

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

Product form : Article
 Trade name : Pro-Line® HP Paint Markers
 Synonyms : Pro-Line® HP Paint Markers Gold, White, Yellow, Light Blue, Light Green, Pink, Black, Blue, Green, Orange, Silver, Purple, Red, Brown

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

Main use category : Professional use, Industrial use
 Use of the substance/mixture : Marking.

1.2.2. Uses advised against

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

| EU Member State | Officieel adviesorgaan | Adres | Noodnummer |
|-----------------|--|---|------------------------------------|
| AUSTRIA | Vergiftungsinformationszentrale (Poisons Information Centre) | Allgemeines Krankenhaus Waehringer Geurtel 18-20 1090 Wien | +43 1 406 43 43 |
| BELARUS | The Belarus Republican Poisons Centre | Kizhevatova str. 58 Minsk 220115 | +375 (0)17 201 9158 |
| BELGIUM | Centre Anti-Poisons/Antigifocentrum 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 |
| HUNGARY | Országos Kémiai Biztonsági Intézet (National Institute of Chemical Safety) Egészségügyi Toxikológiai Tájékoztató Szolgálat (Health Toxicological Information Service) | 1437 Budapest PO Box 839 1097 Budapest, Nagyvárad tér 2 | +36 80 20 11 99 |
| ICELAND | Eitrunarmiðstöðin | Eitrunarmiðstöðin 108 Reykjavik | +354 543 22 22 |

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| | | | |
|-------------|--|--|---|
| IRELAND | National Poisons Information Centre | Beaumont Hospital PO Box 1297 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 National Institute for Public Health and the Environment, NB this service is only available to health professionals | Huispostnummer B.00.118, PO Box 85500 3508 GA Utrecht | +31 30 274 88 88 |
| PORTUGAL | Centro de Informação Antivenenos Instituto Nacional de Emergência Médica (INEM) | Rua Almirante Barroso, 36 1000-013 Lisboa | 808 250 143 (for use only in Portugal), +351 21 330 3284 |
| ROMANIA | Biroul pentru Regulamentul Sanitar International si Informare Toxicologica | Str. Dr. Leonte Anastasievici Nr.1-3, Sector 5 50463 Bucuresti | +40 21 318 36 06 |
| SLOVAKIA | Národné toxikologické informačné centrum University Hospital Bratislava | Limbová 5 833 05 Bratislava | +421 2 54 77 4 166 |
| SPAIN | Servicio de Información Toxicológica Instituto Nacional de Toxicología, Departamento de Madrid | Calle Luis Cabrera 9 E-28002 Madrid | +34 91 562 04 20 |
| SWEDEN | Giftinformationscentralen Swedish Poisons Information Centre, Karolinska Hospital | Box 60 500 SE-171 76 Stockholm | +46 8 33 12 31 (International) 112 (National) |
| SWITZERLAND | Centre Suisse d'Information Toxicologique | Freiestrasse 16 Postfach CH-8028 Zurich | +41 44 251 51 51 (International) 145 (National) |

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Not classified

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

No labelling applicable

2.3. Other hazards

PBT: not yet assessed

vPvB: not yet assessed

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|--|---|---------|---|
| Cyclohexanone | (CAS No) 108-94-1 (EC no) 203-631-1 (EC index no) 606-010-00-7 | 20 – 40 | Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation:dust,mist), H332 |
| Titanium dioxide | (CAS No) 13463-67-7 (EC no) 236-675-5 | 0 – 50 | Carc. 2, H351 |
| pentan-2-one | (CAS No) 107-87-9 (EC no) 203-528-1 | 5 – 35 | Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 |
| aluminium powder (stabilised) | (CAS No) 7429-90-5 (EC no) 231-072-3 (EC index no) 013-001-00-1 | 0 – 10 | Flam. Sol. 1, H228 Water-react. 2, H261 |
| Zinc (pyrophoric) | (CAS No) 7440-66-6 (EC no) 231-175-3 (EC index no) 030-001-00-1 | 0 – 5 | Pyr. Sol. 1, H250 Water-react. 1, H260 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| Carbon black | (CAS No) 1333-86-4 (EC no) 215-609-9 | 0 – 5 | Carc. 2, H351 |
| 4-[[4-(aminocarbonyl)phenyl]azo]-N-(2-ethoxyphenyl)-3-hydroxynaphthalene-2-carboxamide, C.I. Pigment Red 170 | (CAS No) 2786-76-7 (EC no) 220-509-3 | 0 – 5 | Skin Sens. 1, H317 |

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| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|--|--|---------|--|
| Aluminum hydroxide | (CAS No) 21645-51-2 (EC no) 244-492-7 | 0 – 5 | Not classified |
| Ethyl acetate | (CAS No) 141-78-6 (EC no) 205-500-4 (EC index no) 607-022-00-5 | 0.1 – 2 | Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336 |
| 2-methoxy-1-methylethyl acetate | (CAS No) 108-65-6 (EC no) 203-603-9 (EC index no) 607-195-00-7 | 0 – 1 | Flam. Liq. 3, H226 |
| Aluminum oxide | (CAS No) 1344-28-1 (EC no) 215-691-6 | 0 – 1 | Not classified |
| [N,N,N',N'',N'''-hexaethyl-29H,31H-phthalocyaninetrimethylaminato(2-)-N29,N30,N31,N32]copper | (CAS No) 28654-73-1 (EC no) 249-125-4 | 0 – 0.2 | Skin Sens. 1B, H317 |
| Toluene | (CAS No) 108-88-3 (EC no) 203-625-9 (EC index no) 601-021-00-3 | 0 – 0.2 | Flam. Liq. 2, H225 Repr. 2, H361d Asp. Tox. 1, H304 STOT RE 2, H373 Skin Irrit. 2, H315 STOT SE 3, H336 |
| barium sulfate | (CAS No) 7727-43-7 (EC no) 231-784-4 | 0 – 0.2 | Not classified |
| aluminium powder (pyrophoric) | (CAS No) 7429-90-5 (EC no) 231-072-3 (EC index no) 013-001-00-6 | 0 – 0.2 | Pyr. Sol. 1, H250 Water-react. 2, H261 |
| Butyl acetate | (CAS No) 123-86-4 (EC no) 204-658-1 (EC index no) 607-025-00-1 | 0 – 0.1 | Flam. Liq. 3, H226 STOT SE 3, H336 |
| 2-methoxypropyl acetate | (CAS No) 70657-70-4 (EC no) 274-724-2 (EC index no) 607-251-00-0 | 0 – 0.1 | Flam. Liq. 3, H226 Repr. 1B, H360D STOT SE 3, H335 |

Full text of R- and H-phrases: 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 : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing.
- 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 : Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

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

- Symptoms/injuries after inhalation : In high concentrations : Harmful if inhaled. Inhalation may cause: irritation, coughing, shortness of breath.
- Symptoms/injuries after eye contact : Direct contact with the eyes is likely to be irritating.
- Symptoms/injuries after ingestion : Swallowing a small quantity of this material will result in serious health hazard.

