	<b>SAFETY DATA SHEET</b>	Page : 1 / 21
	<b>Disposable pens and cartridges for plotters</b>	Revision nr : 3.0
		Issue date : 25/05/2021
		Supersedes : 18/12/2015

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

### 1.1. Product identifier

Product form : Mixture  
Trade name : Disposable pens and cartridges for plotters  
Product code : PEN025.A /Y4252002  
PEN035.A /Y4252003  
SACART.A /Y4252004  
Product group : Trade product

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

#### 1.2.1. Relevant identified uses

Main use category : Industrial use  
Use of the substance/mixture : Inks and toner

#### 1.2.2. Uses advised against

No additional information available

### 1.3. Details of the supplier of the safety data sheet

WH Brady NV  
Lindestraat 20  
9240 Zele - Belgium  
T +32 52457811  
[regulatory\\_compliance EMEA@bradycorp.com](mailto:regulatory_compliance_EMEA@bradycorp.com)

### 1.4. Emergency telephone number

Emergency number : +32 52457811  
Only available during office hours.


Country	Official advisory body	Address	Emergency number
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals-24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit	Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle	0844 892 0111 (UK only, 24/7, healthcare professionals only)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

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

Flam. Liq. 2 H225  
Eye Irrit. 2 H319  
Repr. 1B H360  
STOT SE 3 H336  
STOT SE 3 H335  
Aquatic Chronic 3 H412

	<b>SAFETY DATA SHEET</b>	Page : 2 / 21
	<b>Disposable pens and cartridges for plotters</b>	Revision nr : 3.0
		Issue date : 25/05/2021
		Supersedes : 18/12/2015

Full text of H-statements: see section 16

## 2.2. Label elements

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

Hazard pictograms (CLP) :



Signal word :

Danger

Hazardous ingredients :

2,6-dimethylheptan-4-one; butanone; ethyl methyl ketone; Mixture of : tert-alkyl(C12-C14)ammonium bis[1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphtalenolato(2-)]-chromate(1-) ; etc

Hazard statements (CLP) :

H225 - Highly flammable liquid and vapour.  
H319 - Causes serious eye irritation.  
H335 - May cause respiratory irritation.  
H336 - May cause drowsiness or dizziness.  
H360 - May damage fertility or the unborn child.  
H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements (CLP) :

P201 - Obtain special instructions before use.  
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P261 - Avoid breathing vapours.  
P273 - Avoid release to the environment.  
P280 - Wear protective clothing, eye protection, face protection.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308+P313 - IF exposed or concerned: Get medical advice, medical attention.  
P403+P235 - Store in a well-ventilated place. Keep cool.

Extra phrases :

Restricted to professional users

## 2.3. Other hazards

Other hazards :

PBT/vPvB data : The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.


The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

	<b>SAFETY DATA SHEET</b>	Page : 3 / 21
		Revision nr : 3.0
	<b>Disposable pens and cartridges for plotters</b>	Issue date : 25/05/2021
		Supersedes : 18/12/2015

Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2,6-dimethylheptan-4-one	(CAS-No.) 108-83-8 (EC-No.) 203-620-1 (EC Index) 606-005-00-X	30 – 40	Flam. Liq. 3, H226 STOT SE 3, H335
butanone; ethyl methyl ketone	(CAS-No.) 78-93-3 (EC-No.) 201-159-0 (EC Index) 606-002-00-3	30 – 40	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336
Mixture of : tert-alkyl(C12-C14)ammonium bis[1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphtalenolato(2-)]-chromate(1-); etc	(CAS-No.) 117527-94-3 (EC-No.) 403-720-7 (EC Index) 611-044-00-0	5 – 10	Repr. 1B, H360 Aquatic Chronic 2, H411

**Specific concentration limits:**

Substance name	Product identifier	Specific concentration limits
2,6-dimethylheptan-4-one	(CAS-No.) 108-83-8 (EC-No.) 203-620-1 (EC Index) 606-005-00-X	( 10 ≤C < 100) STOT SE 3, H335

Full text of H- and EUH-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

Additional advice	: First aider: Pay attention to self-protection!. Concerning personal protective equipment to use, see section 8. Never give anything by mouth to an unconscious person. Symptoms may be delayed. In case of doubt or persistent symptoms, consult always a physician. Show this safety data sheet to the doctor in attendance.
Inhalation	: Remove casualty to fresh air and keep warm and at rest. Give oxygen or artificial respiration if necessary. In case of doubt or persistent symptoms, consult always a physician.
Skin contact	: Remove contaminated clothing and shoes. Gently wash with plenty of soap and water. In case of doubt or persistent symptoms, consult always a physician.
Eyes contact	: Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
Ingestion	: Rinse mouth thoroughly with water. Drink plenty of water. Do NOT induce vomiting. Get medical advice/attention.

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

Inhalation	: May cause respiratory irritation. May cause drowsiness or dizziness.
Skin contact	: May cause skin irritation.
Eyes contact	: Causes serious eye irritation.
Ingestion	: May cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
Chronic symptoms	: May damage fertility or the unborn child.

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

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media	: Water spray, Alcohol resistant foam, Carbon dioxide, Dry extinguishing powder.
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	<b>SAFETY DATA SHEET</b>	Page : 4 / 21
	<b>Disposable pens and cartridges for plotters</b>	Revision nr : 3.0
		Issue date : 25/05/2021
		Supersedes : 18/12/2015

Unsuitable extinguishing media : Strong water jet.

**5.2. Special hazards arising from the substance or mixture**

Specific hazards : Highly flammable liquid and vapour. Heating can release vapours which can be ignited.

