



markem·imaje

a **DOVER** company

SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of: Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

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Revision Number 4.02

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

1.1. Product identifier

Product Code(s) MS596-4

Product Name INK-MS596-4x0,8L

Unique Formula Identifier (UFI) CSQ0-H9W6-410W-XUHM

Pure substance/mixture Mixture

Contains

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

Recommended use Printing ink

Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Company

Markem-Imaje Industries
9, rue Gaspard Monge
26500 Bourg-lès-Valence
France
Tel. +33 (0)4 75 75 63 98
<http://www.markem-imaje.com>
E-mail: sds@markem-imaje.com

MARKEM-IMAJE LTD
4th Floor - Centenary House
1 Centenary Way
MANCHESTER M50 1RF
1618648100

1.4. Emergency telephone number

Emergency Telephone Chemtrec: 1-800-424-9300 / +44-2038073798

National Emergency Service /
Poison Control Center UK: NHS Direct: 111
ICELAND: Poison Control Center 543 2222 or 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Serious eye damage/eye irritation	Category 2 - (H319)
Specific target organ toxicity — single exposure	Category 3 - (H336)
Category 3 Narcotic effects	
Chronic aquatic toxicity	Category 3 - (H412)
Flammable liquids	Category 2 - (H225)

2.2. Label elements

Contains Methyl ethyl ketone; Tetrabutylammonium hexafluorophosphate

**Signal word**

Danger

Hazard statements

H319 - Causes serious eye irritation
 H336 - May cause drowsiness or dizziness
 H412 - Harmful to aquatic life with long lasting effects
 H225 - Highly flammable liquid and vapour
 EUH066 - Repeated exposure may cause skin dryness or cracking

Precautionary statements

P501 - Dispose of contents and container to an approved waste disposal plant
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
 P312 - Call a POISON CENTER or doctor if you feel unwell
 P370 + P378 - In case of fire: Use dry chemical, CO2, water spray or alcohol-resistant foam to extinguish
 P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Additional information

This product requires tactile warnings if supplied to the general public.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients**3.1 Substances**

Not applicable

3.2 Mixtures**Chemical nature**

Preparation.

Chemical name	EC No (EU Index No)	CAS No.	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Methyl ethyl ketone	201-159-0	78-93-3	80 - 90	Flam. Liq. 2 (H225) Eye Irrit. 2 (H319) STOT SE 3 (H336) (EUH066)	01-21194572 90-43	-	-	-

Xanthylum, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, hydrogen bis[3-[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-2-hydroxy-5-nitrobenzenesulfonato(3-)]chromate(3-), compound with 3-[(2-ethylhexyl)oxy]-1-propanamine	284-723-9	84962-27-6	1 - 5	Aquatic Chronic 2 (H411)	01-21207648 62-45	-	-	-
Tetrabutylammonium hexafluorophosphate	221-472-6	3109-63-5	1 - 5	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) STOT SE 3 (H335) Acute Tox. 4 (H302)	No data available	-	-	-

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

Acute Toxicity Estimate

If LD50/LC50 data is not available or does not correspond to the classification category, then the appropriate conversion value from CLP Annex I, Table 3.1.2, is used to calculate the acute toxicity estimate (ATEmix) for classifying a mixture based on its components

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Methyl ethyl ketone 78-93-3	2483	5000	No data available	No data available	No data available

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59)

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance.
Inhalation	Remove to fresh air. IF exposed or concerned: Get medical advice/attention.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Ingestion	Clean mouth with water and afterwards drink plenty of water. Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a doctor.
Self-protection of the first aider	Remove all sources of ignition. Ensure that medical personnel are aware of the material(s)

involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing.

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

Symptoms May cause redness and tearing of the eyes. Burning sensation. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Prolonged contact may cause redness and irritation.

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

Note to doctors Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media Dry chemical. Carbon dioxide (CO₂). Water spray. Alcohol resistant foam.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.

Other information Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

6.3. Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Do not touch or walk through spilled material. A

vapour suppressing foam may be used to reduce vapours. Dyke far ahead of spill to collect run-off water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Use personal protection equipment. Avoid breathing vapours or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. In case of insufficient ventilation, wear suitable respiratory equipment.

General hygiene considerations Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labelled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations.