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

All treatments should be based on observed signs and symptoms of distress in the patient.

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 : Highly flammable liquid and vapour.
- Explosion hazard : Product is not explosive.
- Reactivity in case of fire : No dangerous reactions known.

5.3. Advice for firefighters

- 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. Wear fire/flame resistant/retardant clothing. Wear a self contained breathing apparatus. EN469.

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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.

6.1.1. For non-emergency personnel

Protective equipment : In case of inadequate ventilation wear respiratory protection.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Where excessive vapour, mist, or dust may result, use approved respiratory protection equipment.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. Do not discharge into drains or the environment.

6.3. Methods and material for containment and cleaning up

For containment : Eliminate all ignition sources.

Methods for cleaning up : Wipe up with absorbent material (for example cloth).

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. Avoid breathing vapour/mist. Avoid contact with skin and eyes.

Hygiene measures : Do not eat, drink or smoke when using this product. 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 : Moisture. Alkali. Oxidizer. acid.

Incompatible materials : Heat sources.

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

Prohibitions on mixed storage : Keep away from incompatible materials.

7.3. Specific end use(s)

Marking.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| Zinc (pyrophoric) (7440-66-6) | | |
|-------------------------------|---|--|
| Slovakia | NPHV (priemerná) (mg/m ³) | 0.1 mg/m ³ (inhalovatelná frakcia) 2 mg/m ³ |
| Switzerland | VME (mg/m ³) | 0.1 mg/m ³ (alveolengängiger Staub) 2 mg/m ³ (einatembarer Staub) |
| Cyclohexanone (108-94-1) | | |
| Denmark | Grænseværdie (kortvarig) (mg/m ³) | 80 mg/m ³ |
| Denmark | Grænseværdie (kortvarig) (ppm) | 20 ppm |
| Finland | Huomautus (FI) | iho |
| Slovakia | NPHV (priemerná) (mg/m ³) | 40.8 mg/m ³ |
| Slovakia | NPHV (priemerná) (ppm) | 10 ppm |
| Slovakia | Upozornenie (SK) | poznámka K |
| Spain | VLA-ED (mg/m ³) | 41 mg/m ³ vía dérmica, VLI, VLB |
| Spain | VLA-ED (ppm) | 10 ppm vía dérmica, VLI, VLB 80 ppm I,S Con hidrólisis (9) "(1,2- Ciclohexanodiol en orina; Final de la semana laboral 1)" 8 ppm I,S Con hidrólisis (9) "(1,2- Ciclohexanodiol en orina; Final de la jornada laboral 2)" |
| Spain | VLA-EC (mg/m ³) | 82 mg/m ³ vía dérmica, VLI, VLB |
| Spain | VLA-EC (ppm) | 20 ppm vía dérmica, VLI, VLB |

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| Ethyl acetate (141-78-6) | | |
|--|---|--|
| Denmark | Grænseværdie (kortvarig) (mg/m ³) | 1080 mg/m ³ |
| Denmark | Grænseværdie (kortvarig) (ppm) | 300 ppm |
| Slovakia | NPHV (priemerná) (mg/m ³) | 500 mg/m ³ |
| Slovakia | NPHV (priemerná) (ppm) | 150 ppm |
| Spain | VLA-ED (mg/m ³) | 1460 mg/m ³ |
| Spain | VLA-ED (ppm) | 400 ppm |
| United Kingdom | WEL TWA (mg/m ³) | 730 mg/m ³ |
| United Kingdom | WEL STEL (mg/m ³) | 1460 mg/m ³ |
| aluminium powder (pyrophoric) (7429-90-5) | | |
| Belgium | Limit value (mg/m ³) | 1 mg/m ³ |
| Belgium | Remark (BE) | (Aluminium, métal et composés insolubles, fraction alvéolaire) |
| Denmark | Grænseværdie (kortvarig) (mg/m ³) | 4 mg/m ³ (respirabel) 10 mg/m ³ (total) |
| Finland | HTP-arvo (8h) (mg/m ³) | 2 mg/m ³ |
| Finland | Huomautus (FI) | (Alumiini, liukoiset yhdisteet) |
| France | VME (mg/m ³) | 5 mg/m ³ (pulvérulent) 10 mg/m ³ (metal) |
| Germany | TRGS 903 (BGW) | 200 µg/l |
| Germany | Remark (TRGS 903) | Aluminium (Urin; Expositionsende bzw. Schichtende) |
| Hungary | Megjegyzések (HU) | (respirábilis por) |
| Ireland | OEL (8 hours ref) (mg/m ³) | 1 mg/m ³ |
| Ireland | Notes (IE) | (respirable dust) |
| Lithuania | IPRV (mg/m ³) | 2 mg/m ³ (alveoline frakcija) 1 mg/m ³ (Aliuminis (metalas) ir jo tirpus junginiai, kaip Al) 5 mg/m ³ (ákvepiamoji frakcija) |
| Netherlands | Grenswaarde TGG 8H (mg/m ³) | 10 mg/m ³ |
| Poland | NDS (mg/m ³) | 2.5 mg/m ³ (dymy, pyl calkowity) 1.2 mg/m ³ (dymy, pyl respirabilny) |
| Slovakia | NPHV (priemerná) (mg/m ³) | 2 mg/m ³ |
| Slovakia | NPHV (priemerná) (ppm) | 60 µg/g creatinine (Hlinik, M,a) 25 µg/g creatinine (Celkový, M.,d) 150 µg/g creatinine (Celkový,M,b) |
| Spain | VLA-ED (mg/m ³) | 10 mg/m ³ (inhalable aerosol) 5 mg/m ³ (respirable aerosol) |
| Sweden | nivågränsvärde (NVG) (mg/m ³) | 1 mg/m ³ (Aluminium, lösliga föreningar, som Al) 5 mg/m ³ (totaldamm, som Al) 2 mg/m ³ (respirabelt damm, som Al) |
| United Kingdom | WEL TWA (mg/m ³) | 10 mg/m ³ (inhalable dust) 4 mg/m ³ (respirable dust) |
| Norway | Merknader (NO) | (Aluminiumpulver, pyroteknikk) |
| Switzerland | VME (mg/m ³) | 3 mg/m ³ |
| Switzerland | Remark (CH) | (alveolengängiger Staub) |
| pentan-2-one (107-87-9) | | |
| Austria | MAK (mg/m ³) | 700 mg/m ³ |
| Austria | MAK (ppm) | 200 ppm |
| Austria | MAK Short time value (mg/m ³) | 1400 mg/m ³ max. 4x15 min./Schicht |
| Austria | MAK Short time value (ppm) | 400 ppm max. 4x15 min./Schicht |
| Belgium | Short time value (mg/m ³) | 537 mg/m ³ |
| Belgium | Short time value (ppm) | 150 ppm |
| Denmark | Grænseværdie (langvarig) (mg/m ³) | 700 mg/m ³ |
| Denmark | Grænseværdie (langvarig) (ppm) | 200 ppm |
| Denmark | Grænseværdie (kortvarig) (mg/m ³) | 1400 mg/m ³ |
| Denmark | Grænseværdie (kortvarig) (ppm) | 400 ppm |
| Finland | HTP-arvo (8h) (mg/m ³) | 710 mg/m ³ |