Hazardous decomposition products in case of fire : Carbon oxides (CO, CO<sub>2</sub>). Nitrogen oxides (NO<sub>x</sub>). Sulphur oxides. Other toxic gases.

**5.3. Advice for firefighters**

Firefighting instructions : Evacuate area. Use water spray or fog for cooling exposed containers. Contain the extinguishing fluids by bunding. Prevent fire fighting water from entering the environment.

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus.

Other information : Do not allow run-off from fire-fighting to enter drains or water courses. Dispose of waste in accordance with environmental legislation.

**SECTION 6: Accidental release measures**

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

**6.1.1. For non-emergency personnel**

For non-emergency personnel : Evacuate personnel to a safe area. Do not breathe vapour. Avoid contact with skin and eyes. Use personal protective equipment as required. Concerning personal protective equipment to use, see section 8 . Provide for sufficient ventilation, particularly in closed rooms. Stay upwind/keep distance from source. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**6.1.2. For emergency responders**

For emergency responders : Ensure procedures and training for emergency decontamination and disposal are in place. Concerning personal protective equipment to use, see section 8.

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains. Notify authorities if product enters sewers or public waters.

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

Methods for cleaning up : Stop leak if safe to do so. Dam up the liquid spill. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. Recover large spills by pumping (use an explosion proof or hand pump). Place in a suitable container for disposal in accordance with the waste regulations (see Section 13). This material and its container must be disposed of in a safe way, and as per local legislation.


**6.4. Reference to other sections**

Concerning personal protective equipment to use, see section 8 . Concerning disposal elimination after cleaning, see section 13.

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

Additional hazards when processed : In use, may form flammable vapour-air mixture. Vapours are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapours.

	<b>SAFETY DATA SHEET</b>	Page : 5 / 21
	<b>Disposable pens and cartridges for plotters</b>	Revision nr : 3.0
		Issue date : 25/05/2021
		Supersedes : 18/12/2015

**Precautions for safe handling** : Provide adequate ventilation. Use only in area provided with appropriate exhaust ventilation. Do not breathe vapours. Avoid contact with skin, eyes and clothing. Use personal protective equipment as required. Concerning personal protective equipment to use, see section 8 . Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Ensure equipment is adequately earthed.

**Hygiene measures** : Keep good industrial hygiene. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product. Keep away from food, drink and animal feedingstuffs. Remove contaminated clothes. Separate working clothes from town clothes. Launder separately. Wash contaminated clothing before reuse.

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

**Storage conditions** : Store in a dry, cool and well-ventilated place. Do not store near or with any of the incompatible materials listed in section 10. Bund storage facilities to prevent soil and water pollution in the event of spillage.

**Incompatible materials** : Strong oxidizing agents. Strong acids. Strong bases.

**Heat and ignition sources** : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep out of direct sunlight.

**Special rules on packaging** : Containers which are opened should be properly resealed and kept upright to prevent leakage. Keep container tight closed.

**Packaging materials** : Keep only in the original container.

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

Inks and toner.

## **SECTION 8: Exposure controls/personal protection**

### **8.1. Control parameters**

<b>2,6-dimethylheptan-4-one (108-83-8)</b>		
Austria	MAK (OEL TWA)	290 mg/m <sup>3</sup>
Austria	MAK (OEL TWA) [ppm]	50 ppm
Belgium	OEL TWA	147 mg/m <sup>3</sup>
Belgium	OEL TWA [ppm]	25 ppm
Croatia	GVI (OEL TWA) [1]	148 mg/m <sup>3</sup>
Croatia	GVI (OEL TWA) [2]	25 ppm
Denmark	OEL TWA [1]	150 mg/m <sup>3</sup>
Denmark	OEL TWA [2]	25 ppm
Finland	HTP (OEL TWA) [1]	150 mg/m <sup>3</sup>
Finland	HTP (OEL TWA) [2]	25 ppm
Finland	HTP (OEL STEL)	240 mg/m <sup>3</sup>
Finland	HTP (OEL STEL) [ppm]	40 ppm
France	VME (OEL TWA)	250 mg/m <sup>3</sup>
France	VME (OEL TWA) [ppm]	25 ppm
Greece	OEL TWA	290 mg/m <sup>3</sup>
Greece	OEL TWA [ppm]	50 ppm
Ireland	OEL TWA [1]	150 mg/m <sup>3</sup>
Ireland	OEL TWA [2]	25 ppm



