| **Italy - Occupational Exposure Limits** | |
| Local name | Cicloesanone |
| OEL TWA (mg/m³) | 40.8 mg/m³ |
| OEL TWA (ppm) | 10 ppm |
| OEL STEL (mg/m³) | 81.6 mg/m³ |
| OEL STEL (ppm) | 20 ppm |
| Notes | pelle |
| Regulatory reference | Allegato XXXVIII del D.Lgs. 9 aprile 2008, n. 81 e s.m.i. |
| **Latvia - Occupational Exposure Limits** | |
| Local name | Cikloheksanons |
| OEL TWA (mg/m³) | 40.8 mg/m³ |
| OEL TWA (ppm) | 10 ppm |
| OEL STEL (mg/m³) | 81.6 mg/m³ |
| OEL STEL (ppm) | 20 ppm |
| Remark (LV) | Āda |
| Regulatory reference | Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 |
| **Lithuania - Occupational Exposure Limits** | |
| IPRV (mg/m³) | 40.8 mg/m³ |
| IPRV (ppm) | 10 ppm |
| TPRV (mg/m³) | 81.6 mg/m³ |
| TPRV (ppm) | 20 ppm |
| Remark (LT) | O |

| **Cyclohexanone (108-94-1)** | |
|---|---|
| **Netherlands - Occupational Exposure Limits** | |
| Local name | Cyclohexanon |
| Grenswaarde TGG 15MIN (mg/m³) | 50 mg/m³ |
| 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. |
| Regulatory reference | Arbeidsomstandighedenregeling 2020 |
| **Poland - Occupational Exposure Limits** | |
| Local name | Cykloheksanon |
| NDS (mg/m³) | 40 mg/m³ |
| NDSCh (mg/m³) | 80 mg/m³ |
| Remark (PL) | Skóra (Oznakowanie substancji notacją „skóra” oznacza, że wchłanianie substancji przez skórę może być tak samo istotne jak przy narażeniu drogą oddechową). |
| Regulatory reference | Dz. U. 2018 poz. 1286 |
| **Portugal - Occupational Exposure Limits** | |
| Local name | Ciclo-hexanona |
| OEL TWA (ppm) | 20 ppm |
| OEL STEL (ppm) | 50 ppm |
| Regulatory reference | Norma Portuguesa NP 1796:2014 |
| **Portugal - Biological limit values** | |
| Local name | Ciclo-hexanona |
| Portugal (BEI) | 80 mg/l Parâmetro: 1,2-Ciclo-hexanodiol - Meio: urina - Momento da amostragem: Fim do turno no fim da semana de trabalho - Notaçao: Ne (Não específico), Sq (Semi quantitativo), Com hidrólise<br>8 mg/l Parâmetro: Ciclo-hexanol - Meio: urina - Momento da amostragem: Fim do turno - Notaçao: Ne (Não específico), Sq (Semi quantitativo), Com hidrólise |
| Regulatory reference | Norma Portuguesa NP 1796:2014 |
| **Slovakia - Occupational Exposure Limits** | |
| Local name | Cyklohexanón |
| NPHV (priemerná) (mg/m³) | 41 mg/m³ |
| NPHV (priemerná) (ppm) | 10 ppm |
| OEL STEL (mg/m³) | 82 mg/m³ |
| OEL STEL (ppm) | 20 ppm |
| Upozornenie (SK) | K - znamená, že faktor môže byť ľahko absorbovaný kožou |
| Regulatory reference | Nariadenie vlády č. 33/2018 Z. z. |
| **Slovenia - Occupational Exposure Limits** | |
| Local name | cikloheksanon |
| OEL TWA (mg/m³) | 40.8 mg/m³ |
| OEL TWA (ppm) | 10 ppm |
| OEL STEL (mg/m³) | 81.6 mg/m³ |
| OEL STEL (ppm) | 20 ppm |
| Remark (SI) | K (Lastnost lažjega prehajanja snovi v organizem skozi kožo), Y (Snovi, pri katerih ni nevarnosti za zarodek ob upoštevanju mejnih vrednosti in bat vrednosti), EKA (Zveza med koncentracijo rakotvornih snovi v zraku na delovnem mestu in količino snovi in/ali njenih metabolitov v organizmu), EU |
| Regulatory reference | Uradni list RS, št. 78/2019 z dne 20.12.2019 |
| **Spain - Occupational Exposure Limits** | |
| Local name | Ciclohexanona |

| **Cyclohexanone (108-94-1)** | |
|---|---|
| VLA-ED (mg/m³) | 41 mg/m³ |
| VLA-ED (ppm) | 10 ppm |
| VLA-EC (mg/m³) | 82 mg/m³ |
| VLA-EC (ppm) | 20 ppm |
| 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), VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo), VLB® (Agente químico que tiene Valor Límite Biológico). |
| Regulatory reference | Límites de Exposición Profesional para Agentes Químicos en España 2019. INSHT |
| **Spain - Biological limit values** | |
| Local name | Ciclohexanona |
| Spain - BLV | 80 mg/l Parámetro: 1,2-Ciclohexanodiol - Medio: Orina - Momento de muestreo: Final de la semana laboral - Notas: I (Significa que el indicador biológico es inespecífico puesto que puede encontrarse después de la exposición a otros agentes químicos), S (Significa que el indicador biológico es un indicador de exposición al agente químico en cuestión, pero la interpretación cuantitativa de su medida es ambigua (semicuantitativa). Estos indicadores biológicos deben utilizarse como una prueba de selección (screening) cuando no se pueda realizar una prueba cuantitativa o usarse como prueba de confirmación, si la prueba cuantitativa no es específica y el origen del determinante es dudoso), Con hidrólisis<br>8 mg/l Parámetro: Ciclohexanol - Medio: Orina - Momento de muestreo: Final de la jornada laboral - Notas: I (Significa que el indicador biológico es inespecífico puesto que puede encontrarse después de la exposición a otros agentes químicos), S (Significa que el indicador biológico es un indicador de exposición al agente químico en cuestión, pero la interpretación cuantitativa de su medida es ambigua (semicuantitativa). Estos indicadores biológicos deben utilizarse como una prueba de selección (screening) cuando no se pueda realizar una prueba cuantitativa o usarse como prueba de confirmación, si la prueba cuantitativa no es específica y el origen del determinante es dudoso), Con hidrólisis |
| Regulatory reference | Límites de Exposición Profesional para Agentes Químicos en España 2019. INSHT |
| **Sweden - Occupational Exposure Limits** | |
| Local name | Cyklohexanon |
| nivågränsvärde (NVG) (mg/m³) | 41 mg/m³ |
| nivågränsvärde (NVG) (ppm) | 10 ppm |
| kortidsvärde (KTV) (mg/m³) | 81 mg/m³ |
| kortidsvärde (KTV) (ppm) | 20 ppm |
| Anmärkning (SE) | 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) |
| Regulatory reference | Hygieniska gränsvärden (AFS 2018:1) |
| **United Kingdom - Occupational Exposure Limits** | |
| WEL TWA (mg/m³) | 41 mg/m³ (Sk) |
| WEL TWA (ppm) | 10 ppm (Sk)<br>2 ppm (yclohexanol/mol creatine in urine, Posr shift) |
| WEL STEL (mg/m³) | 82 mg/m³ (Sk) |
| WEL STEL (ppm) | 20 ppm (Sk) |
| **Norway - Occupational Exposure Limits** | |
| Local name | Sykloheksanon (Anon) |
| Grenseverdier (AN) (mg/m³) | 40 mg/m³ |
| Grenseverdier (AN) (ppm) | 10 ppm |
| Grenseverdier (Korttidsverdi) (mg/m3) | 80 mg/m³ |
| Grenseverdier (Korttidsverdi) (ppm) | 20 ppm |