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| pentan-2-one (107-87-9) | | |
|--------------------------------------|---|---|
| Finland | HTP-arvo (8h) (ppm) | 200 ppm |
| Finland | HTP-arvo (15 min) | 890 mg/m ³ |
| Finland | HTP-arvo (15 min) (ppm) | 250 ppm |
| France | VME (mg/m ³) | 705 mg/m ³ |
| France | VME (ppm) | 200 ppm |
| Ireland | OEL (8 hours ref) (mg/m ³) | 700 mg/m ³ |
| Ireland | OEL (8 hours ref) (ppm) | 200 ppm |
| Ireland | OEL (15 min ref) (mg/m ³) | 875 mg/m ³ |
| Ireland | OEL (15 min ref) (ppm) | 250 ppm |
| Poland | NDS (mg/m ³) | 100 mg/m ³ |
| Poland | NDSch (mg/m ³) | 800 mg/m ³ |
| Spain | VLA-ED (mg/m ³) | 715 mg/m ³ |
| Spain | VLA-ED (ppm) | 200 ppm |
| Spain | VLA-EC (mg/m ³) | 894 mg/m ³ |
| Spain | VLA-EC (ppm) | 250 ppm |
| United Kingdom | WEL TWA (mg/m ³) | 716 mg/m ³ |
| United Kingdom | WEL TWA (ppm) | 200 ppm |
| United Kingdom | WEL STEL (mg/m ³) | 895 mg/m ³ |
| United Kingdom | WEL STEL (ppm) | 250 ppm |
| Norway | Gjennomsnittsverdier (AN) (mg/m ³) | 260 mg/m ³ |
| Norway | Gjennomsnittsverdier (AN) (ppm) | 75 ppm |
| Switzerland | VME (mg/m ³) | 700 mg/m ³ |
| Switzerland | VME (ppm) | 200 ppm |
| Switzerland | VLE (mg/m ³) | 1400 mg/m ³ |
| Switzerland | VLE (ppm) | 400 ppm |
| Titanium dioxide (13463-67-7) | | |
| Belgium | Remark (BE) | (dioxyde de) |
| Denmark | Grænseværdie (kortvarig) (mg/m ³) | 12 mg/m ³ |
| France | Note (FR) | inhalable aerosol |
| Ireland | OEL (8 hours ref) (mg/m ³) | 10 mg/m ³ total inhalable dust 4 mg/m ³ respirable dust |
| Slovakia | NPHV (priemerná) (mg/m ³) | 5 mg/m ³ |
| Spain | VLA-ED (mg/m ³) | 10 mg/m ³ |
| Spain | Notes | inhalable aerosol |
| Sweden | nivågränsvärde (NVG) (mg/m ³) | 5 mg/m ³ |
| Sweden | Anmärkning (SE) | total dust, 1 |
| United Kingdom | WEL TWA (mg/m ³) | 10 mg/m ³ inhalable aerosol 4 mg/m ³ respirable aerosol |
| Switzerland | Remark (CH) | (respirable aerosol) |
| Aluminum oxide (1344-28-1) | | |
| Austria | MAK (mg/m ³) | 10 mg/m ³ (gemessen als einatembarer Aerosolanteil) 5 mg/m ³ (alveolengängiger Anteil) |
| Austria | MAK Short time value (mg/m ³) | 20 mg/m ³ (gemessen als einatembarer Aerosolanteil) max. 2x60 min./Schicht 10 mg/m ³ (alveolengängiger Anteil) max. 2x60 min./Schicht |
| Belgium | Limit value (mg/m ³) | 10 mg/m ³ |
| Belgium | Remark (BE) | (oxyde d') (en Al) |
| Denmark | Grænseværdie (langvarig) (mg/m ³) | 5 mg/m ³ (total) 2 mg/m ³ (respirabel) |
| Denmark | Grænseværdie (kortvarig) (mg/m ³) | 10 mg/m ³ (total) 4 mg/m ³ (respirabel) |
| France | VME (mg/m ³) | 10 mg/m ³ |
| France | Note (FR) | (respirable aerosol) |
| Germany | TRGS 900 Occupational exposure limit value (mg/m ³) | 3 mg/m ³ |
| Germany | Remark (TRGS 900) | (gemessen als alveolengängiger Staubanteil) |