# SAFETY DATA SHEET

Page : 6 / 21

Revision nr : 3.0

Issue date : 25/05/2021

Supersedes : 18/12/2015

## Disposable pens and cartridges for plotters

### 2,6-dimethylheptan-4-one (108-83-8)

Ireland	OEL STEL	450 mg/m <sup>3</sup> (calculated)
Ireland	OEL STEL [ppm]	75 ppm (calculated)
Poland	NDS (OEL TWA)	150 mg/m <sup>3</sup>
Poland	NDSch (OEL STEL)	300 mg/m <sup>3</sup>
Portugal	OEL TWA [ppm]	25 ppm
Romania	OEL TWA	150 mg/m <sup>3</sup>
Romania	OEL TWA [ppm]	26 ppm
Romania	OEL STEL	250 mg/m <sup>3</sup>
Romania	OEL STEL [ppm]	43 ppm
Spain	VLA-ED (OEL TWA) [1]	148 mg/m <sup>3</sup>
Spain	VLA-ED (OEL TWA) [2]	25 ppm
United Kingdom	WEL TWA (OEL TWA) [1]	148 mg/m <sup>3</sup>
United Kingdom	WEL TWA (OEL TWA) [2]	25 ppm
United Kingdom	WEL STEL (OEL STEL)	444 mg/m <sup>3</sup> (calculated)
United Kingdom	WEL STEL (OEL STEL) [ppm]	75 ppm (calculated)
Norway	Grenseverdi (OEL TWA) [1]	120 mg/m <sup>3</sup>
Norway	Grenseverdi (OEL TWA) [2]	20 ppm
Norway	Korttidsverdi (OEL STEL)	150 mg/m <sup>3</sup> (value calculated)
Norway	Korttidsverdi (OEL STEL) [ppm]	30 ppm (value calculated)
Switzerland	MAK (OEL TWA) [1]	150 mg/m <sup>3</sup>
Switzerland	MAK (OEL TWA) [2]	25 ppm
Australia	OES TWA [1]	145 mg/m <sup>3</sup>
Australia	OES TWA [2]	25 ppm
Canada (Quebec)	VEMP (OEL TWA)	145 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (OEL TWA) [ppm]	25 ppm
USA - ACGIH	ACGIH OEL TWA [ppm]	25 ppm
USA - IDLH	IDLH [ppm]	500 ppm
USA - NIOSH	NIOSH REL TWA	150 mg/m <sup>3</sup>
USA - NIOSH	NIOSH REL TWA [ppm]	25 ppm
USA - OSHA	OSHA PEL TWA [1]	290 mg/m <sup>3</sup>
USA - OSHA	OSHA PEL TWA [2]	50 ppm

### butanone; ethyl methyl ketone (78-93-3)

EU	IOEL TWA	600 mg/m <sup>3</sup>
EU	IOEL TWA [ppm]	200 ppm
EU	IOEL STEL	900 mg/m <sup>3</sup>
EU	IOEL STEL [ppm]	300 ppm
Austria	MAK (OEL TWA)	295 mg/m <sup>3</sup>
Austria	MAK (OEL TWA) [ppm]	100 ppm
Austria	MAK (OEL STEL)	590 mg/m <sup>3</sup> (Butanone)
Austria	MAK (OEL STEL) [ppm]	200 ppm (Butanone)
Belgium	OEL TWA	600 mg/m <sup>3</sup>
Belgium	OEL TWA [ppm]	200 ppm



# SAFETY DATA SHEET

Page : 7 / 21

Revision nr : 3.0

Issue date : 25/05/2021

Supersedes : 18/12/2015

## Disposable pens and cartridges for plotters

butanone; ethyl methyl ketone (78-93-3)		
Belgium	OEL STEL	900 mg/m <sup>3</sup>
Belgium	OEL STEL [ppm]	300 ppm
Bulgaria	OEL TWA	590 mg/m <sup>3</sup>
Bulgaria	OEL STEL	885 mg/m <sup>3</sup>
Croatia	GVI (OEL TWA) [1]	600 mg/m <sup>3</sup>
Croatia	GVI (OEL TWA) [2]	200 ppm
Croatia	KGVI (OEL STEL)	900 mg/m <sup>3</sup>
Croatia	KGVI (OEL STEL) [ppm]	300 ppm
Cyprus	OEL TWA	600 mg/m <sup>3</sup>
Cyprus	OEL TWA [ppm]	200 ppm
Cyprus	OEL STEL	900 mg/m <sup>3</sup>
Cyprus	OEL STEL [ppm]	300 ppm
Czech Republic	PEL (OEL TWA)	600 mg/m <sup>3</sup>
Denmark	OEL TWA [1]	145 mg/m <sup>3</sup>
Denmark	OEL TWA [2]	50 ppm
Estonia	OEL TWA	600 mg/m <sup>3</sup>
Estonia	OEL TWA [ppm]	200 ppm
Estonia	OEL STEL	900 mg/m <sup>3</sup>
Estonia	OEL STEL [ppm]	300 ppm
Finland	HTP (OEL TWA) [1]	60 mg/m <sup>3</sup>
Finland	HTP (OEL TWA) [2]	20 ppm
Finland	HTP (OEL STEL)	300 mg/m <sup>3</sup>
Finland	HTP (OEL STEL) [ppm]	100 ppm
France	VME (OEL TWA)	600 mg/m <sup>3</sup> (restrictive limit)
France	VME (OEL TWA) [ppm]	200 ppm (restrictive limit)
France	VLE (OEL C/STEL)	900 mg/m <sup>3</sup> (restrictive limit)
France	VLE (OEL C/STEL) [ppm]	300 ppm (restrictive limit)
Germany	Occupational exposure limit value (mg/m <sup>3</sup> ) (TRGS900)	600 mg/m <sup>3</sup> (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Germany	Occupational exposure limit value (ppm) (TRGS900)	200 ppm (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Germany	BLV	2 mg/l Parameter: 2-Butanone - Medium: urine - Sampling time: end of shift
Gibraltar	OEL TWA	600 mg/m <sup>3</sup>
Gibraltar	OEL TWA [ppm]	200 ppm
Gibraltar	OEL STEL	900 mg/m <sup>3</sup>
Gibraltar	OEL STEL [ppm]	300 ppm
Greece	OEL TWA	600 mg/m <sup>3</sup>
Greece	OEL TWA [ppm]	200 ppm
Greece	OEL STEL	900 mg/m <sup>3</sup>
Greece	OEL STEL [ppm]	300 ppm
Hungary	AK (OEL TWA)	600 mg/m <sup>3</sup>



