KORTHO INK K7 RED

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Issue date: 10/10/2024 Version: 1.0

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

1.1. Product identifier

Product form	:	Mixture
Trade name	:	KORTHO INK K7 RED
UFI	:	7EC0-W074-R00C-NUFT (EIGEN UFI)
Product code	:	053715/083029
Product group	:	Trade product
Other means of identification	:	053715 - Kortho Ink K7 Red, 1 L 083029 - Kortho Ink K7 Red, 5 L

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

Relevant identified uses

Main use category	:	Professional use
Use of the substance/mixture	:	Ink

Title	Life cycle stage	Use descriptors
KORTHO INK K7 RED, 1 L, 5 L	Professional	SU0, PC18, PROC0

Full text of use descriptors: see section 16

1.3. Details of the supplier of the safety data sheet

Distributor
Korthofah B.V.
Lageweg 39
2222 AG Katwijk ZH
The Netherlands
T +31 714 060 480
export@kortho.nl, https://www.kortho.com

1.4. Emergency telephone number

Country/Area	Organisation/Company	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH Birmingham	0344 892 0111	Only for healthcare professionals

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Flammable liquids, Category 2	H225
Serious eye damage/eye irritation, Category 1	H318
Reproductive toxicity, Category 2	H361
Specific target organ toxicity – Single exposure, Category 3, Narcosis	H336
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation	H335

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

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

Hazard pictograms (CLP) :

GHS02 GHS05 GHS07 GHS08

Signal word (CLP) : Danger

Contains : ethyl acetate; n-butyl acetate; 4-hydroxy-4-methylpentan-2-one; 1-Ethoxypropan-2-ol; propan-1-ol

Hazard statements (CLP) : H225 - Highly flammable liquid and vapour.
H318 - Causes serious eye damage.
H335 - May cause respiratory irritation.
H336 - May cause drowsiness or dizziness.
H361 - Suspected of damaging fertility or the unborn child.

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.
P235 - Keep cool.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338+P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
P403+P235 - Store in a well-ventilated place. Keep cool.

EUH-statements : EUH066 - Repeated exposure may cause skin dryness or cracking.
EUH071 - Corrosive to the respiratory tract.
EUH208 - Contains maleic anhydride. May produce an allergic reaction.

2.3. Other hazards

Other hazards which do not result in classification : Contains: Nitrocellulose, In use may form flammable/explosive vapour-air mixture.

Contains no PBT and/or vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

Component	
Substance(s) not meeting the PBT criteria of REACH regulation, in accordance with Annex XIII	propan-1-ol (71-23-8)
Substance(s) not meeting the vPvB criteria of REACH regulation, in accordance with Annex XIII	propan-1-ol (71-23-8)

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 substance(s) are 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 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Product name	Product identifier	% w/w (% w/w)	Classification according to Regulation (EC) No. 1272/2008 [CLP]
4-hydroxy-4-methylpentan-2-one substance with national workplace exposure limit(s) (GB)	CAS-No.: 123-42-2 EC-No.: 204-626-7 EC Index-No.: 603-016-00-1 REACH-no: 01-2119473975-21	50 – 75	Flam. Liq. 3, H226 Eye Irrit. 2, H319 Repr. 2, H361 STOT SE 3, H335