| **Cyclohexanone (108-94-1)** | |
|---|---|
| Merknader (NO) | H: Kjemikalier som kan tas opp gjennom huden; E: EU har en veiledende grenseverdi for stoffet. |
| Regulatory reference | FOR-2020-04-06-695 |
| **Switzerland - Occupational Exposure Limits** | |
| VME (mg/m³) | 100 mg/m³ |
| MAK (ppm) | 25 ppm<br>100 ppm (urina; in caso di esposizione per molto tempo/fine dell'esposizione / del turno) |
| KZGW (mg/m³) | 200 mg/m³ max. 4x30 min./turno |
| KZGW (ppm) | 50 ppm max. 4x30 min./turno |

| **Aluminum oxide (1344-28-1)** | |
|---|---|
| **Austria - Occupational Exposure Limits** | |
| MAK (mg/m³) | 10 mg/m³ (gemessen als einatembarer Aerosolanteil)<br>5 mg/m³ (alveolengängiger Anteil) |
| MAK Short time value (mg/m³) | 20 mg/m³ (gemessen als einatembarer Aerosolanteil) max. 2x60 min./Schicht<br>10 mg/m³ (alveolengängiger Anteil) max. 2x60 min./Schicht |
| **Belgium - Occupational Exposure Limits** | |
| Limit value (mg/m³) | 10 mg/m³ |
| Remark (BE) | (oxyde d´) (en Al) |
| **Denmark - Occupational Exposure Limits** | |
| Local name | Aluminiumoxid |
| Grænsevædi (8 timer) (mg/m³) | 5 mg/m³ beregnet som Al, total<br>2 mg/m³ beregnet som Al, respirabel |
| Grænsevædi (STEL) (mg/m³) | 10 mg/m³ (total)<br>4 mg/m³ (respirabel) |
| Regulatory reference | BEK nr 1458 af 13/12/2019 |
| **France - Occupational Exposure Limits** | |
| Local name | Aluminium (Trioxyde de di-) |
| VME (mg/m³) | 10 mg/m³ |
| Note (FR) | Valeurs recommandées/admises |
| Regulatory reference | Circulaire du Ministère du travail (réf.: INRS ED 984, 2016) |
| **Germany - Occupational Exposure Limits (TRGS 900)** | |
| Occupational exposure limit value (mg/m³) | 3 mg/m³ |
| TRGS 900 Remark | (gemessen als alveolengängiger Staubanteil) |
| **Hungary - Occupational Exposure Limits** | |
| Megjegyzések (HU) | (respirable aerosol) |
| **Ireland - Occupational Exposure Limits** | |
| OEL (8 hours ref) (mg/m³) | 10 mg/m³ (total inhalable dust)<br>4 mg/m³ (respirable dust) |
| **Latvia - Occupational Exposure Limits** | |
| Local name | Alumīnija oksīds |
| OEL TWA (mg/m³) | 6 mg/m³ dezintegrācijas aerosola veidā<br>4 mg/m³ maisījumā ar niķeli (līdz 15%), (elektrokorunds) |
| Regulatory reference | Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2011. gada 1. februārī noteikumiem Nr. 92) |
| **Lithuania - Occupational Exposure Limits** | |
| IPRV (mg/m³) | 2 mg/m³ |
| Remark (LT) | (alveolinė frakcija. Þiûrëk IX skyriaus 3 pastabà.) |

| **Aluminum oxide (1344-28-1)** | |
|---|---|
| **Poland - Occupational Exposure Limits** | |
| Local name | Tritlenek glinu |
| NDS (mg/m³) | 2.5 mg/m³ w przeliczeniu na Al: frakcja wdychalna<br>1.2 mg/m³ w przeliczeniu na Al: frakcja respirabilna |
| Remark (PL) | Frakcja wdychalna – frakcja aerozolu wnikająca przez nos i usta, która po zdeponowaniu w drogach oddechowych stwarza zagrożenie dla zdrowia. Frakcja respirabilna – frakcja aerozolu wnikająca do dróg oddechowych, która stwarza zagrożenie dla zdrowia po zdeponowaniu w obszarze wymiany gazowej. |
| Regulatory reference | Dz. U. 2018 poz. 1286 |
| **Slovakia - Occupational Exposure Limits** | |
| Local name | Oxid hlinitý |
| NPHV (priemerná) (mg/m³) | 4 mg/m³ inhalovateľná frakcia – prach<br>1.5 mg/m³ respirabilná frakcia – prach |
| Regulatory reference | Nariadenie vlády č. 33/2018 Z. z. |
| **Spain - Occupational Exposure Limits** | |
| Local name | Óxido de aluminio (Corindón) |
| VLA-ED (mg/m³) | 10 mg/m³ |
| Regulatory reference | Límites de Exposición Profesional para Agentes Químicos en España 2019. INSHT |
| **Sweden - Occupational Exposure Limits** | |
| nivågränsvärde (NVG) (mg/m³) | 5 mg/m³ (inhalable aerosol)<br>2 mg/m³ (respirable aerosol) |
| **United Kingdom - Occupational Exposure Limits** | |
| WEL TWA (mg/m³) | 10 mg/m³ (inhalable aerosol)<br>4 mg/m³ (respirable aerosol) |
| **Norway - Occupational Exposure Limits** | |
| Local name | Aluminiumoksid |
| Grenseverdier (AN) (mg/m³) | 10 mg/m³ |
| Merknader (NO) | 1) Grenseverdien er fastsatt lik verdien for sjenerende støv. |
| Regulatory reference | FOR-2020-04-06-695 |
| **Switzerland - Occupational Exposure Limits** | |
| VME (mg/m³) | 3 mg/m³ |
| Remark | (respirable aerosol) |

| **Aluminum hydroxide (21645-51-2)** | |
|---|---|
| **Austria - Occupational Exposure Limits** | |
| MAK Daily average value (ppm) | 10 ppm (gemessen als einatembarer Aerosolanteil)<br>5 ppm (alveolengängiger Anteil) |
| MAK Short time value (ppm) | 20 ppm (gemessen als einatembarer Aerosolanteil) max. 2x60 min./Schicht<br>10 ppm (alveolengängiger Anteil) max. 2x60 min./Schicht |
| **Latvia - Occupational Exposure Limits** | |
| Local name | Alumīnija hidroksīds |
| OEL TWA (mg/m³) | 6 mg/m³ |
| Regulatory reference | Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2011. gada 1. februārī noteikumiem Nr. 92) |
| **Lithuania - Occupational Exposure Limits** | |
| IPRV (mg/m³) | 6 mg/m³ |
| Remark (LT) | F |
| **Poland - Occupational Exposure Limits** | |
| Local name | Wodorotlenek glinu |