7.3. Specific end use(s)

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
Methyl ethyl ketone 78-93-3	TWA 200 ppm TWA 600 mg/m ³ STEL 300 ppm STEL 900 mg/m ³	TWA: 100 ppm TWA: 295 mg/m ³ STEL 200 ppm STEL 590 mg/m ³ H*	TWA: 200 ppm TWA: 600 mg/m ³ STEL: 300 ppm STEL: 900 mg/m ³	STEL: 885 mg/m ³ TWA: 590 mg/m ³	TWA: 200 ppm TWA: 600 mg/m ³ STEL: 300 ppm STEL: 900 mg/m ³
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland

Methyl ethyl ketone 78-93-3	STEL: 300 ppm STEL: 900 mg/m ³ TWA: 200 ppm TWA: 600 mg/m ³	TWA: 600 mg/m ³ Ceiling: 900 mg/m ³	TWA: 50 ppm TWA: 145 mg/m ³ H* STEL: 900 mg/m ³ STEL: 300 ppm	TWA: 200 ppm TWA: 600 mg/m ³ STEL: 300 ppm STEL: 900 mg/m ³	TWA: 20 ppm TWA: 60 mg/m ³ STEL: 100 ppm STEL: 300 mg/m ³ iho*
Xanthylium, 9-(2-carboxyphenyl)-3,6- bis(diethylamino)-, hydrogen bis[3-[(4,5-dihydro-3-met hyl-5-oxo-1-phenyl-1H-py razol-4-yl)azo]-2-hydroxy- 5-nitrobenzenesulfonato(3-)]chromate(3-), compound with 3-[(2-ethylhexyl)oxy]-1-pr opanamine 84962-27-6	-	TWA: 0.5 mg/m ³ Ceiling: 1.5 mg/m ³	-	-	TWA: 0.5 mg/m ³
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Methyl ethyl ketone 78-93-3	TWA: 200 ppm TWA: 600 mg/m ³ STEL: 300 ppm STEL: 900 mg/m ³ *	TWA: 200 ppm TWA: 600 mg/m ³ H*	TWA: 200 ppm TWA: 600 mg/m ³ Peak: 200 ppm Peak: 600 mg/m ³ *	TWA: 200 ppm TWA: 600 mg/m ³ STEL: 300 ppm STEL: 900 mg/m ³	TWA: 600 mg/m ³ TWA: 200 ppm STEL: 900 mg/m ³ STEL: 300 ppm b*
Xanthylium, 9-(2-carboxyphenyl)-3,6- bis(diethylamino)-, hydrogen bis[3-[(4,5-dihydro-3-met hyl-5-oxo-1-phenyl-1H-py razol-4-yl)azo]-2-hydroxy- 5-nitrobenzenesulfonato(3-)]chromate(3-), compound with 3-[(2-ethylhexyl)oxy]-1-pr opanamine 84962-27-6	-	-	-	TWA: 0.5 mg/m ³	-
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Methyl ethyl ketone 78-93-3	TWA: 200 ppm TWA: 600 mg/m ³ STEL: 300 ppm STEL: 900 mg/m ³ Sk*	TWA: 200 ppm TWA: 600 mg/m ³ STEL: 300 ppm STEL: 900 mg/m ³	TWA: 200 ppm TWA: 590 mg/m ³ STEL: 300 ppm STEL: 885 mg/m ³	TWA: 67 ppm TWA: 200 mg/m ³ STEL: 300 ppm STEL: 900 mg/m ³	-
Xanthylium, 9-(2-carboxyphenyl)-3,6- bis(diethylamino)-, hydrogen bis[3-[(4,5-dihydro-3-met hyl-5-oxo-1-phenyl-1H-py razol-4-yl)azo]-2-hydroxy- 5-nitrobenzenesulfonato(3-)]chromate(3-), compound with 3-[(2-ethylhexyl)oxy]-1-pr opanamine 84962-27-6	TWA: 2 mg/m ³ STEL: 6 mg/m ³	-	-	-	-
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
Methyl ethyl ketone 78-93-3	STEL: 300 ppm STEL: 900 mg/m ³ TWA: 200 ppm	STEL: 300 ppm STEL: 900 mg/m ³ TWA: 200 ppm	TWA: 197 ppm TWA: 590 mg/m ³ STEL: 300 ppm	TWA: 75 ppm TWA: 220 mg/m ³ STEL: 112.5 ppm	STEL: 900 mg/m ³ TWA: 450 mg/m ³ skóra*