Product name	Product identifier	% w/w (% w/w)	Classification according to Regulation (EC) No. 1272/2008 [CLP]
ethanol; ethyl alcohol substance with national workplace exposure limit(s) (GB)	CAS-No.: 64-17-5 EC-No.: 200-578-6 EC Index-No.: 603-002-00-5 REACH-no: 01-2119457610-43	10 – 20	Flam. Liq. 2, H225 Eye Irrit. 2, H319
propan-1-ol substance with national workplace exposure limit(s) (GB)	CAS-No.: 71-23-8 EC-No.: 200-746-9 EC Index-No.: 603-003-00-0 REACH-no: 01-2119486761-29	5 – 10	Flam. Liq. 2, H225 Eye Dam. 1, H318 STOT SE 3, H336
ethyl acetate substance with national workplace exposure limit(s) (GB); substance with a Community workplace exposure limit	CAS-No.: 141-78-6 EC-No.: 205-500-4 EC Index-No.: 607-022-00-5 REACH-no: 01-2119475103-46	5 – 10	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336
1-Ethoxypropan-2-ol	CAS-No.: 1569-02-4 EC-No.: 216-374-5 EC Index-No.: 603-177-00-8 REACH-no: 01-2119462792-32	1 – 5	Flam. Liq. 3, H226 Eye Irrit. 2, H319 STOT SE 3, H336
n-butyl acetate substance with national workplace exposure limit(s) (GB); substance with a Community workplace exposure limit	CAS-No.: 123-86-4 EC-No.: 204-658-1 EC Index-No.: 607-025-00-1 REACH-no: 01-2119485493-29	1 – 5	Flam. Liq. 3, H226 STOT SE 3, H336
Di-"isononyl" phthalate substance with national workplace exposure limit(s) (GB)	CAS-No.: 28553-12-0 EC-No.: 249-079-5 REACH-no: 01-2119430798-28	1 – 5	Not classified
maleic anhydride substance with national workplace exposure limit(s) (GB)	CAS-No.: 108-31-6 EC-No.: 203-571-6 EC Index-No.: 607-096-00-9 REACH-no: 01-2119472428-31	0.00015 – 0.001	Acute Tox. 4 (Oral), H302 STOT RE 1, H372 Skin Corr. 1B, H314 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1A, H317

Specific concentration limits:

Product name	Product identifier	Specific concentration limits (% w/w (% w/w))
4-hydroxy-4-methylpentan-2-one	CAS-No.: 123-42-2 EC-No.: 204-626-7 EC Index-No.: 603-016-00-1 REACH-no: 01-2119473975-21	(10 ≤ C ≤ 100) Eye Irrit. 2; H319
maleic anhydride	CAS-No.: 108-31-6 EC-No.: 203-571-6 EC Index-No.: 607-096-00-9 REACH-no: 01-2119472428-31	(0.001 ≤ C ≤ 100) Skin Sens. 1A; H317

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

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

First-aid measures after skin contact : Rinse skin with water/shower. Take off immediately all contaminated clothing. Repeated exposure may cause skin dryness or cracking.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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

Symptoms/effects after inhalation : May cause respiratory irritation.

Symptoms/effects after eye contact : Causes serious eye damage.

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

When in doubt or if symptoms are observed, get medical advice.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Alcohol resistant foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Highly flammable liquid and vapour. The vapours are denser than air and may travel along the ground. Distance ignition possible.

Explosion hazard : May form flammable/explosive vapour-air mixture.

Hazardous decomposition products in case of fire : Carbon dioxide. Carbon monoxide. Nitrogen oxides (NOx).

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Self-contained breathing apparatus when in close proximity to fire.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.

For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

For emergency responders

Protective equipment : Use self-contained breathing apparatus and chemically protective clothing.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Section 8. Exposure controls and personal protection. Concerning disposal elimination after cleaning, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapours are flammable.
Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. No open flames. No smoking. Use only non-sparking tools. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing vapours.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment.
Storage conditions : Keep only in the original container in a cool well ventilated place. Keep in fireproof place. Keep container tightly closed.
Incompatible products : Strong bases. Strong acids. Oxidizing agent.
Incompatible materials : Sources of ignition. Direct sunlight. Heat sources.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

National occupational exposure and biological limit values

ethanol; ethyl alcohol (64-17-5)	
United Kingdom - Occupational Exposure Limits	
Local name	Ethanol
WEL TWA (OEL TWA)	1920 mg/m³
	1000 ppm
WEL STEL (OEL STEL)	5760 mg/m³ (calculated)
	3000 ppm (calculated)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

ethyl acetate (141-78-6)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Ethyl acetate
IOEL TWA	734 mg/m³
	200 ppm
IOEL STEL	1468 mg/m³
	400 ppm

ethyl acetate (141-78-6)	
Regulatory reference	COMMISSION DIRECTIVE (EU) 2017/164
United Kingdom - Occupational Exposure Limits	
Local name	Ethyl acetate
WEL TWA (OEL TWA)	734 mg/m³
	200 ppm
WEL STEL (OEL STEL)	1468 mg/m³
	400 ppm
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