| **Aluminum hydroxide (21645-51-2)** | |
|---|---|
| NDS (mg/m³) | 2.5 mg/m³ w przeliczeniu na Al: frakcja wdychalna<br>1.2 mg/m³ w przeliczeniu na Al: frakcja respirabilna |
| Remark (PL) | Frakcja wdychalna – frakcja aerozolu wnikająca przez nos i usta, która po zdeponowaniu w drogach oddechowych stwarza zagrożenie dla zdrowia. Frakcja respirabilna – frakcja aerozolu wnikająca do dróg oddechowych, która stwarza zagrożenie dla zdrowia po zdeponowaniu w obszarze wymiany gazowej. |
| Regulatory reference | Dz. U. 2018 poz. 1286 |
| **Slovakia - Occupational Exposure Limits** | |
| Local name | Hydroxid hlinitý |
| NPHV (priemerná) (mg/m³) | 4 mg/m³ inhalovateľná frakcia – prach<br>1.5 mg/m³ respirabilná frakcia – prach |
| Regulatory reference | Nariadenie vlády č. 33/2018 Z. z. |
| **Switzerland - Occupational Exposure Limits** | |
| VME (mg/m³) | 3 mg/m³ |
| Remark | (alveolengängige Fraktion) |

| **(2-Methoxymethylethoxy)-propanol (34590-94-8)** | |
|---|---|
| **EU - Occupational Exposure Limits** | |
| Local name | (2-Methoxymethylethoxy)-propanol |
| IOELV TWA (mg/m³) | 308 mg/m³ |
| IOELV TWA (ppm) | 50 ppm |
| Notes | Skin |
| Regulatory reference | COMMISSION DIRECTIVE 2000/39/EC |
| **Austria - Occupational Exposure Limits** | |
| MAK (mg/m³) | 307 mg/m³ |
| MAK Daily average value (ppm) | 50 ppm |
| MAK Short time value (mg/m³) | 614 mg/m³ |
| MAK Short time value (ppm) | 100 ppm |
| Remark (AT) | max. 8x5 min./Schicht (gemessen als Momentanwert) |
| **Belgium - Occupational Exposure Limits** | |
| Limit value (mg/m³) | 308 mg/m³ |
| Limit value (ppm) | 50 ppm |
| Remark (BE) | D |
| **Czech Republic - Occupational Exposure Limits** | |
| Local name | (2-Methoxymethylethoxy)-propanol (směs isomerů) |
| Expoziční limity (PEL) (mg/m³) | 270 mg/m³ |
| Expoziční limity (PEL) (ppm) | 43.7 ppm |
| Expoziční limity (NPK-P) (mg/m³) | 550 mg/m³ |
| Expoziční limity (NPK-P) (ppm) | 89.1 ppm |
| Remark (CZ) | D - při expozici se významně uplatňuje pronikání faktoru kůží. |
| Regulatory reference | Nařízení vlády č. 361/2007 Sb. (Předpis 41/2020 Sb.) |
| **Denmark - Occupational Exposure Limits** | |
| Local name | Dipropylenglycolmethylether (Methoxypropoxypropanol) |
| Grænsevædi (8 timer) (mg/m³) | 309 mg/m³ |
| Grænsevædi (8 timer) (ppm) | 50 ppm |
| Grænsevædi (STEL) (mg/m³) | 600 mg/m³ |
| Grænsevædi (STEL) (ppm) | 100 ppm |

| | |
|---|---|
| **(2-Methoxymethylethoxy)-propanol (34590-94-8)** | |
| Anmærkninger (DK) | E (betyder, at stoffet har en EF-grænseværdi); H (betyder, at stoffet kan optages gennem huden) |
| Regulatory reference | BEK nr 1458 af 13/12/2019 |
| **Finland - Occupational Exposure Limits** | |
| Local name | (2-Metoksimetyylietoksi)-propanoli |
| HTP-arvo (8h) (mg/m³) | 310 mg/m³ |
| HTP-arvo (8h) (ppm) | 50 ppm |
| Huomautus (FI) | iho |
| Regulatory reference | HTP-ARVOT 2018 (Sosiaali- ja terveysministeriö) |
| **France - Occupational Exposure Limits** | |
| Local name | (2-méthoxyméthyléthoxy)-propanol |
| VME (mg/m³) | 308 mg/m³ |
| VME (ppm) | 50 ppm |
| Note (FR) | Valeurs règlementaires contraignantes; risque de pénétration percutanée |
| Regulatory reference | Article R4412-149 du Code du travail (réf.: INRS ED 984, 2016; Décret n° 2019-1487) |
| **Germany - Occupational Exposure Limits (TRGS 900)** | |
| TRGS 900 Local name | (2-Methoxymethyl-ethoxy)propanol (Isomerengemisch) |
| Occupational exposure limit value (mg/m³) | 310 mg/m³ |
| Occupational exposure limit value (ppm) | 50 ppm |
| Limitation of exposure peaks (mg/m³) | 310 mg/m³ |
| Limitation of exposure peaks (ppm) | 50 ppm |
| Peak exposure limitation factor | 1(I) |
| TRGS 900 Remark | DFG;EU;11 |
| TRGS 900 Regulatory reference | TRGS900 |
| **Hungary - Occupational Exposure Limits** | |
| Local name | (2-METOXIMETILETOXI)-PROPANOL (Dipropilénglikol-monometil-éter) |
| AK-érték | 308 mg/m³ |
| CK-érték | 308 mg/m³ |
| Megjegyzések (HU) | EU1 (2000/39/EK irányelvben közölt érték); R (Azok az anyagok, amelyek egészségkárosító hatása RÖVID expozíció hatására jelentkezik) |
| Regulatory reference | 5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről |
| **Ireland - Occupational Exposure Limits** | |
| OEL (8 hours ref) (mg/m³) | 308 mg/m³ |
| OEL (8 hours ref) (ppm) | 50 ppm |
| Notes (IE) | Sk, IOELV |
| **Italy - Occupational Exposure Limits** | |
| Local name | (2-metossimetiletossi)-propanolo |
| OEL TWA (mg/m³) | 308 mg/m³ |
| OEL TWA (ppm) | 50 ppm |
| Notes | pelle |
| Regulatory reference | Allegato XXXVIII del D.Lgs. 9 aprile 2008, n. 81 e s.m.i. |
| **Latvia - Occupational Exposure Limits** | |
| Local name | Metoksipropoksi propanols (dipropilēnglikola monometilēteris, DPM) |
| OEL TWA (mg/m³) | 308 mg/m³ |
| OEL TWA (ppm) | 50 ppm |