	TWA: 600 mg/m ³	TWA: 600 mg/m ³	STEL: 900 mg/m ³ H*	STEL: 275 mg/m ³	
Xanthylum, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, hydrogen bis[3-[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-2-hydroxy-5-nitrobenzenesulfonato(3-)]chromate(3-), compound with 3-[(2-ethylhexyl)oxy]-1-propanamine 84962-27-6	-	-	-	TWA: 0.5 mg/m ³ STEL: 1.5 mg/m ³	TWA: 0.5 mg/m ³
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Methyl ethyl ketone 78-93-3	TWA: 200 ppm TWA: 600 mg/m ³ STEL: 300 ppm STEL: 900 mg/m ³	TWA: 200 ppm TWA: 600 mg/m ³ STEL: 300 ppm STEL: 900 mg/m ³	TWA: 200 ppm TWA: 600 mg/m ³ Ceiling: 900 mg/m ³	TWA: 200 ppm TWA: 600 mg/m ³ STEL: 300 ppm STEL: 900 mg/m ³ K*	TWA: 200 ppm TWA: 600 mg/m ³ STEL: 300 ppm STEL: 900 mg/m ³
Xanthylum, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, hydrogen bis[3-[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-2-hydroxy-5-nitrobenzenesulfonato(3-)]chromate(3-), compound with 3-[(2-ethylhexyl)oxy]-1-propanamine 84962-27-6	TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³	-	-	-
Chemical name	Sweden		Switzerland	United Kingdom	
Methyl ethyl ketone 78-93-3	NGV: 50 ppm NGV: 150 mg/m ³ Bindande KGV: 300 ppm Bindande KGV: 900 mg/m ³		TWA: 200 ppm TWA: 590 mg/m ³ STEL: 200 ppm STEL: 590 mg/m ³ H*	TWA: 200 ppm TWA: 600 mg/m ³ STEL: 300 ppm STEL: 899 mg/m ³ Sk*	
Xanthylum, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, hydrogen bis[3-[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-2-hydroxy-5-nitrobenzenesulfonato(3-)]chromate(3-), compound with 3-[(2-ethylhexyl)oxy]-1-propanamine 84962-27-6	-		S+ TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³ STEL: 1.5 mg/m ³	

Biological occupational exposure limits

Chemical name	European Union	Austria	Bulgaria	Croatia	Czech Republic
Methyl ethyl ketone 78-93-3	-	-	-	2.6 mg/g Creatinine - urine (Ethyl methyl ketone) - at the end	-

Chemical name	Denmark	Finland	France	of the work shift Germany DFG	Germany TRGS
Methyl ethyl ketone 78-93-3	-	-	2 mg/L - urine (Methylethylketone) - end of shift	2 mg/L (urine - 2-Butanone end of shift) 2 mg/L - BAT (end of exposure or end of shift) urine	2 mg/L (urine - 2-Butanone end of shift)
Xanthylum, 9-(2-carboxyphenyl)-3,6- bis(diethylamino)-, hydrogen bis[3-[(4,5-dihydro-3-met hyl-5-oxo-1-phenyl-1H-py razol-4-yl)azo]-2-hydroxy- 5-nitrobenzenesulfonato(3-)]chromate(3-), compound with 3-[(2-ethylhexyl)oxy]-1-pr opanamine 84962-27-6	-	-	0.01 mg/g creatinine - urine (Total Chromium) - augmented during shift 0.03 mg/g creatinine - urine (Total Chromium) - end of shift at end of workweek	0.6 µg/L - BAR (end of exposure or end of shift) urine	-
Chemical name	Hungary	Ireland	Italy MDLPS	Italy AIDII	
Methyl ethyl ketone 78-93-3	-	70 µmol/L (urine - Butan-2-one post shift)	-	2 mg/L - urine (MEK) - end of shift	
Chemical name	Latvia	Luxembourg	Romania	Slovakia	
Methyl ethyl ketone 78-93-3	-	-	2 mg/L - urine (Methylethylketone) - end of shift	-	
Tetrabutylammonium hexafluorophosphate 3109-63-5	-	-	5 mg/g Creatinine - urine (Fluorine) - end of shift	-	
Chemical name	Slovenia	Spain	Switzerland	United Kingdom	
Methyl ethyl ketone 78-93-3	2 mg/L - urine (2-Butanone) - at the end of the work shift	2 mg/L (urine - Methyl ethyl ketone end of shift)	2 mg/L (urine - 2-Butanone end of shift, before subsequent shift or 16 hour) 27.7 µmol/L (urine - 2-Butanone end of shift, before subsequent shift or 16 hour)	70 µmol/L - urine (Butan-2-one) - post shift	

Derived No Effect Level (DNEL) No information available.