Di-"isononyl" phthalate (28553-12-0)	
United Kingdom - Occupational Exposure Limits	
Local name	Diisononyl phthalate
WEL TWA (OEL TWA)	5 mg/m³
WEL STEL (OEL STEL)	15 mg/m³ (calculated)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

n-butyl acetate (123-86-4)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	n-Butyl acetate
IOEL TWA	241 mg/m³ 241 mg/m³
	50 ppm
IOEL STEL	723 mg/m³ 723 mg/m³
	150 ppm 150 ppm
Regulatory reference	COMMISSION DIRECTIVE (EU) 2019/1831 COMMISSION DIRECTIVE (EU) 2019/1831
United Kingdom - Occupational Exposure Limits	
Local name	Butyl acetate
WEL TWA (OEL TWA)	724 mg/m³
	150 ppm
WEL STEL (OEL STEL)	966 mg/m³
	200 ppm
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

4-hydroxy-4-methylpentan-2-one (123-42-2)	
United Kingdom - Occupational Exposure Limits	
Local name	4-Hydroxy-4-methylpentan-2-one
WEL TWA (OEL TWA)	241 mg/m³
	50 ppm
WEL STEL (OEL STEL)	362 mg/m³
	75 ppm

4-hydroxy-4-methylpentan-2-one (123-42-2)	
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

maleic anhydride (108-31-6)	
United Kingdom - Occupational Exposure Limits	
Local name	Maleic anhydride
WEL TWA (OEL TWA)	1 mg/m³
WEL STEL (OEL STEL)	3 mg/m³
Remark	Sen (Capable of causing occupational asthma)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

propan-1-ol (71-23-8)	
United Kingdom - Occupational Exposure Limits	
Local name	Propan-1-ol
WEL TWA (OEL TWA)	500 mg/m³
	200 ppm
WEL STEL (OEL STEL)	625 mg/m³
	250 ppm
Remark	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

8.2. Exposure controls

Personal protection equipment

Personal protective equipment:
Avoid all unnecessary exposure. Gloves. Protective clothing. Safety glasses.
Personal protective equipment symbol(s):

Eye and face protection

Eye protection:
Wear eye glasses with side protection according to EN 166.

Eye protection			
Type	**Field of application**	**Characteristics**	**Standard**
Safety glasses	Droplet	With side shields	EN 166

Skin protection

Skin and body protection:
Wear suitable protective clothing

Skin and body protection	
Type	**Standard**
Overall, Lab coat	EN 1149-1

Hand protection:
Wear suitable gloves resistant to chemical penetration. Choosing the proper glove is a decision that depends not only on the type of material, but also on other quality features, which differ for each manufacturer. The protective gloves to be used must comply with the specifications of the regulation 2016/425 and the resultant standard ISO 374-1

Hand protection					
Type	**Material**	**Permeation**	**Thickness (mm)**	**Penetration**	**Standard**
Reusable gloves	Butyl rubber	3 (> 60 minutes)	> 0.4	3 (> 0.65)	EN ISO 374

Respiratory protection

Respiratory protection:
Not necessary with sufficient ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. An approved organic vapour respirator/supplied air or self-contained breathing apparatus must be used when vapour concentration exceeds applicable exposure limits

Respiratory protection			
Device	**Filter type**	**Condition**	**Standard**
Full face mask	Type A - High-boiling (>65 °C) organic compounds	If conc. in air > exposure limit	EN 14387

Environmental exposure controls

Other information:
Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	red.
Odour	:	alcoholically.
Odour threshold	:	Not available
Melting point	:	Not available
Freezing point	:	Not available
Boiling point	:	> 64.7 °C
Flammability	:	Not available
Lower explosion limit	:	0.4 vol %
Upper explosion limit	:	13.5 vol %
Flash point	:	≈ 22 °C
Auto-ignition temperature	:	287 °C
Decomposition temperature	:	Not available
pH	:	Not available
Viscosity, kinematic	:	Not available
Viscosity, dynamic	:	15 – 30 Seconds Din Cup 4
Solubility	:	insoluble in water.
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Vapour pressure	:	169.3 hPa
Vapour pressure at 50°C	:	Not available
Density	:	0.9 g/cm³
Relative density	:	Not available
Relative vapour density at 20°C	:	Not available
Particle characteristics	:	Not applicable

n-butyl acetate (123-86-4)	
Boiling point	126.2 °C Atm. press.: 1013 hPa
Flash point	27 °C Atm. press.: 1013 hPa
Vapour pressure	10.15 – 20.21 hPa

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable in use and storage conditions as recommended in item 7.