# SAFETY DATA SHEET

Page : 8 / 21

Revision nr : 3.0

Issue date : 25/05/2021

Supersedes : 18/12/2015

## Disposable pens and cartridges for plotters

butanone; ethyl methyl ketone (78-93-3)		
Hungary	CK (OEL STEL)	900 mg/m <sup>3</sup>
Ireland	OEL TWA [1]	600 mg/m <sup>3</sup>
Ireland	OEL TWA [2]	200 ppm
Ireland	OEL STEL	900 mg/m <sup>3</sup>
Ireland	OEL STEL [ppm]	300 ppm
Italy	OEL TWA	600 mg/m <sup>3</sup>
Italy	OEL TWA [ppm]	200 ppm
Italy	OEL STEL	900 mg/m <sup>3</sup>
Italy	OEL STEL [ppm]	300 ppm
Latvia	OEL TWA	200 mg/m <sup>3</sup>
Latvia	OEL TWA [ppm]	67 ppm
Luxembourg	OEL TWA	600 mg/m <sup>3</sup>
Luxembourg	OEL TWA [ppm]	200 ppm
Luxembourg	OEL STEL	900 mg/m <sup>3</sup>
Luxembourg	OEL STEL [ppm]	300 ppm
Malta	OEL TWA	600 mg/m <sup>3</sup>
Malta	OEL TWA [ppm]	200 ppm
Malta	OEL STEL	900 mg/m <sup>3</sup>
Malta	OEL STEL [ppm]	300 ppm
Netherlands	MAC-TGG (OEL TWA)	590 mg/m <sup>3</sup>
Netherlands	MAC-15 (OEL STEL)	900 mg/m <sup>3</sup>
Poland	NDS (OEL TWA)	450 mg/m <sup>3</sup>
Poland	NDSch (OEL STEL)	900 mg/m <sup>3</sup>
Portugal	OEL TWA	600 mg/m <sup>3</sup> (indicative limit value)
Portugal	OEL TWA [ppm]	200 ppm (indicative limit value)
Portugal	OEL STEL	900 mg/m <sup>3</sup> (indicative limit value)
Portugal	OEL STEL [ppm]	300 ppm (indicative limit value)
Romania	OEL TWA	600 mg/m <sup>3</sup>
Romania	OEL TWA [ppm]	200 ppm
Romania	OEL STEL	900 mg/m <sup>3</sup>
Romania	OEL STEL [ppm]	300 ppm
Slovakia	NPHV (OEL TWA) [1]	600 mg/m <sup>3</sup>
Slovakia	NPHV (OEL TWA) [2]	200 ppm
Slovakia	NPHV (OEL C)	900 mg/m <sup>3</sup>
Slovenia	OEL TWA	600 mg/m <sup>3</sup>
Slovenia	OEL TWA [ppm]	200 ppm
Slovenia	OEL STEL	900 mg/m <sup>3</sup>
Slovenia	OEL STEL [ppm]	300 ppm
Spain	VLA-ED (OEL TWA) [1]	600 mg/m <sup>3</sup> (indicative limit value)
Spain	VLA-ED (OEL TWA) [2]	200 ppm (indicative limit value)



# SAFETY DATA SHEET

Page : 9 / 21

Revision nr : 3.0

Issue date : 25/05/2021

Supersedes : 18/12/2015

## Disposable pens and cartridges for plotters

<b>butanone; ethyl methyl ketone (78-93-3)</b>		
Spain	VLA-EC (OEL STEL)	900 mg/m <sup>3</sup>
Spain	VLA-EC (OEL STEL) [ppm]	300 ppm
Sweden	NGV (OEL TWA)	150 mg/m <sup>3</sup>
Sweden	NGV (OEL TWA) [ppm]	50 ppm
Sweden	KTV (OEL STEL)	900 mg/m <sup>3</sup>
Sweden	KTV (OEL STEL) [ppm]	300 ppm
United Kingdom	WEL TWA (OEL TWA) [1]	600 mg/m <sup>3</sup>
United Kingdom	WEL TWA (OEL TWA) [2]	200 ppm
United Kingdom	WEL STEL (OEL STEL)	899 mg/m <sup>3</sup>
United Kingdom	WEL STEL (OEL STEL) [ppm]	300 ppm
Norway	Grenseverdi (OEL TWA) [1]	220 mg/m <sup>3</sup>
Norway	Grenseverdi (OEL TWA) [2]	75 ppm
Norway	Korttidsverdi (OEL STEL)	275 mg/m <sup>3</sup> (value calculated)
Norway	Korttidsverdi (OEL STEL) [ppm]	112,5 ppm (value calculated)
Switzerland	MAK (OEL TWA) [1]	590 mg/m <sup>3</sup>
Switzerland	MAK (OEL TWA) [2]	200 ppm
Switzerland	KZGW (OEL STEL)	590 mg/m <sup>3</sup>
Switzerland	KZGW (OEL STEL) [ppm]	200 ppm
Australia	OES TWA [1]	445 mg/m <sup>3</sup>
Australia	OES TWA [2]	150 ppm
Australia	OES STEL	890 mg/m <sup>3</sup>
Australia	OES STEL [ppm]	300 ppm
Canada (Quebec)	VECD (OEL STEL)	300 mg/m <sup>3</sup>
Canada (Quebec)	VECD (OEL STEL) [ppm]	100 ppm
Canada (Quebec)	VEMP (OEL TWA)	150 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (OEL TWA) [ppm]	50 ppm
USA - ACGIH	ACGIH OEL TWA [ppm]	200 ppm
USA - ACGIH	ACGIH OEL STEL [ppm]	300 ppm
USA - IDLH	IDLH [ppm]	3000 ppm
USA - NIOSH	NIOSH REL TWA	590 mg/m <sup>3</sup>
USA - NIOSH	NIOSH REL TWA [ppm]	200 ppm
USA - NIOSH	NIOSH REL STEL	885 mg/m <sup>3</sup>
USA - NIOSH	NIOSH REL STEL [ppm]	300 ppm
USA - OSHA	OSHA PEL TWA [1]	590 mg/m <sup>3</sup>
USA - OSHA	OSHA PEL TWA [2]	200 ppm