| | |
|---|---|
| **(2-Methoxymethylethoxy)-propanol (34590-94-8)** | |
| Remark (LV) | Āda |
| Regulatory reference | Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2011. gada 1. februārī noteikumiem Nr. 92) |
| **Lithuania - Occupational Exposure Limits** | |
| IPRV (mg/m³) | 300 mg/m³ |
| IPRV (ppm) | 50 ppm |
| TPRV (mg/m³) | 450 mg/m³ |
| TPRV (ppm) | 75 ppm |
| Remark (LT) | O |
| **Netherlands - Occupational Exposure Limits** | |
| Local name | Dipropyleenglycolmethylether |
| Grenswaarde TGG 8H (mg/m³) | 300 mg/m³ |
| Regulatory reference | Arbeidsomstandighedenregeling 2020 |
| **Poland - Occupational Exposure Limits** | |
| Local name | (2-Metoksymetyloetoksy)propanol - mieszanina izomerów: 1-(2-metoksy-1-metyloetoksy)propan-2-ol, 1-(2-metoksy-2-metyloetoksy)propan-2-ol, 2-(2-metoksy-1-metyloetoksy)propan-1-ol |
| NDS (mg/m³) | 240 mg/m³ |
| NDSCh (mg/m³) | 480 mg/m³ |
| Remark (PL) | Skóra (Oznakowanie substancji notacją „skóra” oznacza, że wchłanianie substancji przez skórę może być tak samo istotne jak przy narażeniu drogą oddechową). |
| Regulatory reference | Dz. U. 2018 poz. 1286 |
| **Portugal - Occupational Exposure Limits** | |
| Local name | 2-Metoximetiletoxipropanol (DPGME) |
| OEL TWA (ppm) | 100 ppm |
| OEL STEL (ppm) | 150 ppm |
| Regulatory reference | Norma Portuguesa NP 1796:2014 |
| **Slovakia - Occupational Exposure Limits** | |
| Local name | 2-Metoxymetyl-etoxypropanol (dipropylén glykol mono-metyléter) |
| NPHV (priemerná) (mg/m³) | 308 mg/m³ |
| NPHV (priemerná) (ppm) | 50 ppm |
| Upozornenie (SK) | K - znamená, že faktor môže byť ľahko absorbovaný kožou |
| Regulatory reference | Nariadenie vlády č. 33/2018 Z. z. |
| **Slovenia - Occupational Exposure Limits** | |
| Local name | (2-metoksimetiletoksi)propanol (mešanica izomer) |
| OEL TWA (mg/m³) | 308 mg/m³ |
| OEL TWA (ppm) | 50 ppm |
| OEL STEL (mg/m³) | 308 mg/m³ |
| OEL STEL (ppm) | 50 ppm |
| Remark (SI) | K (Lastnost lažjega prehajanja snovi v organizem skozi kožo), EU |
| Regulatory reference | Uradni list RS, št. 78/2019 z dne 20.12.2019 |
| **Spain - Occupational Exposure Limits** | |
| Local name | Éter metílico de dipropilenglicol |
| VLA-ED (mg/m³) | 308 mg/m³ |
| VLA-ED (ppm) | 50 ppm |

| **(2-Methoxymethylethoxy)-propanol (34590-94-8)** | |
|---|---|
| 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), VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo). |
| Regulatory reference | Límites de Exposición Profesional para Agentes Químicos en España 2019. INSHT |
| **Sweden - Occupational Exposure Limits** | |
| Local name | Dipropylenglykolmonometyleter |
| nivågränsvärde (NVG) (mg/m³) | 300 mg/m³ |
| nivågränsvärde (NVG) (ppm) | 50 ppm |
| kortidsvärde (KTV) (mg/m³) | 450 mg/m³ |
| kortidsvärde (KTV) (ppm) | 75 ppm |
| Anmärkning (SE) | 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); V (Vägledande korttidsgränsvärde ska användas som ett rekommenderat högsta värde som inte bör överskridas) |
| Regulatory reference | Hygieniska gränsvärden (AFS 2018:1) |
| **United Kingdom - Occupational Exposure Limits** | |
| WEL TWA (mg/m³) | 308 mg/m³ |
| WEL TWA (ppm) | 50 ppm |
| Remark (WEL) | (Sk) |
| **Norway - Occupational Exposure Limits** | |
| Local name | (2-metoksymetyletoksy)-propanol (Dipropylenglykolmetyleter) |
| Grenseverdier (AN) (mg/m³) | 300 mg/m³ |
| Grenseverdier (AN) (ppm) | 50 ppm |
| Merknader (NO) | H: Kjemikalier som kan tas opp gjennom huden; E: EU har en veiledende grenseverdi for stoffet. |
| Regulatory reference | FOR-2020-04-06-695 |
| **Switzerland - Occupational Exposure Limits** | |
| VME (mg/m³) | 300 mg/m³ |
| MAK (ppm) | 50 ppm |
| KZGW (mg/m³) | 300 mg/m³ |
| KZGW (ppm) | 50 ppm |

| **antimony nickel titanium oxide; Pigment Yellow 53; C.I. 77788 (8007-18-9)** | |
|---|---|
| **Austria - Occupational Exposure Limits** | |
| MAK (mg/m³) | 0.5 mg/m³ (Ni) |
| MAK Short time value (mg/m³) | 2 mg/m³ (Ni) |
| **Belgium - Occupational Exposure Limits** | |
| Limit value (mg/m³) | 0.2 mg/m³ (Ni) |
| **Denmark - Occupational Exposure Limits** | |
| Grænsevædi (8 timer) (mg/m³) | 0.05 mg/m³ (Ni) |
| Grænsevædi (STEL) (mg/m³) | 1 mg/m³ (Ni) |
| **Germany - Occupational Exposure Limits (TRGS 900)** | |
| Occupational exposure limit value (mg/m³) | 0.03 mg/m³ (Ni) |
| **Ireland - Occupational Exposure Limits** | |
| OEL (8 hours ref) (mg/m³) | 0.5 mg/m³ (Ni) |

| **antimony nickel titanium oxide; Pigment Yellow 53; C.I. 77788 (8007-18-9)** | |
|---|---|
| **Romania - Occupational Exposure Limits** | |
| OEL TWA (mg/m³) | 0.1 mg/m³ (Ni) |
| OEL STEL (mg/m³) | 0.5 mg/m³ (Ni) |
| **Spain - Occupational Exposure Limits** | |
| VLA-ED (mg/m³) | 0.2 mg/m³ (Ni) |
| **United Kingdom - Occupational Exposure Limits** | |
| WEL TWA (mg/m³) | 0.5 mg/m³ (Ni) |

| **Silicon dioxide (amorphous) (7631-86-9)** | |
|---|---|
| **Austria - Occupational Exposure Limits** | |
| MAK (mg/m³) | 4 mg/m³ |
| Remark (AT) | (einatembare Fraktion) |
| **Finland - Occupational Exposure Limits** | |
| HTP-arvo (8h) (mg/m³) | 5 mg/m³ |
| **Germany - Occupational Exposure Limits (TRGS 900)** | |
| TRGS 900 Local name | Kieselsäuren, amorphe |
| Occupational exposure limit value (mg/m³) | 4 mg/m³ (E) |
| TRGS 900 Remark | DFG;2;Y |
| TRGS 900 Regulatory reference | TRGS900 |
| **Ireland - Occupational Exposure Limits** | |
| OEL (8 hours ref) (mg/m³) | 2.4 mg/m³<br>6 mg/m³ (total inhalable dust) |
| **Latvia - Occupational Exposure Limits** | |
| Local name | Silīcija dioksīds |
| OEL TWA (mg/m³) | 1 mg/m³ |
| Regulatory reference | Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2020. gada 7. janvārī noteikumiem Nr. 11) |
| **Slovenia - Occupational Exposure Limits** | |
| Local name | silikagel |
| OEL TWA (mg/m³) | 4 mg/m³ |
| Remark (SI) | Y (Snovi, pri katerih ni nevarnosti za zarodek ob upoštevanju mejnih vrednosti in bat vrednosti) |
| Regulatory reference | Uradni list RS, št. 78/2019 z dne 20.12.2019 |
| **Spain - Occupational Exposure Limits** | |
| VLA-ED (mg/m³) | 10 mg/m³ |
| Notes | (respirable aerosol) |
| **United Kingdom - Occupational Exposure Limits** | |
| WEL TWA (mg/m³) | 6 mg/m³ (inhalable aerosol)<br>2.4 mg/m³ (respirable aerosol) |
| **Switzerland - Occupational Exposure Limits** | |
| VME (mg/m³) | 4 mg/m³ |
| Remark | (einatembarer Staub) |