10.3. Possibility of hazardous reactions

No dangerous reactions known.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

ethanol; ethyl alcohol (64-17-5)	
LD50 oral rat	1187 – 15010 mg/kg bodyweight Guideline: OECD Guideline 401 (Acute Oral Toxicity), 95% CL: 9720 - 11380
LD50 oral	8300 mg/kg bodyweight Animal: mouse
LD50 dermal rabbit	> 20000 mg/kg (Symptoms: Redness, pain)
LD50 dermal	15800 mg/kg bodyweight
LC50 Inhalation - Rat	124.7 mg/l/4h (Symptoms include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness)
ATE vapours	124.7 mg/l/4h
ATE dust/mist	124.7 mg/l/4h

ethyl acetate (141-78-6)	
LD50 oral rat	11.3 ml/kg
LD50 dermal rat	20000 mg/kg
LD50 dermal rabbit	20000 mg/kg bodyweight Animal: rabbit, Animal sex: male
ATE dermal	20000 mg/kg bodyweight

Di-"isononyl" phthalate (28553-12-0)	
LD50 oral rat	> 10000 mg/kg bodyweight Animal: rat

Di-"isononyl" phthalate (28553-12-0)	
LD50 dermal rabbit	> 3160 mg/kg bodyweight Animal: rabbit, Animal sex: female
LC50 Inhalation - Rat	> 4.4 mg/l air Animal: rat, Guideline: other:

n-butyl acetate (123-86-4)	
LD50 oral rat	10760 mg/kg bodyweight
LD50 dermal rabbit	16 ml/kg
LC50 Inhalation - Rat	740 – 71500 mg/m³
LC50 Inhalation - Rat [ppm]	1087 – 1109 ppm

4-hydroxy-4-methylpentan-2-one (123-42-2)	
LD50 oral rat	3002 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity), 95% CL: 2738 - 3290
LD50 dermal rat	> 1875 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
ATE oral	3002 mg/kg bodyweight

1-Ethoxypropan-2-ol (1569-02-4)	
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: EU Method B.3 (Acute Toxicity (Dermal))
LC50 Inhalation - Rat	> 9.59 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), Guideline: EU Method B.2 (Acute Toxicity (Inhalation))

maleic anhydride (108-31-6)	
LD50 dermal rabbit	2620 mg/kg bodyweight Animal: rabbit, Animal sex: female, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
ATE oral	500 mg/kg bodyweight
ATE dermal	2620 mg/kg bodyweight

propan-1-ol (71-23-8)	
LD50 oral rat	8000 mg/kg bodyweight
LD50 dermal rabbit	4032 mg/kg bodyweight Animal: rabbit, Animal sex: male, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), 95% CL: 2720 - 5968
ATE oral	8000 mg/kg bodyweight
ATE dermal	4032 mg/kg bodyweight

Skin corrosion/irritation : Not classified

n-butyl acetate (123-86-4)	
pH	6.2 Temp.: 20 °C Concentration: 5,3 g/L

Serious eye damage/irritation : Causes serious eye damage.

n-butyl acetate (123-86-4)	
pH	6.2 Temp.: 20 °C Concentration: 5,3 g/L

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

ethanol; ethyl alcohol (64-17-5)	
IARC group	1 - Carcinogenic to humans

Di-"isononyl" phthalate (28553-12-0)	
NOAEL (chronic, oral, animal/male, 2 years)	88.3 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: EPA OTS 798.3300 (Carcinogenicity)
NOAEL (chronic, oral, animal/female, 2 years)	108.6 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: EPA OTS 798.3300 (Carcinogenicity)

Reproductive toxicity : Suspected of damaging fertility or the unborn child.

ethanol; ethyl alcohol (64-17-5)	
NOAEL (animal/male, F0/P)	13800 mg/kg bodyweight

Di-"isononyl" phthalate (28553-12-0)	
NOAEL (animal/female, F1)	200 – 260 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: other:, Guideline: EPA OTS 798.4700 (Reproduction and Fertility Effects)

