

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/Antigifcentrum c/o Hôpital Central de la Base - Reine Astrid	Rue Bruyn 1 B -1120 Bruxelles/Brussel	+32 70 245 245
BULGARIA	Национален токсикологичен информационен център National Clinical Toxicology Centre, Emergency Medical Institute "Pirogov"	21 Tottleben Boulevard 1606 SOFIA	+359 2 9154 409
CROATIA	Poisons Control Centre Institute of Medical Research & Occupational Health	Ksaverska Cesta 2 P.O. Box 291 HR-10000 Zagreb	+385 1 234 8342
CZECH REPUBLIC	Toxikologické informační středisko Clinic For Occupational Medicine, 1st Medical Faculty, Charles University	Na Bojišti 1 120 00 Praha 2	+42 2 2491 9293 +42 2 2491 5402
DENMARK	Giftlinjen Bispebjerg Hospital	Bispebjerg Bakke 23, 60, 1 DK-2400 København NV	+45 82 12 12 12 +45 35 31 55 55
ESTONIA	Mürgistusteabekeskus	Gonsiori 29 15027 Tallinn	+372 626 93 90
FINLAND	Myrkytystietokeskus	P.O.B 340 (Haartmaninkatu 4) HUS SF - 00029 Helsinki	+358 9 471 977
FRANCE	ORFILA		+33 1 45 42 59 59
GERMANY	Berliner Betrieb für Zentrale Gesundheitliche Aufgaben	Oranienburger Strasse 285 13437 Berlin	+49 30 19240
GERMANY	Informations und Beratungszentrum für Vergiftungsfälle	Kirnberger 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

Pro-Line® HP Paint Markers

Safety Data Sheet

according to Regulation (EC) No. 453/2010

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 Rīga	+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

Pro-Line® HP Paint Markers

Safety Data Sheet

according to Regulation (EC) No. 453/2010

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/flamm resistant/retardant clothing. Wear a self contained breathing apparatus. EN469.

Pro-Line® HP Paint Markers

Safety Data Sheet

according to Regulation (EC) No. 453/2010

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 (eintembarer 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

Pro-Line® HP Paint Markers

Safety Data Sheet

according to Regulation (EC) No. 453/2010

Ethyl acetate (141-78-6)		
Denmark	Grænseværdie (kortvarig) (mg/m³)	1080 mg/m³
Denmark	Grænseværdie (kortvarig) (ppm)	300 ppm
Slovakia	NPHV (priemerná) (mg/m³)	500 mg/m³
Slovakia	NPHV (priemerná) (ppm)	150 ppm
Spain	VLA-ED (mg/m³)	1460 mg/m³
Spain	VLA-ED (ppm)	400 ppm
United Kingdom	WEL TWA (mg/m³)	730 mg/m³
United Kingdom	WEL STEL (mg/m³)	1460 mg/m³
aluminium powder (pyrophoric) (7429-90-5)		
Belgium	Limit value (mg/m³)	1 mg/m³
Belgium	Remark (BE)	(Aluminium, métal et composés insolubles, fraction alvéolaire)
Denmark	Grænseværdie (kortvarig) (mg/m³)	4 mg/m³ (respirabel) 10 mg/m³ (total)
Finland	HTP-arvo (8h) (mg/m³)	2 mg/m³
Finland	Huomautus (FI)	(Alumiini, liukoiset yhdisteet)
France	VME (mg/m³)	5 mg/m³ (pulvérulent) 10 mg/m³ (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/m³)	1 mg/m³
Ireland	Notes (IE)	(respirable dust)
Lithuania	IPRV (mg/m³)	2 mg/m³ (alveoline frakcija) 1 mg/m³ (Aluminis (metalas) ir jo tirpus junginiai, kaip Al) 5 mg/m³ (ákvepiamoji frakcija)
Netherlands	Grenswaarde TGG 8H (mg/m³)	10 mg/m³
Poland	NDS (mg/m³)	2.5 mg/m³ (dymy, pyl calkowity) 1.2 mg/m³ (dymy, pyl respirabilny)
Slovakia	NPHV (priemerná) (mg/m³)	2 mg/m³
Slovakia	NPHV (priemerná) (ppm)	60 µg/g creatinine (Hliník, M,a) 25 µg/g creatinine (Celkový, M,,d) 150 µg/g creatinine (Celkový,M,b)
Spain	VLA-ED (mg/m³)	10 mg/m³ (inhalable aerosol) 5 mg/m³ (respirable aerosol)
Sweden	nivågränsvärde (NVG) (mg/m³)	1 mg/m³ (Aluminium, lösliga föreningar, som Al) 5 mg/m³ (totaldamm, som Al) 2 mg/m³ (respirabelt damm, som Al)
United Kingdom	WEL TWA (mg/m³)	10 mg/m³ (inhalable dust) 4 mg/m³ (respirable dust)
Norway	Merknader (NO)	(Aluminiumpulver, pyroteknikk)
Switzerland	VME (mg/m³)	3 mg/m³
Switzerland	Remark (CH)	(alveolengängiger Staub)
pentan-2-one (107-87-9)		
Austria	MAK (mg/m³)	700 mg/m³
Austria	MAK (ppm)	200 ppm
Austria	MAK Short time value (mg/m³)	1400 mg/m³ max. 4x15 min./Schicht
Austria	MAK Short time value (ppm)	400 ppm max. 4x15 min./Schicht
Belgium	Short time value (mg/m³)	537 mg/m³
Belgium	Short time value (ppm)	150 ppm
Denmark	Grænseværdie (langvarig) (mg/m³)	700 mg/m³
Denmark	Grænseværdie (langvarig) (ppm)	200 ppm
Denmark	Grænseværdie (kortvarig) (mg/m³)	1400 mg/m³
Denmark	Grænseværdie (kortvarig) (ppm)	400 ppm
Finland	HTP-arvo (8h) (mg/m³)	710 mg/m³