Predicted No Effect Concentration (PNEC)

Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
Methyl ethyl ketone 78-93-3	-	1161 mg/kg bw/day [4] [6]	600 mg/m ³ [4] [6]

Notes

[4] Systemic health effects.
[6] Long term.

Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
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Chemical name	Oral	Dermal	Inhalation
Methyl ethyl ketone 78-93-3	31 mg/kg bw/day [4] [6]	-	106 mg/m ³ [4] [6]

Notes

[4] Systemic health effects.
[6] Long term.

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
Methyl ethyl ketone 78-93-3	55.8 mg/L	55.8 mg/L	55.8 mg/L	-	-

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
Methyl ethyl ketone 78-93-3	284.74 mg/kg sediment dw	284.7 mg/kg sediment dw	709 mg/L	22.5 mg/kg soil dw	1000 mg/kg food

8.2. Exposure controls

Engineering controls	No information available.
Personal protective equipment	
Eye/face protection	Tight sealing safety goggles. Wear safety glasses with side shields (or goggles).
Hand protection	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Wear suitable gloves. Impervious gloves.
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Antistatic boots. If there is a risk of contact: Protective shoes or boots.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
General hygiene considerations	Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.
Environmental exposure controls	No information available.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state	Liquid
Colour	black
Odour	Solvent.

Odour threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point / freezing point	-85 °C	
Initial boiling point and boiling range	75 °C	
Flammability	No information available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	11.5	
Lower flammability or explosive limits	1.8	
Flash point	-9 °C	
Autoignition temperature	500 °C	
Decomposition temperature		None known
pH	No data available	
pH (as aqueous solution)	No data available	None known
Kinematic viscosity	No information available	None known
Dynamic viscosity	No data available	None known
Water solubility	partly soluble	
Solubility(ies)	No information available	None known
Partition coefficient	log P(o/w) = 0.26	
Vapour pressure	No information available	None known
Relative density	0.871	
Bulk density	No data available	
Liquid Density	No data available	
Relative vapour density	No information available	None known
Particle characteristics		
Particle Size	No information available	
Particle Size Distribution	No information available	

9.2. Other information

VOC content 82.3

9.2.1. Information with regards to physical hazard classes
Not applicable

9.2.2. Other safety characteristics
No information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity No information available.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge Yes.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Hazardous polymerisation no.

10.4. Conditions to avoid

Conditions to avoid Heat, flames and sparks.

10.5. Incompatible materials

Incompatible materials None known based on information supplied.

10.6. Hazardous decomposition products

Hazardous decomposition products none.

SECTION 11: Toxicological information

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

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract. May cause drowsiness or dizziness.
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.
Skin contact	Specific test data for the substance or mixture is not available. May cause irritation. Prolonged contact may cause redness and irritation. Causes mild skin irritation.
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms May cause redness and tearing of the eyes. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Prolonged contact may cause redness and irritation.

Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	3,796.20 mg/kg
ATEmix (dermal)	6,035.70 mg/kg
ATEmix (inhalation-gas)	99,999.00 ppm
ATEmix (inhalation-dust/mist)	99,999.00 mg/l
ATEmix (inhalation-vapour)	99,999.00 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Methyl ethyl ketone	2483 mg/kg (Rat)	= 5000 mg/kg (Rabbit)	= 11700 ppm (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes mild skin irritation.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye irritation.

Respiratory or skin sensitisation No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure May cause drowsiness or dizziness.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties No information available.

11.2.2. Other information

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity Harmful to aquatic life with long lasting effects.