<b>butanone; ethyl methyl ketone (78-93-3)</b>	
DNEL/DMEL (workers)	
Long-term - systemic effects, dermal	1161 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	600 mg/m <sup>3</sup>
DNEL/DMEL (general population)	

	<b>SAFETY DATA SHEET</b>	Page : 10 / 21
	<b>Disposable pens and cartridges for plotters</b>	Revision nr : 3.0
		Issue date : 25/05/2021
		Supersedes : 18/12/2015


<b>butanone; ethyl methyl ketone (78-93-3)</b>	
Long-term - systemic effects,oral	31 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	106 mg/m <sup>3</sup>
Long-term - systemic effects, dermal	142 mg/kg bodyweight/day
PNEC (water)	
PNEC aqua (marine water)	55,8 mg/l
PNEC aqua (intermittent, freshwater)	55,8 mg/l
PNEC aqua (intermittent, marine water)	55,8 mg/l
PNEC (sediment)	
PNEC sediment (freshwater)	284,74 mg/kg dwt
PNEC sediment (marine water)	284,7 mg/kg dwt
PNEC (soil)	
PNEC soil	22,5 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	709 mg/l

Additional information : Concentration measurement in air. Personal air monitoring

### **8.2. Exposure controls**

Engineering measure(s) : Provide adequate ventilation. Use only in area provided with appropriate exhaust ventilation. Take precautionary measures against static discharge. Use explosion-proof machinery, apparatus, ventilation facilities, tools etc. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Organisational measures to prevent /limit releases, dispersion and exposure. See also section 7 : Handling and storage .

Personal protective equipment : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.


	<b>SAFETY DATA SHEET</b>	Page : 11 / 21
		Revision nr : 3.0
	<b>Disposable pens and cartridges for plotters</b>	Issue date : 25/05/2021
		Supersedes : 18/12/2015

Hand protection	: Wear chemically resistant gloves (tested to EN374) . Impervious butyl rubber gloves . Thickness of the glove material: >0,5mm. Penetration time: >240'. Recommended preventive skin protection. Use protective skin cream before handling the product. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The selection of specific gloves for a specific application and time of use in a working area, should also take into account other factors on the working space, such as (but not limited to): other chemicals that are possibly used, physical requirements (protection against cutting/drilling, skill, thermal protection), and the instructions/specification of the supplier of gloves.
Eye protection	: Use suitable eye protection (EN166): tightly fitting safety goggles. Safety glasses with side shields
Body protection	: Wear suitable protective clothing. Long sleeved clothing. Safety shoes (EN ISO 20345)
Respiratory protection	: In case of insufficient ventilation, wear suitable respiratory equipment. full face mask (DIN EN 136) . Half-face mask (DIN EN 140) . Filter type: A (EN141). Wear breathing apparatus if exposed to vapours/dusts/aerosols. (DIN EN 133)
Thermal hazard protection	: Not required for normal conditions of use. Use dedicated equipment.
Environmental exposure controls	: Do not allow to enter into surface water or drains. Comply with applicable Community environmental protection legislation.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Colour	: Black.
Odour	: Characteristic.
Odour threshold	: Not determined
pH	: ≈ 5,2
Relative evaporation rate (butylacetate=1)	: Not determined
Melting / freezing point	: Not determined
Freezing point	: No data available
Initial boiling point and boiling range	: ≈ 77 °C
Flash point	: 16 °C
Auto-ignition temperature	: Not determined
Decomposition temperature	: > 200 °C
Flammability (solid, gas)	: Not applicable,liquid
Vapour pressure	: < 1100 hPa (50°C)
Vapour density	: Not determined
Relative density	: No data available
Density	: 0,872 g/cm <sup>3</sup> (20°C)
Solubility	: Not determined. Water: Partially soluble
Partition coefficient n-octanol/water	: Not determined
Kinematic viscosity	: 12 s (DIN 53211 (4mm))

	<b>SAFETY DATA SHEET</b>	Page : 12 / 21
	<b>Disposable pens and cartridges for plotters</b>	Revision nr : 3.0
		Issue date : 25/05/2021
		Supersedes : 18/12/2015

Dynamic viscosity	: No data available
Explosive properties	: Not applicable. The study does not need to be conducted because there are no chemical groups associated with explosive properties present in the molecule.
Oxidising properties	: Not applicable. The classification procedure needs not to be applied because there are no chemical groups present in the molecule which are associated with oxidising properties.
Explosive limits	: Not determined
Particle size	: Not applicable
Particle size distribution	: Not applicable
Particle shape	: Not applicable
Particle aspect ratio	: Not applicable
Particle aggregation state	: Not applicable
Particle agglomeration state	: Not applicable
Particle specific surface area	: Not applicable
Particle dustiness	: Not applicable

## **9.2. Other information**

### **9.2.1. Information with regard to physical hazard classes**

No additional information available

### **9.2.2. Other safety characteristics**

Relative evaporation rate (butylacetate=1)	: Not determined
Miscibility	: Not determined
Specific conductivity	: Not determined
VOC content	: > 70 %
Other properties	: Surface tension :Not determined
Additional information	: Solvent content (%) :. Not determined

## **SECTION 10: Stability and reactivity**

### **10.1. Reactivity**

Highly flammable liquid and vapour. Reference to other sections: 10.4 & 10.5.

### **10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

### **10.3. Possibility of hazardous reactions**

No dangerous reactions known under normal conditions of use.

### **10.4. Conditions to avoid**

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep out of direct sunlight. See Section 7 for information on safe handling.

### **10.5. Incompatible materials**

Strong oxidizing agents. Strong acids. Strong bases. See Section 7 for information on safe handling.