| **Titanium dioxide (13463-67-7)** | |
|---|---|
| **Austria - Occupational Exposure Limits** | |
| MAK (mg/m³) | 5 mg/m³ (alveolengängiger Anteil) |

| | |
|---|---|
| **Titanium dioxide (13463-67-7)** | |
| MAK Short time value (mg/m³) | 10 mg/m³ max. 2x60 min./Schicht (alveolengängiger Anteil) |
| **Belgium - Occupational Exposure Limits** | |
| Limit value (mg/m³) | 10 mg/m³ |
| Remark (BE) | (dioxyde de) |
| **Denmark - Occupational Exposure Limits** | |
| Local name | Titandioxid |
| Grænsevædi (8 timer) (mg/m³) | 6 mg/m³ beregnet som Ti |
| Grænsevædi (STEL) (mg/m³) | 12 mg/m³ |
| Regulatory reference | BEK nr 1458 af 13/12/2019 |
| **France - Occupational Exposure Limits** | |
| Local name | Titane (dioxyde de), en Ti |
| VME (mg/m³) | 10 mg/m³ |
| Note (FR) | Valeurs recommandées/admises |
| Regulatory reference | Circulaire du Ministère du travail (réf.: INRS ED 984, 2016) |
| **Ireland - Occupational Exposure Limits** | |
| OEL (8 hours ref) (mg/m³) | 10 mg/m³ total inhalable dust<br>4 mg/m³ respirable dust |
| **Latvia - Occupational Exposure Limits** | |
| Local name | Titāna dioksīds |
| OEL TWA (mg/m³) | 10 mg/m³ |
| Regulatory reference | Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2011. gada 1. februārī noteikumiem Nr. 92) |
| **Lithuania - Occupational Exposure Limits** | |
| IPRV (mg/m³) | 5 mg/m³ |
| **Poland - Occupational Exposure Limits** | |
| Local name | Ditlenek tytanu |
| NDS (mg/m³) | 10 mg/m³ frakcja wdychalna |
| Remark (PL) | Frakcja wdychalna – frakcja aerozolu wnikająca przez nos i usta, która po zdeponowaniu w drogach oddechowych stwarza zagrożenie dla zdrowia. Obowiązuje jednoczesne oznaczanie stężeń frakcji respirabilnej krzemionki krystalicznej. |
| Regulatory reference | Dz. U. 2018 poz. 1286 |
| **Portugal - Occupational Exposure Limits** | |
| Local name | Dióxido de titânio |
| OEL TWA (mg/m³) | 10 mg/m³ |
| Regulatory reference | Norma Portuguesa NP 1796:2014 |
| **Slovakia - Occupational Exposure Limits** | |
| Local name | Oxid titaničitý |
| NPHV (priemerná) (mg/m³) | 5 mg/m³ |
| Regulatory reference | Nariadenie vlády č. 33/2018 Z. z. |
| **Spain - Occupational Exposure Limits** | |
| Local name | Dióxido de titanio |
| VLA-ED (mg/m³) | 10 mg/m³ |
| Notes | inhalable aerosol |
| Regulatory reference | Límites de Exposición Profesional para Agentes Químicos en España 2019. INSHT |
| **Sweden - Occupational Exposure Limits** | |
| Local name | Titandioxid |

| **Titanium dioxide (13463-67-7)** | |
|---|---|
| nivågränsvärde (NVG) (mg/m³) | 5 mg/m³ totaldamm |
| Anmärkning (SE) | 3 (Med totaldamm menas de partiklar (aerosoler) som fastnar på ett filter i den provtagare som beskrivs i Metodserien, Provtagning av totaldamm och respirabelt damm, Metod nr 1010, Arbetarskyddsstyrelsen, numera Arbetsmiljöverket. Filterdiametern är normalt 37 mm, men kan även vara 25 mm. Trots sitt namn provtas inte den totala mängden luftburna partiklar med denna metod) |
| Regulatory reference | Hygieniska gränsvärden (AFS 2018:1) |
| **United Kingdom - Occupational Exposure Limits** | |
| WEL TWA (mg/m³) | 10 mg/m³ inhalable aerosol<br>4 mg/m³ respirable aerosol |
| **Norway - Occupational Exposure Limits** | |
| Local name | Titandioksid |
| Grenseverdier (AN) (mg/m³) | 5 mg/m³ |
| Regulatory reference | FOR-2020-04-06-695 |
| **Switzerland - Occupational Exposure Limits** | |
| VME (mg/m³) | 3 mg/m³ |
| Remark | (respirable aerosol) |

| **cobalt aluminate blue spinel C.I. 77346 (1345-16-0)** | |
|---|---|
| **Austria - Occupational Exposure Limits** | |
| MAK (mg/m³) | 0.1 mg/m³ (einatembare Fraktion), (III A2,H,Sah) |
| MAK Short time value (mg/m³) | 0.4 mg/m³ (einatembare Fraktion) max. 4x15 min./Schicht, (III A2,H,Sah) |
| **Belgium - Occupational Exposure Limits** | |
| Limit value (mg/m³) | 0.02 mg/m³ |
| Remark (BE) | (fumées et poussières) (en Co) |
| **Czech Republic - Occupational Exposure Limits** | |
| Local name | Kobalt a jeho sloučeniny, jako Co |
| Expoziční limity (PEL) (mg/m³) | 0.05 mg/m³ |
| Expoziční limity (NPK-P) (mg/m³) | 0.1 mg/m³ |
| Remark (CZ) | S - látka má senzibilizující účinek (s větou H317, H334), V - vdechovatelná frakce aerosolu. |
| Regulatory reference | Nařízení vlády č. 361/2007 Sb. (Předpis 41/2020 Sb.) |
| **Denmark - Occupational Exposure Limits** | |
| Local name | Cobalt, pulver, støv, røg og uorganiske forbindelser |
| Grænsevædi (8 timer) (mg/m³) | 0.01 mg/m³ beregnet som Co |
| Anmærkninger (DK) | K (betyder, at stoffet anses for at kunne være kræftfremkaldende) |
| Regulatory reference | BEK nr 1458 af 13/12/2019 |
| **Finland - Occupational Exposure Limits** | |
| Local name | Koboltti ja sen epäorgaaniset yhdisteet |
| HTP-arvo (8h) (mg/m³) | 0.02 mg/m³ Co |
| Huomautus (FI) | (Co) |
| Regulatory reference | HTP-ARVOT 2018 (Sosiaali- ja terveysministeriö) |
| **Finland - Biological limit values** | |
| Local name | Koboltti ja sen epäorgaaniset yhdisteet |
| Finland - BLV | 130 nmol/l Parametri: Virtsan koboltti - Näytteenottoajankohta: Työvaiheen tai työvuoron päätyttyä työviikon tai altistumisjakson loputtua |
| Regulatory reference | HTP-ARVOT 2018 (Sosiaali- ja terveysministeriö) |