4-hydroxy-4-methylpentan-2-one (123-42-2)	
NOAEL (animal/male, F0/P)	300 mg/kg bodyweight rabbit
NOAEL (animal/male, F1)	100 mg/kg bodyweight rabbit

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

ethyl acetate (141-78-6)	
LOAEL (oral, rat)	3600 mg/kg bodyweight
NOAEL (oral, rat)	900 mg/kg bodyweight
STOT-single exposure	May cause drowsiness or dizziness.

n-butyl acetate (123-86-4)	
STOT-single exposure	May cause drowsiness or dizziness.

4-hydroxy-4-methylpentan-2-one (123-42-2)	
STOT-single exposure	May cause respiratory irritation.

1-Ethoxypropan-2-ol (1569-02-4)	
STOT-single exposure	May cause drowsiness or dizziness.

propan-1-ol (71-23-8)	
STOT-single exposure	May cause drowsiness or dizziness.

STOT-repeated exposure : Not classified

ethanol; ethyl alcohol (64-17-5)	
LOAEL (oral, rat, 90 days)	3200 mg/kg bodyweight
NOAEL (oral, rat, 28 days)	1730 mg/kg bodyweight/day
NOAEC (inhalation, rat, 28 days)	6.66 mg/l
NOAEL (oral, rat, 90 days)	< 1730 mg/kg bodyweight
NOAEL (subchronic, oral, animal/male, 90 days)	< 9700 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: EPA OPPTS 870.3100 (90-Day Oral Toxicity in Rodents)
NOAEL (subchronic, oral, animal/female, 90 days)	> 9400 mg/kg bodyweight Animal: mouse, Animal sex: female, Guideline: EPA OPPTS 870.3100 (90-Day Oral Toxicity in Rodents)

ethyl acetate (141-78-6)	
LOAEL (oral, rat, 90 days)	3600 mg/kg bodyweight Animal: rat, Guideline: EPA OTS 795.2600 (Subchronic Oral Toxicity Test)

ethyl acetate (141-78-6)	
NOAEL (oral, rat, 90 days)	900 mg/kg bodyweight Animal: rat, Guideline: EPA OTS 795.2600 (Subchronic Oral Toxicity Test)

Di-"isononyl" phthalate (28553-12-0)	
NOAEL (dermal, rat/rabbit, 90 days)	≈ 500 mg/kg bodyweight Animal: rabbit

n-butyl acetate (123-86-4)	
LOAEL (oral, rat, 90 days)	500 mg/kg bodyweight Animal: rat, Guideline: EPA OTS 798.2650 (90-Day Oral Toxicity in Rodents)
NOAEL (oral, rat, 90 days)	125 mg/kg bodyweight Animal: rat, Guideline: EPA OTS 798.2650 (90-Day Oral Toxicity in Rodents)

4-hydroxy-4-methylpentan-2-one (123-42-2)	
LOAEL (oral, rat, 90 days)	1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
NOAEL (oral, rat, 90 days)	250 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
NOAEC (inhalation, rat, vapour, 90 days)	≥ 4.106 mg/l air Animal: mouse, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)

1-Ethoxypropan-2-ol (1569-02-4)	
LOAEL (dermal, rat/rabbit, 90 days)	Animal: rabbit, Animal sex: male, Guideline: OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)
LOAEC (inhalation, rat, vapour, 90 days)	8.36 mg/l air Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)
NOAEL (oral, rat, 90 days)	1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
NOAEL (dermal, rat/rabbit, 90 days)	1800 mg/kg bodyweight Animal: rabbit, Animal sex: male, Guideline: OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)
NOAEC (inhalation, rat, vapour, 90 days)	1.266 mg/l air Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)

maleic anhydride (108-31-6)	
NOAEL (oral, rat, 90 days)	≈ 10 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 452 (Chronic Toxicity Studies)
NOAEC (inhalation, rat, vapour, 90 days)	≈ 0.0033 mg/l air Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)
STOT-repeated exposure	Causes damage to organs (respiratory system) through prolonged or repeated exposure (inhalation).