Unknown aquatic toxicity Contains 0 % of components with unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Methyl ethyl ketone	-	LC50: 3130 - 3320mg/L (96h, Pimephales promelas)	-	EC50: >520mg/L (48h, Daphnia magna) EC50: =5091mg/L (48h, Daphnia magna) EC50: 4025 - 6440mg/L (48h, Daphnia magna)

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation**Component Information**

Chemical name	Partition coefficient
Methyl ethyl ketone	0.3
Xanthylium, 9-(2-carboxyphenyl)-3,6-bis(diethylamino)-, hydrogen bis[3-[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-2-hydroxy-5-nitrobenzenesulfonato(3-)]chromate(3-), compound with 3-[(2-ethylhexyl)oxy]-1-propanamine	4.6

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment No information available.

Chemical name	PBT and vPvB assessment
Methyl ethyl ketone	The substance is not PBT / vPvB

12.6. Endocrine disrupting properties

Endocrine disrupting properties No information available.

12.7. Other adverse effects

No information available.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Waste from residues/unused products**

Do not dispose of waste into sewer. Do not allow into any sewer on the ground, or into any body of water. Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation. This material and its container must be disposed of as hazardous waste.

Contaminated packaging

Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers. Dispose of wastes in an approved waste disposal facility.

Other information

Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: Transport information**IATA**

14.1 UN number or ID number	UN1210
14.2 UN proper shipping name	Printing ink
14.3 Transport hazard class(es)	3
14.4 Packing group	II
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user	
Special Provisions	None

IMDG

14.1 UN number or ID number	UN1210
14.2 UN proper shipping name	Printing ink
14.3 Transport hazard class(es)	3
14.4 Packing group	II
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user	
Special Provisions	None
EmS-No	F-E, S-D
14.7 Maritime transport in bulk according to IMO instruments	No information available

ADR

14.1 UN number or ID number	UN1210
14.2 UN proper shipping name	Printing ink
14.3 Transport hazard class(es)	3
14.4 Packing group	II
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user	
Special Provisions	None
Classification code	F1

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****France****Occupational Illnesses (R-463-3, France)**

Chemical name	French RG number
Methyl ethyl ketone 78-93-3	RG 84

Germany

Water hazard class (WGK) strongly hazardous to water (WGK 3)

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorisations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Methyl ethyl ketone - 78-93-3	75.	-

(*) 75 Entry 75 regards substances in tattoo inks or permanent make-up.

Persistent Organic Pollutants

Not applicable

Dangerous substance category per Seveso Directive (2012/18/EU)

P5a - FLAMMABLE LIQUIDS

P5b - FLAMMABLE LIQUIDS

P5c - FLAMMABLE LIQUIDS

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

International Inventories

TSCA	Contact supplier for inventory compliance status
DSL/NDSL	Contact supplier for inventory compliance status
EINECS/ELINCS	Contact supplier for inventory compliance status
ENCS	Contact supplier for inventory compliance status
IECSC	Contact supplier for inventory compliance status
KECL	Contact supplier for inventory compliance status
PICCS	Contact supplier for inventory compliance status
AIC	Contact supplier for inventory compliance status
NZIoC	Contact supplier for inventory compliance status

Legend:

TSCA	- United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL	- Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS	- European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS	- Japan Existing and New Chemical Substances
IECSC	- China Inventory of Existing Chemical Substances
KECL	- Korean Existing and Evaluated Chemical Substances
PICCS	- Philippines Inventory of Chemicals and Chemical Substances
AICS	- Australian Inventory of Chemical Substances
NZIoC	- New Zealand Inventory of Chemicals

15.2. Chemical safety assessment

Chemical Safety Report	No information available
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SECTION 16: Other information**Key or legend to abbreviations and acronyms used in the safety data sheet****Full text of H-Statements referred to under section 3**

EUH066 - Repeated exposure may cause skin dryness or cracking
H225 - Highly flammable liquid and vapour
H302 - Harmful if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
H411 - Toxic to aquatic life with long lasting effects

Legend

SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
+	Sensitisers		

Classification procedure

Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
 European Chemicals Agency (ECHA) (ECHA_API)
 EPA (Environmental Protection Agency)
 Acute Exposure Guideline Level(s) (AEGl(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 National Institute of Technology and Evaluation (NITE)
 Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)
 Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
 Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
 Organisation for Economic Co-operation and Development Screening Information Data Set
 World Health Organization

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This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

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End of Safety Data Sheet