| **cobalt aluminate blue spinel C.I. 77346 (1345-16-0)** | |
|---|---|
| **Hungary - Occupational Exposure Limits** | |
| Local name | KOBALT ÉS SZERVETLEN VEGYÜLETEI (Co-ra számítva) |
| AK-érték | 0.02 mg/m³ |
| CK-érték | 0.4 mg/m³ |
| Megjegyzések (HU) | i (ingerlő anyag, amely izgatja a bőrt, nyálkahártyát, szemet vagy mindhármat), sz (Túlérzékenységet okozó (szenzibilizáló) tulajdonságú anyag. Az anyagra érzékeny egyéneken „túlérzékenységen” alapuló bőr-, légzőrendszeri, esetleg más szervet/szervrendszert károsító megbetegedést okozhat), BEM (biológiai expozíciós mutató); T (Azok az anyagok, amelyek egészségkárosító hatása TARTÓS expozíciót követően jelentkezik) |
| Regulatory reference | 5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről |
| **Hungary - Biological limit values** | |
| Local name | Kobalt |
| Regulatory reference | 5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről |
| **Ireland - Occupational Exposure Limits** | |
| OEL (8 hours ref) (mg/m³) | 0.1 mg/m³ |
| Notes (IE) | Sen |
| **Latvia - Occupational Exposure Limits** | |
| Local name | Kobalts |
| OEL TWA (mg/m³) | 0.5 mg/m³ |
| Regulatory reference | Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 |
| **Lithuania - Occupational Exposure Limits** | |
| IPRV (mg/m³) | 0.05 mg/m³ |
| Remark (LT) | K M J |
| **Netherlands - Occupational Exposure Limits** | |
| Local name | Kobalt |
| Grenswaarde TGG 8H (mg/m³) | 0.02 mg/m³ (stof en rook) (als Co) |
| Regulatory reference | Arbeidsomstandighedenregeling 2020 |
| **Poland - Occupational Exposure Limits** | |
| Local name | Kobalt metaliczny i jego związki nieorganiczne |
| NDS (mg/m³) | 0.02 mg/m³ w przeliczeniu na Co |
| Regulatory reference | Dz. U. 2018 poz. 1286 |
| **Portugal - Occupational Exposure Limits** | |
| Local name | Cobalto e compostos inorgânicos, expressos em Co |
| OEL TWA (mg/m³) | 0.02 mg/m³ |
| Regulatory reference | Norma Portuguesa NP 1796:2014 |
| **Portugal - Biological limit values** | |
| Local name | Cobalto |
| Portugal (BEI) | 15 µg/l Parâmetro: Cobalto - Meio: urina - Momento da amostragem: Fim do turno no fim da semana de trabalho - Notaçao: Vb (Valor basal)<br>1 µg/l Parâmetro: Cobalto - Meio: sangue - Momento da amostragem: Fim do turno no fim da semana de trabalho - Notaçao: Vb (Valor basal), Sq (Semi quantitativo) |
| Regulatory reference | Norma Portuguesa NP 1796:2014 |
| **Slovakia - Occupational Exposure Limits** | |
| Local name | Kobalt a jeho zlúčeniny (ako Co) |
| NPHV (priemerná) (mg/m³) | 0.05 mg/m³ |

| | |
|---|---|
| **cobalt aluminate blue spinel C.I. 77346 (1345-16-0)** | |
| NPHV (priemerná) (ppm) | 30 µg/l (Kobalt) |
| Upozornenie (SK) | S - znamená, že faktor môže spôsobiť senzibilizáciu |
| Regulatory reference | Nariadenie vlády č. 33/2018 Z. z. |
| **Spain - Occupational Exposure Limits** | |
| Local name | Cobalto elemental |
| VLA-ED (mg/m³) | 0.02 mg/m³ |
| VLA-ED (ppm) | 15 µg/l F "(Cobalto en orina; Final de la semana laboral 1)"<br>1 µg/l F, S "(Cobalto en sangre; Final de la semana laboral 1)" |
| Notes | VLB® (Agente químico que tiene Valor Límite Biológico), Sen (Sensibilizante). |
| Regulatory reference | Límites de Exposición Profesional para Agentes Químicos en España 2019. INSHT |
| **Spain - Biological limit values** | |
| Local name | Cobalto y compuestos inorgánicos excepto óxidos |
| Spain - BLV | 15 µg/l Parámetro: Cobalto - Medio: Orina - Momento de muestreo: Final de la semana laboral - Notas: F (Fondo. El indicador está generalmente presente en cantidades detectables en personas no expuestas laboraboralmente. Estos niveles de fondo están considerados en el valor VLB)<br>1 µg/l Parámetro: Cobalto - Medio: Sangre - Momento de muestreo: Final de la semana laboral - Notas: F (Fondo. El indicador está generalmente presente en cantidades detectables en personas no expuestas laboraboralmente. Estos niveles de fondo están considerados en el valor VLB), S (Significa que el indicador biológico es un indicador de exposición al agente químico en cuestión, pero la interpretación cuantitativa de su medida es ambigua (semicuantitativa). Estos indicadores biológicos deben utilizarse como una prueba de selección (screening) cuando no se pueda realizar una prueba cuantitativa o usarse como prueba de confirmación, si la prueba cuantitativa no es específica y el origen del determinante es dudoso) |
| Regulatory reference | Límites de Exposición Profesional para Agentes Químicos en España 2019. INSHT |
| **Sweden - Occupational Exposure Limits** | |
| Local name | Kobolt, och oorg. föreningar (som Co) |
| nivågränsvärde (NVG) (mg/m³) | 0.02 mg/m³ inhalerbar fraktion |
| 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); S (Ämnet är sensibiliserande. Sensibiliserande ämnen kan ge allergi eller annan överkänslighet. Överkänslighetsbesvären drabbar främst huden eller andningsorganen. Överkänslighet innebär att man reagerar vid kontakt med ämnen som normalt inte ger besvär. Allergi är en undergrupp av överkänslighet som orsakas av reaktioner i kroppens immunsystem. Särskilt låga gränsvärden har fastställts för ämnen med mer uttalat luftvägssensibiliserande egenskaper. Några ämnen med starkt sensibiliserande egenskaper får endast hanteras efter tillstånd från Arbetsmiljöverket, se föreskrifterna om kemiska arbetsmiljörisker. Dessa ämnen har inga gränsvärden men i vissa fall riktvärden); 3 (Med inhalerbar fraktion menas den mängd partiklar, av totalmängden partiklar i luften, som man inandas genom näsa och mun) |
| Regulatory reference | Hygieniska gränsvärden (AFS 2018:1) |
| **United Kingdom - Occupational Exposure Limits** | |
| WEL TWA (mg/m³) | 0.1 mg/m³ |
| **Norway - Occupational Exposure Limits** | |
| Grenseverdier (AN) (mg/m³) | 0.02 mg/m³ RA // Kobolt (røyk) og uorg. Kobolt-forb. (beregnet som Co, unntatt CO(II) |
| **Switzerland - Occupational Exposure Limits** | |
| VME (mg/m³) | 0.05 mg/m³ (einatembarer Staub) |
| MAK (ppm) | 30 µg/l Cobalt, Urin, b |

**8.2. Exposure controls**

**Appropriate engineering controls:**

Ensure good ventilation of the work station. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

**Personal protective equipment:**

Avoid all unnecessary exposure.

| **Hand protection:** |
|---|
| None under normal use. In case of repeated or prolonged contact wear gloves. Nitrile rubber. EN 374 |

| **Eye protection:** |
|---|
| None under normal use. In case of splashing or aerosol production: protective goggles. EN166 |

| **Respiratory protection:** |
|---|
| None under normal use |

**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 | : Solid marker containing liquid colored paint. |
| Colour | : Various. |
| Odour | : Solvent. |
| 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 | : 90 °C |
| Flash point | : 19 °C |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : Highly flammable liquid and vapour. |
| 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 | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : Product is not explosive. |
| Oxidising properties | : No oxidizing properties. |
| Explosive limits | : No data available |

**9.2. Other information**

| | |
|---|---|
| VOC content | : 34.4 – 52.3 % |

## SECTION 10: Stability and reactivity

**10.1. Reactivity**

No dangerous reactions known.