propan-1-ol (71-23-8)	
NOAEC (inhalation, rat, dust/mist/fume, 90 days)	8 mg/l

Aspiration hazard : Not classified

n-butyl acetate (123-86-4)	
Viscosity, kinematic	0.83 mm²/s Temp.: '20°C' Parameter: 'kinematic viscosity (in mm²/s)'

4-hydroxy-4-methylpentan-2-one (123-42-2)	
Viscosity, kinematic	2976.596 mm²/s

1-Ethoxypropan-2-ol (1569-02-4)	
Viscosity, kinematic	2.456 mm²/s

propan-1-ol (71-23-8)	
Viscosity, kinematic	2.875 mm²/s

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

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

Hazardous to the aquatic environment, long–term (chronic) : Not classified

ethanol; ethyl alcohol (64-17-5)	
LC50 - Fish [1]	14.2 g/l Test organisms (species): Pimephales promelas
LC50 - Fish [2]	13000 mg/l (Oncorhynchus mykiss (Rainbow trout))
EC50 - Crustacea [1]	> 10000 mg/l Test organisms (species): Daphnia magna
EC50 - Other aquatic organisms [1]	5012 mg/l Test organisms (species): Waterflea
EC50 - Other aquatic organisms [2]	275 mg/l
EC50 72h - Algae [1]	275 mg/l Chlorella vulgaris
EC50 72h - Algae [2]	1450 Test organisms (species): Microcystis aeruginosa
EC50 96h - Algae [1]	≈ 22000 mg/l
NOEC (chronic)	9.6 mg/l Test organisms (species): Daphnia magna Duration: '9 d'
NOEC chronic fish	250 mg/l Danio rerio

ethyl acetate (141-78-6)	
LC50 - Fish [1]	230 mg/l
NOEC (acute)	> 9.65 mg/l (32d)
NOEC (chronic)	2.4 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	9.65 mg/l (32 d)
NOEC chronic crustacea	2.4 mg/l (21 d)

Di-"isononyl" phthalate (28553-12-0)	
LC50 - Fish [1]	> 102 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	> 74 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 88 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)

n-butyl acetate (123-86-4)	
LC50 - Fish [1]	18 mg/l Test organisms (species): Pimephales promelas
EC50 - Crustacea [1]	44 mg/l Test organisms (species): Daphnia sp.
EC50 72h - Algae [1]	397 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	246 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
LOEC (chronic)	47.6 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

n-butyl acetate (123-86-4)	
NOEC (chronic)	23.2 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

4-hydroxy-4-methylpentan-2-one (123-42-2)	
LC50 - Fish [1]	> 100 mg/l Test organisms (species): Oryzias latipes
EC50 - Crustacea [1]	> 1000 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 1000 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
LOEC (chronic)	> 100 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	100 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

1-Ethoxypropan-2-ol (1569-02-4)	
LC50 - Fish [1]	5300 mg/l QSAR
EC50 - Crustacea [1]	> 1000 mg/l Test organisms (species): Daphnia magna
NOEC (chronic)	> 180 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	> 260 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri) Duration: '21 d'

maleic anhydride (108-31-6)	
LC50 - Fish [1]	75 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
LC50 - Fish [2]	75 mg/l Test organisms (species): Lepomis macrochirus
EC50 - Crustacea [1]	330 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 150 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)

propan-1-ol (71-23-8)	
LC50 - Fish [1]	4555 mg/l Test organisms (species): Pimephales promelas
EC50 - Crustacea [1]	3644 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	9.17 g/l
NOEC (chronic)	> 100 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic crustacea	68.3 mg/l (21 d)
NOEC chronic algae	1150 mg/l 48 h

12.2. Persistence and degradability

KORTHO INK K7 RED	
Persistence and degradability	Rapidly degradable

ethanol; ethyl alcohol (64-17-5)	
Persistence and degradability	Readily biodegradable.

ethyl acetate (141-78-6)	
Persistence and degradability	Rapidly degradable
Biodegradation	> 70 % OECD 301 D;MSDS Ethylacetat, Sasol

Di-''isononyl'' phthalate (28553-12-0)	
Persistence and degradability	Rapidly degradable

n-butyl acetate (123-86-4)	
Persistence and degradability	Rapidly degradable

4-hydroxy-4-methylpentan-2-one (123-42-2)	
Persistence and degradability	Rapidly degradable
Biodegradation	98.51 % (OECD 301A method)