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| Aluminum oxide (1344-28-1) | | |
|--|--|---|
| Hungary | AK-érték | 6 mg/m ³ |
| Hungary | Megjegyzések (HU) | (respirable aerosol) |
| Ireland | OEL (8 hours ref) (mg/m ³) | 10 mg/m ³ (total inhalable dust) 4 mg/m ³ (respirable dust) |
| Lithuania | IPRV (mg/m ³) | 2 mg/m ³ |
| Lithuania | Remark (LT) | (alveolinė frakcija. Piūrėk IX skyriaus 3 pastabà.) |
| Poland | NDS (mg/m ³) | 2.5 mg/m ³ (dymy, pyl calkowity) 1.2 mg/m ³ (dymy, pyl respirabilny) |
| Slovakia | NPHV (priemerná) (mg/m ³) | 1.5 mg/m ³ (respirabilná frakcia) 4 mg/m ³ (inhalovate ³ / ₄ ná frakcia) |
| Spain | VLA-ED (mg/m ³) | 10 mg/m ³ |
| Sweden | nivågränsvärde (NVG) (mg/m ³) | 5 mg/m ³ (inhalable aerosol) 2 mg/m ³ (respirable aerosol) |
| United Kingdom | WEL TWA (mg/m ³) | 10 mg/m ³ (inhalable aerosol) 4 mg/m ³ (respirable aerosol) |
| Norway | Gjennomsnittsverdier (AN) (mg/m ³) | 10 mg/m ³ |
| Norway | Merknader (NO) | 1) |
| Switzerland | VME (mg/m ³) | 3 mg/m ³ |
| Switzerland | Remark (CH) | (respirable aerosol) |
| Aluminum hydroxide (21645-51-2) | | |
| Austria | MAK (ppm) | 10 ppm (gemessen als einatembarer Aerosolanteil) 5 ppm (alveolengängiger Anteil) |
| Austria | MAK Short time value (ppm) | 20 ppm (gemessen als einatembarer Aerosolanteil) max. 2x60 min./Schicht 10 ppm (alveolengängiger Anteil) max. 2x60 min./Schicht |
| Poland | NDS (mg/m ³) | 2.5 mg/m ³ dymy, pyl calkowity 1.2 mg/m ³ dymy, pyl respirabilny |
| Slovakia | NPHV (priemerná) (mg/m ³) | 1.5 mg/m ³ (respirabilná frakcia) 4 mg/m ³ (inhalovate ³ / ₄ ná frakcia) |
| Switzerland | VME (mg/m ³) | 3 mg/m ³ |
| Switzerland | Remark (CH) | (alveolengängige Fraktion) |
| Butyl acetate (123-86-4) | | |
| Austria | MAK (mg/m ³) | 480 mg/m ³ |
| Austria | MAK (ppm) | 100 ppm |
| Austria | MAK Short time value (mg/m ³) | 480 mg/m ³ |
| Austria | MAK Short time value (ppm) | 100 ppm |
| Austria | Remark (AT) | (gemessen als Momentanwert) |
| Denmark | Grænseværdie (kortvarig) (mg/m ³) | 1420 mg/m ³ |
| Denmark | Grænseværdie (kortvarig) (ppm) | 300 ppm |
| Lithuania | IPRV (mg/m ³) | 500 mg/m ³ |
| Lithuania | IPRV (ppm) | 100 ppm |
| Lithuania | TPRV (mg/m ³) | 700 mg/m ³ |
| Lithuania | TPRV (ppm) | 150 ppm |
| Slovakia | NPHV (priemerná) (mg/m ³) | 500 mg/m ³ |
| Slovakia | NPHV (priemerná) (ppm) | 100 ppm |
| Spain | VLA-ED (mg/m ³) | 724 mg/m ³ |
| Spain | VLA-ED (ppm) | 150 ppm |
| Spain | VLA-EC (mg/m ³) | 965 mg/m ³ |
| Spain | VLA-EC (ppm) | 200 ppm |
| Sweden | kortidsvärde (KTV) (mg/m ³) | 700 mg/m ³ |
| Sweden | kortidsvärde (KTV) (ppm) | 150 ppm |
| Norway | Gjennomsnittsverdier (AN) (mg/m ³) | 355 mg/m ³ |
| Norway | Gjennomsnittsverdier (AN) (ppm) | 75 ppm |

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| 2-methoxy-1-methylethyl acetate (108-65-6) | | |
|---|--|---|
| Denmark | Grænseværdie (kortvarig) (mg/m ³) | 550 mg/m ³ |
| Denmark | Grænseværdie (kortvarig) (ppm) | 100 ppm |
| Finland | Huomautus (FI) | iho |
| France | Note (FR) | Peau |
| Germany | TRGS 900 Limitation of exposure peaks (mg/m ³) | 270 mg/m ³ |
| Germany | TRGS 900 Limitation of exposure peaks (ppm) | 50 ppm |
| Slovakia | NPHV (priemerná) (mg/m ³) | 275 mg/m ³ |
| Slovakia | NPHV (priemerná) (ppm) | 50 ppm |
| Slovakia | Upozornenie (SK) | (K) |
| Spain | VLA-ED (mg/m ³) | 275 mg/m ³ |
| Spain | VLA-ED (ppm) | 50 ppm |
| Spain | VLA-EC (mg/m ³) | 550 mg/m ³ |
| Spain | VLA-EC (ppm) | 100 ppm |
| Spain | Notes | VLI |
| Sweden | Anmärkning (SE) | H |
| 2-methoxypropyl acetate (70657-70-4) | | |
| Czech Republic | Remark (CZ) | D |
| Denmark | Grænseværdie (kortvarig) (mg/m ³) | 220 mg/m ³ |
| Denmark | Grænseværdie (kortvarig) (ppm) | 40 ppm |
| Germany | TRGS 900 Limitation of exposure peaks (mg/m ³) | 224 mg/m ³ |
| Germany | TRGS 900 Limitation of exposure peaks (ppm) | 40 ppm |
| Slovakia | NPHV (priemerná) (mg/m ³) | 110 mg/m ³ |
| Slovakia | NPHV (priemerná) (ppm) | 20 ppm |
| Slovakia | Upozornenie (SK) | (K) |
| Spain | VLA-ED (mg/m ³) | 28 mg/m ³ |
| Spain | VLA-ED (ppm) | 5 ppm |
| Spain | VLA-EC (mg/m ³) | 220 mg/m ³ |
| Spain | VLA-EC (ppm) | 40 ppm |
| Spain | Notes | TR1B,r |
| Toluene (108-88-3) | | |
| EU | IOELV TWA (mg/m ³) | 192 mg/m ³ |
| EU | IOELV TWA (ppm) | 50 ppm |
| EU | IOELV STEL (mg/m ³) | 384 mg/m ³ |
| EU | IOELV STEL (ppm) | 100 ppm |
| EU | Notes | Skin |
| Denmark | Grænseværdie (kortvarig) (mg/m ³) | 188 mg/m ³ |
| Denmark | Grænseværdie (kortvarig) (ppm) | 50 ppm |
| France | Note (FR) | Peau |
| Germany | TRGS 903 (BGW) | 3 mg/l o-Kresol (Urin; bei Langzeitexposition/Expositionsende bzw. Schichtende) 1 mg/l Toluol (Blut; Expositionsende bzw. Schichtende) |
| Slovakia | NPHV (priemerná) (mg/m ³) | 192 mg/m ³ (K) |
| Slovakia | NPHV (priemerná) (ppm) | 50 ppm (K) 600 ppm (Toluén) 1.5 ppm (O-krezol) 2401 ppm (Kyselina hippurová) |
| Sweden | Anmärkning (SE) | (B,H) |
| barium sulfate (7727-43-7) | | |
| Belgium | Remark (BE) | (sulfate de) |
| Slovakia | NPHV (priemerná) (mg/m ³) | 1.5 mg/m ³ (respirabilná frakcia) 4 mg/m ³ (inhalovateľná frakcia) |
| United Kingdom | WEL TWA (mg/m ³) | 10 mg/m ³ inhalable aerosol 4 mg/m ³ respirable aerosol |