Pro-Line® HP Paint Markers

Safety Data Sheet

according to Regulation (EC) No. 453/2010

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)

Pro-Line® HP Paint Markers

Safety Data Sheet

according to Regulation (EC) No. 453/2010

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

Pro-Line® HP Paint Markers

Safety Data Sheet

according to Regulation (EC) No. 453/2010

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

Pro-Line® HP Paint Markers

Safety Data Sheet

according to Regulation (EC) No. 453/2010

Carbon black (1333-86-4)		
Belgium	Limit value (mg/m³)	3.5 mg/m³
Denmark	Grænseværdie (langvarig) (mg/m³)	3.5 mg/m³
Denmark	Anmærkninger (DK)	K
Finland	HTP-arvo (8h) (mg/m³)	3.5 mg/m³
Finland	HTP-arvo (15 min)	7 mg/m³
France	VME (mg/m³)	3.5 mg/m³
Ireland	OEL (8 hours ref) (mg/m³)	3.5 mg/m³
Ireland	OEL (15 min ref) (mg/m³)	7 mg/m³
Spain	VLA-ED (mg/m³)	3.5 mg/m³
Sweden	nivågränsvärde (NVG) (mg/m³)	3 mg/m³
United Kingdom	Local name	Carbon black
United Kingdom	WEL TWA (mg/m³)	3.5 mg/m³
United Kingdom	WEL STEL (mg/m³)	7 mg/m³
Norway	Gjennomsnittsverdier (AN) (mg/m³)	3.5 mg/m³
aluminium powder (stabilised) (7429-90-5)		
Belgium	Limit value (mg/m³)	1 mg/m³
Belgium	Remark (BE)	(Aluminium, métal et composés insolubles, fraction alvéolaire)
Denmark	Grænseværdie (kortvarig) (mg/m³)	4 mg/m³ (respirabel) 10 mg/m³ (total)
Finland	HTP-arvo (8h) (mg/m³)	2 mg/m³
Finland	Huomautus (FI)	(Alumiini, liukoiset yhdisteet)
France	VME (mg/m³)	5 mg/m³ (pulvérulent) 10 mg/m³ (métal)
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/m³)	1 mg/m³
Ireland	Notes (IE)	(respirable dust)
Lithuania	IPRV (mg/m³)	2 mg/m³ (alveoline frakcija) 1 mg/m³ (Aliuminis (metalas) ir jo tirpus junginiai, kaip Al) 5 mg/m³ (akvepiamoji frakcija)
Netherlands	Grenswaarde TGG 8H (mg/m³)	10 mg/m³
Poland	NDS (mg/m³)	2.5 mg/m³ (dymy, pyl całkowity) 1.2 mg/m³ (dymy, pyl respirabilny)
Slovakia	NPHV (priemerná) (mg/m³)	2 mg/m³
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/m³)	10 mg/m³ (inhalable aerosol) 5 mg/m³ (respirable aerosol)
Sweden	nivågränsvärde (NVG) (mg/m³)	1 mg/m³ (Aluminium, lösliga föreningar, som Al) 5 mg/m³ (totaldamm, som Al) 2 mg/m³ (respirabelt damm, som Al)
United Kingdom	WEL TWA (mg/m³)	10 mg/m³ (inhalable dust) 4 mg/m³ (respirable dust)
Norway	Merknader (NO)	(Aluminiumpulver, pyroteknikk)
Switzerland	VME (mg/m³)	3 mg/m³
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.