1-Ethoxypropan-2-ol (1569-02-4)	
Persistence and degradability	Rapidly degradable
Biodegradation	68 % (OECD 301D method)

maleic anhydride (108-31-6)	
Persistence and degradability	Rapidly degradable

propan-1-ol (71-23-8)	
Persistence and degradability	Rapidly degradable
Biodegradation	75 % 20 d

12.3. Bioaccumulative potential

ethanol; ethyl alcohol (64-17-5)	
BCF - Fish [1]	3
Partition coefficient n-octanol/water (Log Pow)	-0.32
Bioaccumulative potential	No bioaccumulation.

ethyl acetate (141-78-6)	
Partition coefficient n-octanol/water (Log Pow)	0.68 – 0.73 @ 20 - 25 °C

Di-"isononyl" phthalate (28553-12-0)	
BCF - Fish [1]	(183,8 dimensionless)
Partition coefficient n-octanol/water (Log Pow)	8.8 – 9.7 @ 25 °C / pH 4.6

n-butyl acetate (123-86-4)	
Partition coefficient n-octanol/water (Log Pow)	1.81 – 2.3 @ 25 °C

4-hydroxy-4-methylpentan-2-one (123-42-2)	
Partition coefficient n-octanol/water (Log Pow)	-0.09 @ 20 °C

1-Ethoxypropan-2-ol (1569-02-4)	
Partition coefficient n-octanol/water (Log Pow)	< 3

propan-1-ol (71-23-8)	
Partition coefficient n-octanol/water (Log Pow)	0.2 @ 25 °C and pH 7
Partition coefficient n-octanol/water (Log Kow)	0.2 @ 25 °C and pH 7

12.4. Mobility in soil

ethanol; ethyl alcohol (64-17-5)	
Surface tension	0.02339 N/m @ 25 °C
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1

12.5. Results of PBT and vPvB assessment

Component	
Substance(s) not meeting the PBT criteria of REACH regulation, in accordance with Annex XIII	propan-1-ol (71-23-8)
Substance(s) not meeting the vPvB criteria of REACH regulation, in accordance with Annex XIII	propan-1-ol (71-23-8)

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional waste regulation : Waste disposal according to official state regulations.

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

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

Ecological waste information : Avoid release to the environment.

HP Code : HP3 - “Flammable:”
– flammable liquid waste: liquid waste having a flash point below 60 °C or waste gas oil, diesel and light heating oils having a flash point > 55 °C and ≤ 75 °C;
– flammable pyrophoric liquid and solid waste: solid or liquid waste which, even in small quantities, is liable to ignite within five minutes after coming into contact with air;
– flammable solid waste: solid waste which is readily combustible or may cause or contribute to fire through friction;
– flammable gaseous waste: gaseous waste which is flammable in air at 20 °C and a standard pressure of 101.3 kPa;
– water reactive waste: waste which, in contact with water, emits flammable gases in dangerous quantities;
– other flammable waste: flammable aerosols, flammable self-heating waste, flammable organic peroxides and flammable self-reactive waste.
HP5 - “Specific Target Organ Toxicity (STOT)/Aspiration Toxicity:” waste which can cause specific target organ toxicity either from a single or repeated exposure, or which cause acute toxic effects following aspiration.
HP4 - “Irritant – skin irritation and eye damage:” waste which on application can cause skin irritation or damage to the eye.
HP10 - “Toxic for reproduction:” waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring.

SECTION 14: Transport information

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

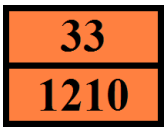
ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 1210	UN 1210	UN 1210	UN 1210	UN 1210
14.2. UN proper shipping name				
PRINTING INK / PRINTING INK RELATED MATERIAL	PRINTING INK RELATED MATERIAL	Printing ink related material	PRINTING INK	PRINTING INK

ADR	IMDG	IATA	ADN	RID
Transport document description				
UN 1210 PRINTING INK / PRINTING INK RELATED MATERIAL, 3, II, (D/E)	UN 1210 PRINTING INK RELATED MATERIAL, 3, II	UN 1210 Printing ink related material, 3, II	UN 1210 PRINTING INK, 3, II	UN 1210 PRINTING INK, 3, II
14.3. Transport hazard class(es)				
3	3	3	3	3
				