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| Carbon black (1333-86-4) | | |
|---|--|--|
| Belgium | Limit value (mg/m ³) | 3.5 mg/m ³ |
| Denmark | Grænseværdie (langvarig) (mg/m ³) | 3.5 mg/m ³ |
| Denmark | Anmærkninger (DK) | K |
| Finland | HTP-arvo (8h) (mg/m ³) | 3.5 mg/m ³ |
| Finland | HTP-arvo (15 min) | 7 mg/m ³ |
| France | VME (mg/m ³) | 3.5 mg/m ³ |
| Ireland | OEL (8 hours ref) (mg/m ³) | 3.5 mg/m ³ |
| Ireland | OEL (15 min ref) (mg/m ³) | 7 mg/m ³ |
| Spain | VLA-ED (mg/m ³) | 3.5 mg/m ³ |
| Sweden | nivågränsvärde (NVG) (mg/m ³) | 3 mg/m ³ |
| United Kingdom | Local name | Carbon black |
| United Kingdom | WEL TWA (mg/m ³) | 3.5 mg/m ³ |
| United Kingdom | WEL STEL (mg/m ³) | 7 mg/m ³ |
| Norway | Gjennomsnittsverdier (AN) (mg/m ³) | 3.5 mg/m ³ |
| aluminium powder (stabilised) (7429-90-5) | | |
| Belgium | Limit value (mg/m ³) | 1 mg/m ³ |
| Belgium | Remark (BE) | (Aluminium, métal et composés insolubles, fraction alvéolaire) |
| Denmark | Grænseværdie (kortvarig) (mg/m ³) | 4 mg/m ³ (respirabel) 10 mg/m ³ (total) |
| Finland | HTP-arvo (8h) (mg/m ³) | 2 mg/m ³ |
| Finland | Huomautus (FI) | (Alumiini, liukoiset yhdisteet) |
| France | VME (mg/m ³) | 5 mg/m ³ (pulvérulent) 10 mg/m ³ (metal) |
| Germany | TRGS 903 (BGW) | 200 µg/l |
| Germany | Remark (TRGS 903) | Aluminium (Urin; Expositionsende bzw. Schichtende) |
| Hungary | Megjegyzések (HU) | (respirabilis por) |
| Ireland | OEL (8 hours ref) (mg/m ³) | 1 mg/m ³ |
| Ireland | Notes (IE) | (respirable dust) |
| Lithuania | IPRV (mg/m ³) | 2 mg/m ³ (alveoline frakcija) 1 mg/m ³ (Aliuminis (metalas) ir jo tirpus junginiai, kaip Al) 5 mg/m ³ (akvepiamoji frakcija) |
| Netherlands | Grenswaarde TGG 8H (mg/m ³) | 10 mg/m ³ |
| Poland | NDS (mg/m ³) | 2.5 mg/m ³ (dymy, pyl calkowity) 1.2 mg/m ³ (dymy, pyl respirabilny) |
| Slovakia | NPHV (priemerná) (mg/m ³) | 2 mg/m ³ |
| Slovakia | NPHV (priemerná) (ppm) | 60 µg/g creatinine (Hlinik, M,a) 25 µg/g creatinine (Celkový, M,,d) 150 µg/g creatinine (Celkový,M,b) |
| Spain | VLA-ED (mg/m ³) | 10 mg/m ³ (inhalable aerosol) 5 mg/m ³ (respirable aerosol) |
| Sweden | nivågränsvärde (NVG) (mg/m ³) | 1 mg/m ³ (Aluminium, lösliga föreningar, som Al) 5 mg/m ³ (totaldamm, som Al) 2 mg/m ³ (respirabelt damm, som Al) |
| United Kingdom | WEL TWA (mg/m ³) | 10 mg/m ³ (inhalable dust) 4 mg/m ³ (respirable dust) |
| Norway | Merknader (NO) | (Aluminiumpulver, pyroteknikk) |
| Switzerland | VME (mg/m ³) | 3 mg/m ³ |
| Switzerland | Remark (CH) | (alveolengängiger Staub) |

8.2. Exposure controls

Appropriate engineering controls

: Provide local exhaust ventilation of closed transfer systems to minimize exposures.

Personal protective equipment

: Avoid all unnecessary exposure.

Hand protection

: None under normal use. It is a good industrial hygiene practice to minimize skin contact. Wear suitable gloves. rubber. EN 374.

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| | |
|------------------------|---|
| Eye protection | : No special eye protection equipment recommended under normal conditions of use. Eye protection should only be necessary where liquid could be splashed or sprayed. EN 166. |
| Respiratory protection | : No special respiratory protection equipment is recommended under normal conditions of use with adequate ventilation. In case of inadequate ventilation wear respiratory protection. Use an approved respirator equipped with oil/mist cartridges. EN 12083. |
| Other information | : Do not eat, drink or smoke when using this product. |

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|--------------------------------------|
| Physical state | : Liquid |
| Appearance | : Opaque liquid. |
| Colour | : Variable. |
| Odour | : Solvent. |
| Odour threshold | : No data available |
| pH | : No data available |
| Relative evaporation rate (butyl acetate=1) | : No data available |
| Melting point | : No data available |
| Freezing point | : No data available |
| Boiling point | : 103 °C |
| Flash point | : 8 °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 | : 67 % |
|-------------|--------|

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known.