Pro-Line® HP Paint Markers

Safety Data Sheet

according to Regulation (EC) No. 453/2010

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 %
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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)
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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

Pro-Line® HP Paint Markers

Safety Data Sheet

according to Regulation (EC) No. 453/2010

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'''-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/m³ 4 h
Carbon black (1333-86-4)	
LD50 oral rat	> 8000 mg/kg
LC50 inhalation rat (mg/l)	> 4.6 mg/m³ 4 h
aluminium powder (stabilised) (7429-90-5)	
LD50 oral rat	> 15900 mg/kg

Pro-Line® HP Paint Markers

Safety Data Sheet

according to Regulation (EC) No. 453/2010

aluminium powder (stabilised) (7429-90-5)

LC50 inhalation rat (mg/l)	> 2.3 mg/l/4h No mortality observed in this study.
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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
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barium sulfate (7727-43-7)

NOAEL (chronic, oral, animal/male, 2 years)	60 mg/kg bodyweight
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NOAEL (chronic, oral, animal/female, 2 years)	75 mg/kg bodyweight
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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
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Toluene (108-88-3)

LOAEL (inhalation, rat, gas, 90 days)	1250 ppmv/6h/day
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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.
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NOAEL (inhalation, rat, gas, 90 days)	300 ppmv/6h/day OECD Guideline 453
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Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)
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SECTION 12: Ecological information

12.1. Toxicity

Ecology - water	: Harmful to aquatic life with long lasting effects.
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Zinc (pyrophoric) (7440-66-6)

LC50 fish 1	0.168 (0.168 - 2.92) mg/l
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EC50 Daphnia 1	1.833 (1.833 - 2.909) mg/l OECD 202
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NOEC (acute)	0.117 mg/l 5 day study
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NOEC chronic fish	0.169 mg/l (0.169 - 0.172) 30 day study
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NOEC chronic crustacea	0.025 mg/l Basis for effect: reproduction. 1 wk study
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NOEC chronic algae	0.024 mg/l OECD 201
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Ethyl acetate (141-78-6)

LC50 fish 1	220 mg/l
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EC50 Daphnia 1	1200 mg/l
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NOEC chronic fish	< 9.35 mg/l
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pentan-2-one (107-87-9)

LC50 fish 1	1240 mg/l 96 h
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EC50 Daphnia 1	> 110 mg/l 48 h
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ErC50 (algae)	> 150 mg/l 72 h
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Aluminum oxide (1344-28-1)

EC50 Daphnia 1	> 1470 mg/l
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NOEC (acute)	> 50 mg/l
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2-methoxy-1-methylethyl acetate (108-65-6)

LC50 fish 1	100 - 180 mg/l
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EC50 Daphnia 1	> 500 mg/l 48 h
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ErC50 (algae)	> 1000 mg/l
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Toluene (108-88-3)

LC50 fish 1	5.5 mg/l
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EC50 Daphnia 2	3.78 mg/l
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ErC50 (algae)	134 mg/l
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Pro-Line® HP Paint Markers

Safety Data Sheet

according to Regulation (EC) No. 453/2010

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-phthalocyaninetrimethylaminato(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

Pro-Line® HP Paint Markers

Safety Data Sheet

according to Regulation (EC) No. 453/2010

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

Pro-Line® HP Paint Markers

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

Pro-Line® HP Paint Markers

Safety Data Sheet

according to Regulation (EC) No. 453/2010

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

Safety Data Sheet

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

Pro-Line® HP Paint Markers

Safety Data Sheet

according to Regulation (EC) No. 453/2010

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