14.4. Packing group				
II	II	II	II	II
14.5. Environmental hazards				
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No EmS-No. (Fire): F-E EmS-No. (Spillage): S-D	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

Overland transport

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



Tunnel restriction code (ADR) : D/E
EAC code : •3YE

Transport by sea

Special provisions (IMDG) : 163, 367
Limited quantities (IMDG) : 5 L
Excepted quantities (IMDG) : E2
Packing instructions (IMDG) : P001
Special packing provisions (IMDG) : PP1
IBC packing instructions (IMDG) : IBC02
Tank instructions (IMDG) : T4
Tank special provisions (IMDG) : TP1, TP8
Stowage category (IMDG) : B

Properties and observations (IMDG) : Fluid or viscous liquid containing colouring matter in solution or suspension. Miscibility with water depends upon the solvent.

Air transport

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

Inland waterway transport

Classification code (ADN) : F1
Special provisions (ADN) : 163, 367, 640C
Limited quantities (ADN) : 5 L
Excepted quantities (ADN) : E2
Equipment required (ADN) : PP, EX, A
Ventilation (ADN) : VE01
Number of blue cones/lights (ADN) : 1

Rail transport

Classification code (RID) : F1
Special provisions (RID) : 163, 367, 640C
Limited quantities (RID) : 5L
Excepted quantities (RID) : E2
Packing instructions (RID) : P001
Special packing provisions (RID) : PP1
Mixed packing provisions (RID) : MP19
Portable tank and bulk container instructions (RID) : T4
Portable tank and bulk container special provisions (RID) : TP1, TP8
Tank codes for RID tanks (RID) : L1.5BN
Transport category (RID) : 2
Colis express (express parcels) (RID) : CE7
Hazard identification number (RID) : 33

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

EU-Regulations

REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)		
Reference code	**Applicable on**	**Entry title or description**
3(a)	KORTHO INK K7 RED ; ethanol; ethyl alcohol ; ethyl acetate ; n-butyl acetate ; 4-hydroxy-4-methylpentan-2-one ; 1-Ethoxypropan-2-ol ; propan-1-ol	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

EU restriction list (REACH Annex XVII)		
Reference code	**Applicable on**	**Entry title or description**
3(b)	KORTHO INK K7 RED ; ethanol; ethyl alcohol ; ethyl acetate ; n-butyl acetate ; 4-hydroxy-4-methylpentan-2-one ; 1-Ethoxypropan-2-ol ; propan-1-ol	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

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Council Regulation (EC) for the control of dual-use items

Contains no substance subject to the COUNCIL REGULATION (EC) for the control of dual-use items

VOC Directive (2004/42)

Organic solvent : Yes

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.2. Chemical safety assessment

No chemical safety assessment has been carried out for the substance or the mixture by the supplier
For the following substances of this mixture a chemical safety assessment has been carried out:
ethanol; ethyl alcohol

SECTION 16: Other information

Abbreviations and acronyms:	
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DNEL	Derived-No Effect Level
EC50	Median effective concentration
LC50	Median lethal concentration
LD50	Median lethal dose
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006

Abbreviations and acronyms:	
STP	Sewage treatment plant
vPvB	Very Persistent and Very Bioaccumulative

Other information : DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

Full text of H- and EUH-statements:	
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH071	Corrosive to the respiratory tract.
EUH208	Contains maleic anhydride. May produce an allergic reaction.
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
Repr. 2	Reproductive toxicity, Category 2
Resp. Sens. 1	Respiratory sensitisation, Category 1
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Sens. 1A	Skin sensitisation, category 1A
STOT RE 1	Specific target organ toxicity – Repeated exposure, Category 1
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis

Full text of use descriptors	
PC18	Ink and Toners

Full text of use descriptors	
PROC0	Other
SU0	Other

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:		
Flam. Liq. 2	H225	On basis of test data
Eye Dam. 1	H318	Calculation method
Repr. 2	H361	Calculation method
STOT SE 3	H336	Calculation method
STOT SE 3	H335	Calculation method

The classification complies with : ATP 12

Safety Data Sheet (SDS), EU

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.