10.2. Chemical stability

Highly flammable liquid and vapour.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Keep away from sources of ignition.

10.5. Incompatible materials

Oxidizing agent. Moisture. Alkali. acid.

10.6. Hazardous decomposition products

Thermal decomposition generates : metallic oxides. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Inhalation:dust,mist: Not classified. (Based on available data, the classification criteria are not met)

| Zinc (pyrophoric) (7440-66-6) | |
|-------------------------------|--------------------------------|
| LD50 oral rat | > 2000 mg/kg OECD 401 |
| LC50 inhalation rat (mg/l) | 5.41 g/m ³ OECD 403 |

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| | |
|---|---|
| ATE CLP (vapours) | 5.410 mg/l/4h |
| ATE CLP (dust,mist) | 5.410 mg/l/4h |
| Cyclohexanone (108-94-1) | |
| ATE CLP (dust,mist) | 1.500 mg/l/4h |
| Ethyl acetate (141-78-6) | |
| LD50 oral rat | 5620 mg/kg |
| LD50 dermal rabbit | > 20000 mg/kg |
| LC50 inhalation rat (mg/l) | > 18 mg/l/4h |
| ATE CLP (oral) | 5620.000 mg/kg bodyweight |
| aluminium powder (pyrophoric) (7429-90-5) | |
| LD50 oral rat | > 15900 mg/kg bodyweight |
| LC50 inhalation rat (Dust/Mist - mg/l/4h) | > 10 mg/l/4h |
| pentan-2-one (107-87-9) | |
| LD50 oral rat | 1600 (1600 - 3200) mg/kg |
| LC50 inhalation rat (mg/l) | 25.5 mg/l/4h |
| ATE CLP (oral) | 1600.000 mg/kg bodyweight |
| ATE CLP (vapours) | 25.500 mg/l/4h |
| ATE CLP (dust,mist) | 25.500 mg/l/4h |
| Titanium dioxide (13463-67-7) | |
| LD50 oral rat | > 5000 mg/kg |
| LC50 inhalation rat (mg/l) | > 6.82 mg/l/4h |
| Aluminum oxide (1344-28-1) | |
| LD50 oral rat | > 15900 mg/kg |
| LC50 inhalation rat (mg/l) | 7.6 mg/l/4h |
| ATE CLP (vapours) | 7.600 mg/l/4h |
| ATE CLP (dust,mist) | 7.600 mg/l/4h |
| Butyl acetate (123-86-4) | |
| LD50 oral rat | 10760 mg/kg |
| LD50 dermal rabbit | > 14112 mg/kg |
| LC50 inhalation rat (mg/l) | > 21 mg/l/4h |
| ATE CLP (oral) | 10760.000 mg/kg bodyweight |
| 2-methoxy-1-methylethyl acetate (108-65-6) | |
| LD50 oral rat | 8532 mg/kg |
| LD50 dermal rat | > 2000 mg/kg |
| LC50 inhalation rat (ppm) | 4345 ppm 6 h |
| ATE CLP (oral) | 8532.000 mg/kg bodyweight |
| 2-methoxypropyl acetate (70657-70-4) | |
| LC50 inhalation rat (ppm) | 2700 ppm 6 h |
| Toluene (108-88-3) | |
| LD50 oral rat | 5580 mg/kg EU Method B.1 (Acute Toxicity (Oral)) |
| LC50 inhalation rat (mg/l) | > 20 mg/l/4h OECD Guideline 403 (Acute Inhalation Toxicity) |
| ATE CLP (oral) | 5580.000 mg/kg bodyweight |
| barium sulfate (7727-43-7) | |
| LD50 oral rat | 307 g/kg |
| LD50 dermal rat | > 2000 mg/kg |
| ATE CLP (oral) | 307000.000 mg/kg bodyweight |
| [N,N,N',N'',N''',N''''-hexaethyl-29H,31H-phthalocyaninetrimethylaminato(2-)-N29,N30,N31,N32]copper (28654-73-1) | |
| LD50 oral rat | > 10000 mg/kg |
| LD50 dermal rat | > 2500 mg/kg |
| 4-[[4-(aminocarbonyl)phenyl]azo]-N-(2-ethoxyphenyl)-3-hydroxynaphthalene-2-carboxamide, C.I. Pigment Red 170 (2786-76-7) | |
| LD50 oral rat | > 15000 mg/kg |
| LC50 inhalation rat (mg/l) | > 1580 mg/m ³ 4 h |
| Carbon black (1333-86-4) | |
| LD50 oral rat | > 8000 mg/kg |
| LC50 inhalation rat (mg/l) | > 4.6 mg/m ³ 4 h |
| aluminium powder (stabilised) (7429-90-5) | |
| LD50 oral rat | > 15900 mg/kg |

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| aluminium powder (stabilised) (7429-90-5) | |
|--|--|
| LC50 inhalation rat (mg/l) | > 2.3 mg/l/4h No mortality observed in this study. |

| | |
|--|--|
| 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) |

| Titanium dioxide (13463-67-7) | |
|---|------------------------|
| NOAEL (chronic, oral, animal/male, 2 years) | 5 mg/kg bodyweight rat |

| barium sulfate (7727-43-7) | |
|---|---------------------|
| NOAEL (chronic, oral, animal/male, 2 years) | 60 mg/kg bodyweight |
| NOAEL (chronic, oral, animal/female, 2 years) | 75 mg/kg bodyweight |

| | |
|---|---|
| Reproductive toxicity | : Not classified (Based on available data, the classification criteria are not met) |
| Specific target organ toxicity (single exposure) | : Not classified (Based on available data, the classification criteria are not met) |
| Specific target organ toxicity (repeated exposure) | : Not classified (Based on available data, the classification criteria are not met) |

| Zinc (pyrophoric) (7440-66-6) | |
|--------------------------------------|--------------------------|
| NOAEL (oral, rat, 90 days) | 458 mg/kg bodyweight/day |

| Toluene (108-88-3) | |
|---------------------------------------|---|
| LOAEL (inhalation, rat, gas, 90 days) | 1250 ppmv/6h/day |
| NOAEL (oral, rat, 90 days) | 625 mg/kg bodyweight/day EU Method B.26. Increased relative weights of liver and kidney are interpreted as toxicologically insignificant differences in the absence of histological findings. |
| NOAEL (inhalation, rat, gas, 90 days) | 300 ppmv/6h/day OECD Guideline 453 |