**10.2. Chemical stability**

Highly flammable liquid and vapour. May form flammable/explosive vapour-air mixture.

**10.3. Possibility of hazardous reactions**

Hazardous polymerization will not occur.

**10.4. Conditions to avoid**

Open flame. Direct sunlight.

**10.5. Incompatible materials**

Oxidizing agent. Moisture. Alkali. acid.

**10.6. Hazardous decomposition products**

May release flammable gases. Thermal decomposition generates : metallic oxides. Carbon monoxide. Carbon dioxide.

## 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) | : Not classified (Based on available data, the classification criteria are not met) |

| dimethyl carbonate (616-38-6) | |
|---|---|
| LD50 oral rat | > 5000 mg/kg no rats died during the study |
| LD50 dermal rabbit | > 2000 mg/kg New Zealand White rabbit; no rabbits died during the study |
| LC50 inhalation rat (mg/l) | > 5.36 mg/l/4h no rats died during the study |

| Aluminum oxide (1344-28-1) | |
|---|---|
| LD50 oral rat | > 15900 mg/kg |
| LC50 inhalation rat (mg/l) | 7.6 mg/l/4h |

| (2-Methoxymethylethoxy)-propanol (34590-94-8) | |
|---|---|
| LD50 oral rat | > 5000 mg/kg |
| LD50 dermal rat | > 19020 mg/kg |
| LC50 inhalation rat (mg/l) | > 1667 mg/l/4h |
| LC50 inhalation rat (Dust/Mist - mg/l/4h) | > 1667 mg/l/4h |

| antimony nickel titanium oxide; Pigment Yellow 53; C.I. 77788 (8007-18-9) | |
|---|---|
| LD50 oral rat | > 2000 mg/kg no deaths occurred |
| LC50 inhalation rat (mg/l) | no mortality after 7h |

| Silicon dioxide (amorphous) (7631-86-9) | |
|---|---|
| LD50 oral rat | > 5000 mg/kg |
| LD50 dermal rabbit | > 2000 mg/kg |
| LC50 inhalation rat (mg/l) | > 58.8 mg/l/4h |

| Titanium dioxide (13463-67-7) | |
|---|---|
| LD50 oral rat | > 5000 mg/kg |
| LC50 inhalation rat (mg/l) | > 6.82 mg/l/4h |

| cobalt aluminate blue spinel C.I. 77346 (1345-16-0) | |
|---|---|
| LD50 oral rat | > 10000 mg/kg bodyweight no deaths occurred |

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)
Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met)
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 : Not classified (Based on available data, the classification criteria are not met)

| Cyclohexanone (108-94-1) | |
|---|---|
| IARC group | 3 - Not classifiable |

| Silicon dioxide (amorphous) (7631-86-9) | |
|---|---|
| IARC group | 3 - Not classifiable |

| Titanium dioxide (13463-67-7) | |
|---|---|
| IARC group | 2B - Possibly carcinogenic to humans |

| Titanium dioxide (13463-67-7) | |
|---|---|
| NOAEL (chronic, oral, animal/male, 2 years) | 5 mg/kg bodyweight rat |
| Additional information | Carcinogen, cat 1A or 1B. Inhalation of dust |

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

| | |
|---|---|
| STOT-single exposure | : Not classified (Based on available data, the classification criteria are not met) |
| STOT-repeated exposure | : Not classified (Based on available data, the classification criteria are not met) |
| Aspiration hazard | : Not classified (Based on available data, the classification criteria are not met) |

## SECTION 12: Ecological information

**12.1. Toxicity**

| | |
|---|---|
| Ecology - general | : No ecotoxicological data about this product are known. |
| Hazardous to the aquatic environment, short-term (acute) | : Not classified |
| Hazardous to the aquatic environment, long-term (chronic) | : Not classified |

| **dimethyl carbonate (616-38-6)** | |
|---|---|
| NOEC (acute) | > 100 mg/l |

| **Aluminum oxide (1344-28-1)** | |
|---|---|
| EC50 crustacea | 1470 mg/l |
| NOEC (acute) | 50 mg/l |

| **(2-Methoxymethylethoxy)-propanol (34590-94-8)** | |
|---|---|
| LC50 fish 1 | > 1000 mg/l Poecilia reticulata |
| ErC50 (algae) | > 1000 mg/l |

| **antimony nickel titanium oxide; Pigment Yellow 53; C.I. 77788 (8007-18-9)** | |
|---|---|
| LC50 fish 1 | > 10000 mg/l Leuciscus idus |

| **Silicon dioxide (amorphous) (7631-86-9)** | |
|---|---|
| LC50 fish 1 | > 10000 mg/l |
| EC50 crustacea | > 1000 mg/l |

**12.2. Persistence and degradability**

| **Paint-Riter ™ + Heat Treat (2100F, 2200F) White, Yellow, Black, Blue** | |
|---|---|
| Persistence and degradability | Not established. |

| **dimethyl carbonate (616-38-6)** | |
|---|---|
| Persistence and degradability | Readily biodegradable. |
| Biodegradation | 86 % after 28 days |

| **(2-Methoxymethylethoxy)-propanol (34590-94-8)** | |
|---|---|
| Persistence and degradability | Readily biodegradable. |

| **Silicon dioxide (amorphous) (7631-86-9)** | |
|---|---|
| Persistence and degradability | Product persists. |

**12.3. Bioaccumulative potential**

| **Paint-Riter ™ + Heat Treat (2100F, 2200F) White, Yellow, Black, Blue** | |
|---|---|
| Bioaccumulative potential | Not established. |

| **dimethyl carbonate (616-38-6)** | |
|---|---|
| Log Pow | 0.354 @ 20°C |
| Bioaccumulative potential | Not potentially bioaccumulable. |

**12.4. Mobility in soil**

| **Paint-Riter ™ + Heat Treat (2100F, 2200F) White, Yellow, Black, Blue** | |
|---|---|
| Ecology - soil | Not established. |

**12.5. Results of PBT and vPvB assessment**

| Paint-Riter ™ + Heat Treat (2100F, 2200F) White, Yellow, Black, Blue |
|---|
| PBT: not yet assessed |
| vPvB: not yet assessed |

**12.6. Other adverse effects**

Other adverse effects : 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.

Additional information : Handle empty containers with care because residual vapours are flammable.

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 : HP3 - "Flammable:"
— flammable liquid waste: liquid waste having a flash point below 60 °C or waste gas oil, diesel and light heating oils having a flash point > 55 °C and ≤ 75 °C;
— flammable pyrophoric liquid and solid waste: solid or liquid waste which, even in small quantities, is liable to ignite within five minutes after coming into contact with air;
— flammable solid waste: solid waste which is readily combustible or may cause or contribute to fire through friction;
— flammable gaseous waste: gaseous waste which is flammable in air at 20 °C and a standard pressure of 101.3 kPa;
— water reactive waste: waste which, in contact with water, emits flammable gases in dangerous quantities;
— other flammable waste: flammable aerosols, flammable self-heating waste, flammable organic peroxides and flammable self-reactive waste.