### **10.6. Hazardous decomposition products**

Carbon oxides . Reference to other sections 5.2.

	<b>SAFETY DATA SHEET</b>	Page : 13 / 21
	<b>Disposable pens and cartridges for plotters</b>	Revision nr : 3.0
		Issue date : 25/05/2021
		Supersedes : 18/12/2015

## SECTION 11: Toxicological information

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

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

<b>2,6-dimethylheptan-4-one (108-83-8)</b>	
LD50/oral/rat	5750 mg/kg
LD50/dermal/rat	> 2000 mg/kg
LC50/inhalation/4h/rat (ppm)	> 2300 ppm/4h

<b>butanone; ethyl methyl ketone (78-93-3)</b>	
LD50/oral/rat	> 2000 mg/kg
LD50/dermal/rabbit	> 2000 mg/kg
LC50/inhalation/4h/rat	32 mg/l
LC50/inhalation/4h/rat (ppm)	11700 ppm/4h

<b>Mixture of : tert-alkyl(C12-C14)ammonium bis[1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphtalenolato(2-)]-chromate(1-) ; etc (117527-94-3)</b>	
LD50/dermal/rat	> 2000 mg/kg

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)  
pH: ≈ 5,2

Serious eye damage/irritation : Causes serious eye irritation.  
pH: ≈ 5,2

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)

Reproductive toxicity : May damage fertility or the unborn child.

STOT-single exposure : May cause drowsiness or dizziness. May cause respiratory irritation.

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

<b>butanone; ethyl methyl ketone (78-93-3)</b>	
NOAEC (inhalation, rat, gas, 90 days)	2500 ppmv/6h/day 90d, 6h/d, 5d/wk

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

<b>Disposable pens and cartridges for plotters</b>	
Kinematic viscosity	12 mm <sup>2</sup> /s (DIN 53211 (4mm))

Other information : Symptoms related to the physical, chemical and toxicological characteristics :  
Reference to other sections 4.2.


### 11.2. Information on other hazards

#### 11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

#### 11.2.2 Other information

Other information : Symptoms related to the physical, chemical and toxicological characteristics :  
Reference to other sections 4.2

	<b>SAFETY DATA SHEET</b>	Page : 14 / 21
		Revision nr : 3.0
	<b>Disposable pens and cartridges for plotters</b>	Issue date : 25/05/2021
		Supersedes : 18/12/2015

## SECTION 12: Ecological information

### 12.1. Toxicity

Environmental properties : Harmful to aquatic life with long lasting effects.

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

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

#### 2,6-dimethylheptan-4-one (108-83-8)

LC50 - Fish [1]	140 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [semi-static])
EC50 96h - Algae [1]	100 mg/l (Species: Pseudokirchneriella subcapitata)

#### butanone; ethyl methyl ketone (78-93-3)

LC50 - Fish [1]	> 2000 mg/l Pimephales promelas (fathead minnow)
EC50 - Crustacea [1]	> 300 mg/l Daphnia magna (Big water flea)
EC50 - Crustacea [2]	5091 mg/l (Exposure time: 48 h - Species: Daphnia magna)

#### Mixture of : tert-alkyl(C12-C14)ammonium bis[1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphtalenolato(2-)]-chromate(1-) ; etc (117527-94-3)

LC50 - Fish [1]	> 100 mg/l (Exposure time: 96 h - Species: Danio rerio [static])
LC50 - Fish [2]	1 – 10 mg/l (Cyprinus carpio)
EC50 - Crustacea [1]	> 1000 mg/l (Daphnia Magna) (OECD 202) (24h)
EC50 72h - Algae [1]	> 100 mg/l (Scenedesmus quadricauda)

### 12.2. Persistence and degradability

#### Disposable pens and cartridges for plotters

Persistence and degradability : No additional information available.

#### butanone; ethyl methyl ketone (78-93-3)

Persistence and degradability : Readily biodegradable.

### 12.3. Bioaccumulative potential

#### Disposable pens and cartridges for plotters

Partition coefficient n-octanol/water	Not determined
Bioaccumulative potential	No additional information available.

#### butanone; ethyl methyl ketone (78-93-3)

Partition coefficient n-octanol/water : 0,3

	<b>SAFETY DATA SHEET</b>	Page : 15 / 21
	<b>Disposable pens and cartridges for plotters</b>	Revision nr : 3.0
		Issue date : 25/05/2021
		Supersedes : 18/12/2015

#### **12.4. Mobility in soil**

<b>Disposable pens and cartridges for plotters</b>	
Mobility in soil	No data available
Ecology - soil	This information is not available.

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

<b>Disposable pens and cartridges for plotters</b>	
Results of PBT assessment	Not applicable

#### **12.6. Endocrine disrupting properties**

Adverse effects on the environment caused by endocrine disrupting properties : Not applicable

#### **12.7. Other adverse effects**

Additional information : No information available

### **SECTION 13: Disposal considerations**

#### **13.1. Waste treatment methods**


Product/Packaging disposal recommendations : Avoid release to the environment. Dispose of empty containers and wastes safely. See Section 7 for information on safe handling. Refer to manufacturer/supplier for information on recovery/recycling. Recycling is preferred to disposal or incineration. If recycling is not possible, eliminate in accordance with local valid waste disposal regulations. Handle contaminated packages in the same way as the substance itself. Dispose of contaminated materials in accordance with current regulations.






European waste catalogue (2001/573/EC, 75/442/EEC, 91/689/EEC) : This material and its container must be disposed of as hazardous waste  
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities  
The following Waste Codes are only suggestions:  
Waste codes / waste designations according to EWC :  
08 01 11\*  
(080111 - waste paint and varnish containing organic solvents or other dangerous substances),  
15 01 10\* - packaging containing residues of or contaminated by dangerous substances .