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

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Harmful to aquatic life with long lasting effects.

| Zinc (pyrophoric) (7440-66-6) | |
|--------------------------------------|---|
| LC50 fish 1 | 0.168 (0.168 - 2.92) mg/l |
| EC50 Daphnia 1 | 1.833 (1.833 - 2.909) mg/l OECD 202 |
| NOEC (acute) | 0.117 mg/l 5 day study |
| NOEC chronic fish | 0.169 mg/l (0.169 - 0.172) 30 day study |
| NOEC chronic crustacea | 0.025 mg/l Basis for effect: reproduction. 1 wk study |
| NOEC chronic algae | 0.024 mg/l OECD 201 |

| Ethyl acetate (141-78-6) | |
|---------------------------------|-------------|
| LC50 fish 1 | 220 mg/l |
| EC50 Daphnia 1 | 1200 mg/l |
| NOEC chronic fish | < 9.35 mg/l |

| pentan-2-one (107-87-9) | |
|--------------------------------|-----------------|
| LC50 fish 1 | 1240 mg/l 96 h |
| EC50 Daphnia 1 | > 110 mg/l 48 h |
| ErC50 (algae) | > 150 mg/l 72 h |

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

| 2-methoxy-1-methylethyl acetate (108-65-6) | |
|---|-----------------|
| LC50 fish 1 | 100 - 180 mg/l |
| EC50 Daphnia 1 | > 500 mg/l 48 h |
| ErC50 (algae) | > 1000 mg/l |

| Toluene (108-88-3) | |
|---------------------------|-----------|
| LC50 fish 1 | 5.5 mg/l |
| EC50 Daphnia 2 | 3.78 mg/l |
| ErC50 (algae) | 134 mg/l |

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| | |
|---|---|
| Toluene (108-88-3) | |
| LOEC (chronic) | 2.77 mg/l |
| NOEC chronic fish | 1.39 mg/l |
| NOEC chronic crustacea | 0.74 mg/l |
| barium sulfate (7727-43-7) | |
| LC50 fish 1 | > 3.5 mg/l 96 h |
| EC50 Daphnia 1 | 14500 µg/l 48 h |
| [N,N,N',N',N'',N''-hexaethyl-29H,31H-phthalocyaninetrimethylamino(2-)-N29,N30,N31,N32]copper (28654-73-1) | |
| LC50 fish 1 | > 146 mg/l 96 h |
| EC50 Daphnia 1 | > 100 mg/l 48 h |
| 4-[[4-(aminocarbonyl)phenyl]azo]-N-(2-ethoxyphenyl)-3-hydroxynaphthalene-2-carboxamide, C.I. Pigment Red 170 (2786-76-7) | |
| LC50 fish 1 | > 500 mg/l 96 h |
| EC50 Daphnia 1 | > 110 mg/l 48 h |
| aluminium powder (stabilised) (7429-90-5) | |
| LC50 fish 1 | > 218.64 mg/l ASTM 2000; test material: aluminium chloride hexahydrate; Pimephales promelas |
| EC50 Daphnia 1 | 1.4 mg/l OECD Guideline 202; test material: Aluminium hydroxide |
| LOEC (acute) | 72.89 mg/l |
| NOEC (acute) | 37.2 mg/l |

12.2. Persistence and degradability

| | |
|---|---|
| Pro-Line® HP Paint Markers | |
| Persistence and degradability | May cause long-term adverse effects in the environment. |
| Ethyl acetate (141-78-6) | |
| Persistence and degradability | Readily biodegradable. |
| pentan-2-one (107-87-9) | |
| Persistence and degradability | Readily biodegradable. |
| Biodegradation | 70 % 28 d |
| 2-methoxy-1-methylethyl acetate (108-65-6) | |
| Persistence and degradability | Readily biodegradable. |
| Biodegradation | 89 % 10 d |
| Toluene (108-88-3) | |
| Persistence and degradability | Readily biodegradable. |
| 4-[[4-(aminocarbonyl)phenyl]azo]-N-(2-ethoxyphenyl)-3-hydroxynaphthalene-2-carboxamide, C.I. Pigment Red 170 (2786-76-7) | |
| Persistence and degradability | Not readily biodegradable. |
| Biodegradation | 0 % 28 d |
| Carbon black (1333-86-4) | |
| Persistence and degradability | Not readily biodegradable. |

12.3. Bioaccumulative potential

| | |
|---|--------------------------------|
| Pro-Line® HP Paint Markers | |
| Bioaccumulative potential | Not established. |
| Zinc (pyrophoric) (7440-66-6) | |
| Bioaccumulative potential | Not expected to bioaccumulate. |
| Ethyl acetate (141-78-6) | |
| Bioaccumulative potential | Not expected to bioaccumulate. |
| pentan-2-one (107-87-9) | |
| Log Pow | 0.857 |
| 2-methoxy-1-methylethyl acetate (108-65-6) | |
| Log Pow | 0.43 |
| Toluene (108-88-3) | |
| Bioconcentration factor (BCF REACH) | 90 |
| Log Kow | 2.73 |
| barium sulfate (7727-43-7) | |
| BCF fish 1 | 68.4 L/kg |
| 4-[[4-(aminocarbonyl)phenyl]azo]-N-(2-ethoxyphenyl)-3-hydroxynaphthalene-2-carboxamide, C.I. Pigment Red 170 (2786-76-7) | |
| BCF fish 1 | 53 l/kg |

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4-[[4-(aminocarbonyl)phenyl]azo]-N-(2-ethoxyphenyl)-3-hydroxynaphthalene-2-carboxamide, C.I. Pigment Red 170 (2786-76-7)

Log Pow : 1.28

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

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PBT: not yet assessed

vPvB: not yet assessed

Component

| | |
|--------------------------|---|
| Ethyl acetate (141-78-6) | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |
| Toluene (108-88-3) | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |

12.6. Other adverse effects

No additional information available

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. |
| European List of Waste (LoW) code | : For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used. 20 01 27* - paint, inks, adhesives and resins containing dangerous substances |

SECTION 14: Transport information

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

14.1. UN number

| | |
|---------------|--------|
| UN-No. (ADR) | : 1263 |
| UN-No.(IATA) | : 1263 |
| UN-No. (IMDG) | : 1263 |
| UN-No.(ADN) | : 1263 |

14.2. UN proper shipping name

| | |
|--------------------------------------|-------------------------------|
| Proper Shipping Name (ADR) | : PAINT |
| Proper Shipping Name (IATA) | : PAINT |
| Proper Shipping Name (IMDG) | : PAINT |
| Proper Shipping Name (ADN) | : PAINT |
| Transport document description (ADR) | : UN 1263 PAINT, 3, II, (D/E) |

14.3. Transport hazard class(es)

| | |
|---------------------------|------|
| Class (ADR) | : 3 |
| Classification code (ADR) | : F1 |
| Class (IATA) | : 3 |
| Class (IMDG) | : 3 |
| Class (ADN) | : 3 |
| Classification code (ADN) | : F1 |

14.4. Packing group

| | |
|----------------------|------|
| Packing group (ADR) | : II |
| Packing group (IATA) | : II |
| Packing group (IMDG) | : II |
| Packing group (ADN) | : II |

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

14.6.1. Overland transport

| | |
|---|------|
| Hazard identification number (Kemler No.) | : 33 |
| Classification code (ADR) | : F1 |

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Orange plates



Tunnel restriction code (ADR)

: D/E

EAC code

: •3YE

14.6.2. Transport by sea

EmS-No. (Fire)

: F-E

EmS-No. (Spillage)

: S-E

Stowage category (IMDG)

: B

14.6.3. Inland waterway transport

Carriage prohibited (ADN)

: No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 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

Contains no substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

VOC content : 67 %

15.1.2. National regulations

Germany

Water hazard class (WGK) : 1 - low hazard to waters

WGK remark : Classification based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS)

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

according to Regulation (EC) No. 453/2010

Indication of changes:

Added Product.

Abbreviations and acronyms:

| | |
|--|---|
| | ATE: Acute Toxicity Estimate |
| | CAS (Chemical Abstracts Service) number |
| | CLP: Classification, Labelling, Packaging. |
| | 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 |
| | OSHA: Occupational Safety & Health Administration |
| | PBT: Persistent, Bioaccumulative, Toxic |
| | TWA: Time Weight Average |
| | TSCA: Toxic Substances Control Act |

Pro-Line® HP Paint Markers

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according to Regulation (EC) No. 453/2010

| | |
|-------------------|--|
| Data sources | : ESIS (European chemical 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 R-, H- and EUH-phrases:

| | |
|-------------------------------------|--|
| Acute Tox. 4 (Inhalation:dust,mist) | Acute toxicity (inhalation:dust,mist) Category 4 |
| Acute Tox. 4 (Oral) | Acute toxicity (oral), Category 4 |
| Aquatic Acute 1 | Hazardous to the aquatic environment — Acute Hazard, Category 1 |
| Aquatic Chronic 1 | Hazardous to the aquatic environment — Chronic Hazard, Category 1 |
| Asp. Tox. 1 | Aspiration hazard, Category 1 |
| Carc. 2 | Carcinogenicity, Category 2 |
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| Flam. Liq. 2 | Flammable liquids, Category 2 |
| Flam. Liq. 3 | Flammable liquids, Category 3 |
| Flam. Sol. 1 | Flammable solids, Category 1 |
| Pyr. Sol. 1 | Pyrophoric Solids, Category 1 |
| Repr. 1B | Reproductive toxicity, Category 1B |
| Repr. 2 | Reproductive toxicity, Category 2 |
| Skin Irrit. 2 | Skin corrosion/irritation, Category 2 |
| Skin Sens. 1 | Sensitisation — Skin, category 1 |
| Skin Sens. 1B | Sensitisation — Skin, category 1B |
| STOT RE 2 | Specific target organ toxicity — Repeated exposure, Category 2 |
| STOT SE 3 | Specific target organ toxicity — Single exposure, Category 3, Narcosis |
| STOT SE 3 | Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation |
| Water-react. 1 | Substances and Mixtures which, in contact with water, emit flammable gases, Category 1 |
| Water-react. 2 | Substances and Mixtures which, in contact with water, emit flammable gases, Category 2 |
| H225 | Highly flammable liquid and vapour |
| H226 | Flammable liquid and vapour |
| H228 | Flammable solid |
| H250 | Catches fire spontaneously if exposed to air |
| H260 | In contact with water releases flammable gases which may ignite spontaneously |
| H261 | In contact with water releases flammable gases |
| H302 | Harmful if swallowed |
| 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 |
| H332 | Harmful if inhaled |
| H335 | May cause respiratory irritation |
| H336 | May cause drowsiness or dizziness |
| H351 | Suspected of causing cancer |
| H360D | May damage the unborn child |
| H361d | Suspected of damaging the unborn child |
| H373 | May cause damage to organs through prolonged or repeated exposure |
| H400 | Very toxic to aquatic life |
| H410 | Very toxic to aquatic life with long lasting effects |
| R10 | Flammable |
| R11 | Highly flammable |
| R15 | Contact with water liberates extremely flammable gases |
| R17 | Spontaneously flammable in air |
| R20 | Harmful by inhalation |
| R22 | Harmful if swallowed |
| R36 | Irritating to eyes |

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| | |
|--------|---|
| R37 | Irritating to respiratory system |
| R38 | Irritating to skin |
| R40 | Limited evidence of a carcinogenic effect |
| R43 | May cause sensitisation by skin contact |
| R48/20 | Harmful: danger of serious damage to health by prolonged exposure through inhalation |
| R50/53 | Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment |
| R61 | May cause harm to the unborn child |
| R63 | Possible risk of harm to the unborn child |
| R65 | Harmful: may cause lung damage if swallowed |
| R66 | Repeated exposure may cause skin dryness or cracking |
| R67 | Vapours may cause drowsiness and dizziness |
| F | Highly flammable |
| N | Dangerous for the environment |
| Xi | Irritant |
| Xn | Harmful |

LA-CO EU CLP SDS

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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