## SECTION 14: Transport information

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

**14.1. UN number**

UN-No. (ADR) : UN 1263

UN-No. (IMDG) : UN 1263

UN-No. (IATA) : UN 1263

UN-No. (ADN) : UN 1263

UN-No. (RID) : UN 1263

**14.2. UN proper shipping name**

Proper Shipping Name (ADR) : PAINT

Proper Shipping Name (IMDG) : PAINT

Proper Shipping Name (IATA) : PAINT

Proper Shipping Name (ADN) : PAINT

Proper Shipping Name (RID) : PAINT

Transport document description (ADR) : UN 1263 PAINT, 3, II, (D/E)

Transport document description (IMDG) : UN 1263 PAINT, 3, II

Transport document description (IATA) : UN 1263 PAINT, 3, II

Transport document description (ADN) : UN 1263 PAINT, 3, II

Transport document description (RID) : UN 1263 PAINT, 3, II

**14.3. Transport hazard class(es)**

**ADR**

Transport hazard class(es) (ADR) : 3

Danger labels (ADR) : 3

:


**IMDG**

Transport hazard class(es) (IMDG) : 3

Danger labels (IMDG) : 3

:

**IATA**

Transport hazard class(es) (IATA) : 3
Danger labels (IATA) : 3

:

**ADN**

Transport hazard class(es) (ADN) : 3
Danger labels (ADN) : 3

:

**RID**

Transport hazard class(es) (RID) : 3
Danger labels (RID) : 3

:

**14.4. Packing group**

Packing group (ADR) : II
Packing group (IMDG) : II
Packing group (IATA) : II
Packing group (ADN) : II
Packing group (RID) : II

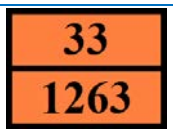
**14.5. Environmental hazards**

Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

**14.6. Special precautions for user**

**Overland transport**

Classification code (ADR) : F1
Special provisions (ADR) : 163, 367, 640C, 650
Limited quantities (ADR) : 5l
Excepted quantities (ADR) : E2
Packing instructions (ADR) : P001
Special packing provisions (ADR) : PP1
Mixed packing provisions (ADR) : MP19
Portable tank and bulk container instructions (ADR) : T4
Portable tank and bulk container special provisions (ADR) : TP1, TP8, TP28
Tank code (ADR) : L1.5BN
Vehicle for tank carriage : FL
Transport category (ADR) : 2
Special provisions for carriage - Operation (ADR) : S2, S20
Hazard identification number (Kemler No.) : 33

Orange plates : 


Tunnel restriction code (ADR) : D/E

EAC code : •3YE

**Transport by sea**

Special provisions (IMDG) : 163, 367

Limited quantities (IMDG) : 5 L

Excepted quantities (IMDG) : E2

Packing instructions (IMDG) : P001

Special packing provisions (IMDG) : PP1

IBC packing instructions (IMDG) : IBC02

Tank instructions (IMDG) : T4

Tank special provisions (IMDG) : TP1, TP8, TP28

EmS-No. (Fire) : F-E

EmS-No. (Spillage) : S-E

Stowage category (IMDG) : B

**Air transport**

PCA Excepted quantities (IATA) : E2

PCA Limited quantities (IATA) : Y341

PCA limited quantity max net quantity (IATA) : 1L

PCA packing instructions (IATA) : 353

PCA max net quantity (IATA) : 5L

CAO packing instructions (IATA) : 364

CAO max net quantity (IATA) : 60L

Special provisions (IATA) : A3, A72, A192

ERG code (IATA) : 3L

**Inland waterway transport**

Classification code (ADN) : F1

Special provisions (ADN) : 163, 367, 640C, 650

Limited quantities (ADN) : 5 L

Excepted quantities (ADN) : E2

Equipment required (ADN) : PP, EX, A

Ventilation (ADN) : VE01

Number of blue cones/lights (ADN) : 1

**Rail transport**

Classification code (RID) : F1

Special provisions (RID) : 163, 367, 640C, 650

Limited quantities (RID) : 5L

Excepted quantities (RID) : E2

Packing instructions (RID) : P001

Special packing provisions (RID) : PP1

Mixed packing provisions (RID) : MP19

Portable tank and bulk container instructions (RID) : T4

Portable tank and bulk container special provisions (RID) : TP1, TP8, TP28

Tank codes for RID tanks (RID) : L1.5BN

Transport category (RID) : 2

Colis express (express parcels) (RID) : CE7

Hazard identification number (RID) : 33

**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:

| | |
|---|---|
| 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 | Paint-Riter ™ + Heat Treat (2100F, 2200F) White, Yellow, Black, Blue ; dimethyl carbonate ; Cyclohexanone |
| 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 | Cyclohexanone |
| 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. | Paint-Riter ™ + Heat Treat (2100F, 2200F) White, Yellow, Black, Blue ; dimethyl carbonate ; Cyclohexanone |

Contains substance on the REACH candidate list in concentration ≥ 0.1% or with a lower specific limit: antimony nickel titanium oxide; Pigment Yellow 53; C.I. 77788 (EC 232-353-3, CAS 8007-18-9)
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

VOC content : 34.4 – 52.3 %

**15.1.2. National regulations**

**Germany**

VwVwS Annex reference : WGK nwg, Non-hazardous to water (Classification according to AwSV, Annex 1)

WGK remark : Classification based on the R-phrases in compliance withVerwaltungsvorschrift wassergefährdender Stoffe (VwVwS)

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 : antimony nickel titanium oxide; Pigment Yellow 53; C.I. 77788,cobalt aluminate blue spinel C.I. 77346 are listed

SZW-lijst van mutagene stoffen : antimony nickel titanium oxide; Pigment Yellow 53; C.I. 77788,cobalt aluminate blue spinel C.I. 77346 are 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 : None of the components are listed

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

**Denmark**

Class for fire hazard : Class I-1

Store unit : 1 liter

Classification remarks : F <Flam. Liq. 2>; Emergency management guidelines for the storage of flammable liquids must be followed

Danish National Regulations : 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

| **Abbreviations and acronyms:** | |
|---|---|
| | ACGIH (American Conference of Government Industrial Hygienists) |
| | ATE: Acute Toxicity Estimate |

| | |
|---|---|
| | CAS (Chemical Abstracts Service) number |
| | CLP: Classification, Labelling, Packaging. |
| | DNEL: Derived No Effect Level |
| | EC50: Environmental Concentration associated with a response by 50% of the test population. |
| | GHS: Globally Harmonized System (of Classification and Labeling of Chemicals). |
| | LD50: Lethal Dose for 50% of the test population |
| | NOEC: No Observable Effect Concentration |
| | OSHA: Occupational Safety & Health Administration |
| | PBT: Persistent, Bioaccumulative, Toxic |
| | PNEC: Predicted No Effect Level |
| | STEL: Short Term Exposure Limits |
| | TSCA: Toxic Substances Control Act |
| | TWA: Time Weighted Average |

Data sources : ESIS (European chemincal Substances Information System; accessed at: http://esis.jrc.ec.europa.eu/index.php?PGM=cla. 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.

| **Full text of H- and EUH-statements:** | |
|---|---|
| Acute Tox. 4 (Inhalation:dust,mist) | Acute toxicity (inhalation:dust,mist) Category 4 |
| Flam. Liq. 2 | Flammable liquids, Category 2 |
| Flam. Liq. 3 | Flammable liquids, Category 3 |
| H225 | Highly flammable liquid and vapour. |
| H226 | Flammable liquid and vapour. |
| H332 | Harmful if inhaled. |
| | EUH211: Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist. |

| **Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:** | | |
|---|---|---|
| Flam. Liq. 2 | H225 | On basis of test data |

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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.*