### **SECTION 14: Transport information**

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

<b>ADR</b>	<b>IMDG</b>	<b>IATA</b>	<b>ADN</b>	<b>RID</b>
<b>14.1. UN number</b>				
1263	1263	1263	1263	1263
<b>14.2. UN proper shipping name</b>				
PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	Paint	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL
<b>Transport document description</b>				
UN 1263 PAINT RELATED MATERIAL, 3, II, (D/E)	UN 1263 PAINT RELATED MATERIAL, 3, II	UN 1263 Paint, 3, II	UN 1263 PAINT RELATED MATERIAL, 3, II	UN 1263 PAINT RELATED MATERIAL, 3, II

	<b>SAFETY DATA SHEET</b>	Page : 16 / 21
		Revision nr : 3.0
	<b>Disposable pens and cartridges for plotters</b>	Issue date : 25/05/2021
		Supersedes : 18/12/2015

ADR	IMDG	IATA	ADN	RID
<b>14.3. Transport hazard class(es)</b>				
3	3	3	3	3
				
<b>14.4. Packing group</b>				
II	II	II	II	II
<b>14.5. Environmental hazards</b>				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available				

**14.6. Special precautions for user**

Special precautions for user : No data available

**- Overland transport**

Classification code (ADR) : F1  
Special provisions : 163, 640D, 650, 367  
Limited quantities (ADR) : 5I  
Excepted quantities (ADR) : E2  
Packing instructions (ADR) : P001, IBC02, R001  
Special packing provisions (ADR) : PP1  
Mixed packing provisions (ADR) : MP19  
Portable tank and bulk container instructions (ADR) : T4  
Portable tank and bulk container special provisions (ADR) : TP1, TP8, TP28  
Tank code (ADR) : LGBF  
Vehicle for tank carriage : FL  
Transport category (ADR) : 2  
Special provisions for carriage - Operation (ADR) : S2, S20  
Hazard identification number (Kemler No.) : 33  
Orange plates : 


<b>33</b>
<b>1263</b>

  
Tunnel restriction code : D/E  
EAC code : •3YE

**- Transport by sea**

Special provisions (IMDG) : 163  
Limited quantities (IMDG) : 5 L  
Excepted quantities (IMDG) : E2



	<b>SAFETY DATA SHEET</b>	Page : 17 / 21
	<b>Disposable pens and cartridges for plotters</b>	Revision nr : 3.0
		Issue date : 25/05/2021
		Supersedes : 18/12/2015

Packing instructions (IMDG) : P001  
 Special packing provisions (IMDG) : PP1  
 IBC packing instructions (IMDG) : IBC02  
 Tank instructions (IMDG) : T4  
 Tank special provisions (IMDG) : TP1, TP8, TP28  
 EmS-No. (Fire) : F-E  
 EmS-No. (Spillage) : S-E  
 Stowage category (IMDG) : B  
 Properties and observations (IMDG) : Miscibility with water depends upon the composition.

**- Air transport**


PCA Excepted quantities (IATA) : E2  
 PCA Limited quantities (IATA) : Y341  
 PCA limited quantity max net quantity (IATA) : 1L  
 PCA packing instructions (IATA) : 353  
 PCA max net quantity (IATA) : 5L  
 CAO packing instructions (IATA) : 364  
 CAO max net quantity (IATA) : 60L  
 Special provisions (IATA) : A3, A72, A192  
 ERG code (IATA) : 3L

**- Inland waterway transport**

Classification code (ADN) : F1  
 Special provisions (ADN) : 163, 64D, 65  
 Limited quantities (ADN) : 5 L  
 Excepted quantities (ADN) : E2  
 Equipment required (ADN) : PP, EX, A  
 Ventilation (ADN) : VE01  
 Number of blue cones/lights (ADN) : 1

**- Rail transport**

Classification code (RID) : F1  
 Special provisions (RID) : 163, 640D, 650  
 Limited quantities (RID) : 5L  
 Excepted quantities (RID) : E2  
 Packing instructions (RID) : P001, IBC02, R001  
 Special packing provisions (RID) : PP1  
 Mixed packing provisions (RID) : MP19  
 Portable tank and bulk container instructions (RID) : T4  
 Portable tank and bulk container special provisions (RID) : TP1, TP8, TP28  
 Tank codes for RID tanks (RID) : LGBF  
 Transport category (RID) : 2  
 Colis express (express parcels) (RID) : CE7  
 Hazard identification number (RID) : 33

	<b>SAFETY DATA SHEET</b>	Page : 18 / 21
		Revision nr : 3.0
	<b>Disposable pens and cartridges for plotters</b>	Issue date : 25/05/2021
		Supersedes : 18/12/2015

#### 14.7. Maritime transport in bulk according to IMO instruments

Code: IBC : Not applicable.

### SECTION 15: Regulatory information

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

##### 15.1.1. EU-Regulations

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

3(a) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F	Disposable pens and cartridges for plotters ; 2,6-dimethylheptan-4-one ; butanone; ethyl methyl ketone
3(b) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10	Disposable pens and cartridges for plotters ; 2,6-dimethylheptan-4-one ; butanone; ethyl methyl ketone ; Mixture of : tert-alkyl(C12-C14)ammonium bis[1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphtalenolato(2-)]-chromate(1-) ; etc
3(c) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1	Disposable pens and cartridges for plotters ; Mixture of : tert-alkyl(C12-C14)ammonium bis[1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphtalenolato(2-)]-chromate(1-) ; etc
40. Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.	2,6-dimethylheptan-4-one ; butanone; ethyl methyl ketone

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances


VOC content : > 70 %

##### 15.1.2. National regulations

###### France

No ICPE	Installations classées Désignation de la rubrique	Code Régime	Rayon
4331.text	Liquides inflammables de catégorie 2 ou catégorie 3 à l'exclusion de la rubrique 4330. La quantité totale susceptible d'être présente dans les installations y compris dans les cavités souterraines étant :		
4331.1	1. Supérieure ou égale à 1000 t Quantité seuil bas au sens de l'article R. 511-10 : 5 000 t. Quantité seuil haut au sens de l'article R. 511-10 : 50 000 t.	A	2
4331.2	2. Supérieure ou égale à 100 t mais inférieure à 1000 t Quantité seuil bas au sens de l'article R. 511-10 : 5 000 t. Quantité seuil haut au sens de l'article R. 511-10 : 50 000 t.	E	
4331.3	3. Supérieure ou égale à 50 t mais inférieure à 100 t Quantité seuil bas au sens de l'article R. 511-10 : 5 000 t. Quantité seuil haut au sens de l'article R. 511-10 : 50 000 t.	DC	

###### Germany

	<b>SAFETY DATA SHEET</b>	Page : 19 / 21
		Revision nr : 3.0
	<b>Disposable pens and cartridges for plotters</b>	Issue date : 25/05/2021
		Supersedes : 18/12/2015

Regulatory reference : WGK 2, Significantly hazardous to water (Classification according to AwSV, Annex 1)

German storage class (LGK) : LGK 3 - Flammable liquids

Hazardous Incident Ordinance (12. BImSchV) : Listed in the 12. BImSchV (Annex I) under: 1.2.5.3  
Quantity threshold for operational area under § 1 para. 1

- Sentence 1: 5000000 kg
- Sentence 2: 50000000 kg

#### Netherlands

Waterbezwaarlijkheid : A (3) - hazardous for aquatic organisms, may have longterm hazardous effects in aquatic environment

SZW-lijst van kankerverwekkende stoffen : None of the components are listed

SZW-lijst van mutagene stoffen : None of the components are listed

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

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

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

#### Denmark

Recommendations Danish Regulation : Pregnant/breastfeeding women working with the product must not be in direct contact with the product

#### 15.2. Chemical safety assessment


Not applicable

<b>For the following substances of this mixture a chemical safety assessment has been carried out</b>
2,6-dimethylheptan-4-one

#### SECTION 16: Other information

Indication of changes:

1.2	Main use category	Added	
2.2	Hazard statements (CLP)	Modified	
2.2	Precautionary statements (CLP)	Modified	
4.2	Chronic symptoms	Added	
4.3	Indication of any immediate medical attention and special treatment needed	Modified	
5.2	Hazardous decomposition products in case of fire	Added	
7.1	Hygiene measures	Modified	
7.2	Heat and ignition	Added	

	<b>SAFETY DATA SHEET</b>	Page : 20 / 21
	<b>Disposable pens and cartridges for plotters</b>	Revision nr : 3.0
		Issue date : 25/05/2021
		Supersedes : 18/12/2015


	sources		
7.2	Special rules on packaging	Added	
7.2	Incompatible materials	Added	
7.3	Specific end use(s)	Added	
9.1	Appearance	Added	
9.1	Colour	Modified	
9.1	pH	Added	
9.1	Flash point	Modified	
9.1	Density	Modified	
9.1	Decomposition temperature	Modified	
11.2	Adverse health effects caused by endocrine disrupting properties	Added	
12.1	Environmental properties	Modified	
12.6	Adverse effects on the environment caused by endocrine disrupting properties	Added	
15.1	Installations classées	Added	
15.1	German storage class (LGK)	Added	
15.1	Hazardous Incident Ordinance (12. BImSchV)	Added	
15.1	Water hazard class (WGK)	Modified	
15.1	Waterbezwaarlijkheid	Added	

Abbreviations and acronyms:

ADN = Accord Européen relatif au Transport International des Marchandises Dangereuses par voie de Navigation du Rhin
ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
CLP = Classification, Labelling and Packaging Regulation according to 1272/2008/EC
IATA = International Air Transport Association
IMDG = International Maritime Dangerous Goods Code
LEL = Lower Explosive Limit/Lower Explosion Limit
UEL = Upper Explosion Limit/Upper Explosive Limit
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
CSR = Chemical Safety Report
EC50 = Median Effective Concentration
LD50 = Median lethal dose
LC50 = Median lethal concentration
TLV = Threshold limits
TWA = time weighted average
STEL = Short term exposure limit
NA = Not applicable
PBT = persistent, bioaccumulating and toxic (PBT).
vPvB = very persistent and very bioaccumulating
WGK = Wassergefährdungsklasse (Water Hazard Class under German Federal Water Management Act)

Sources of key data used to compile the : Name (SDS) Ink P2.0. Manufacturer/Supplier Ek-Team Elektronik- u. Kunststoff-Technik GmbH. Revision date 14.01.2021. ECHA (European Chemicals Agency).

Training advice : Training staff on good practice. Manipulations are to be done only by qualified and authorised persons.

	<b>SAFETY DATA SHEET</b>	Page : 21 / 21
	<b>Disposable pens and cartridges for plotters</b>	Revision nr : 3.0
		Issue date : 25/05/2021
		Supersedes : 18/12/2015

Other information : Assessment/classification CLP. Article 9. Calculation method.

Full text of H- and EUH-statements:

Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
Repr. 1B	Reproductive toxicity, Category 1B
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
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H360	May damage fertility or the unborn child.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
	Restricted to professional users

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
Classification according to Regulation (EC) No. 1272/2008 [CLP]  
Labelling according to Regulation (EC) No. 1272/2008 [CLP]

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