Safety data sheet

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

1.1. Product identifier
Product name **J3 SERIES INK**

1.2. Relevant identified uses of the substance or mixture and uses advised against
Intended use **Pad printing ink.**

1.3. Details of the supplier of the safety data sheet
Name **INKCUPS NOW CORP.**
Full address **310 Andover St.**
District and Country **Danvers, MA. 01923**
U.S.A.
Tel. 9786468980
Fax 9786468981
e-mail address of the competent person
responsible for the Safety Data Sheet **compliance@inkcups.com**
Product distribution by: **Inkcups**

1.4. Emergency telephone number
For urgent inquiries refer to **18004249300**

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of EC Regulation 1907/2006 and subsequent amendments. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Flammable liquid, category 3	H226	Flammable liquid and vapour.
Acute toxicity, category 4	H302	Harmful if swallowed.
Serious eye damage, category 1	H318	Causes serious eye damage.
Skin irritation, category 2	H315	Causes skin irritation.
Hazardous to the aquatic environment, chronic toxicity, category 3	H412	Harmful to aquatic life with long lasting effects.

2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:

Signal words: Danger

Hazard statements:

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H318	Causes serious eye damage.
H315	Causes skin irritation.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements:

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P264	Wash the hands thoroughly after handling.
P280	Wear protective gloves / 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.
P310	Immediately call a POISON CENTER or a doctor.
P370+P378	In case of fire: use chemical powder, CO2 or dry send to extinguish.

Contains: CYCLOHEXANONE
BUTYLGLYCOL ACETATE
quaternary ammonium eto sulphate

2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

SECTION 3. Composition/information on ingredients

3.1. Substances

Solvent naphtha based product, benzene-free (<= 0.05% w/w)

3.2. Mixtures

Contains:

The full wording of hazard (H) phrases is given in section 16 of the sheet.

Identification	**x = Conc. %**	**Classification 1272/2008 (CLP)**
2-METHOXY-1-METHYLETHYL ACETATE		
CAS 108-65-6	25,5 ≤ x < 27	Flam. Liq. 3 H226
EC 203-603-9		
INDEX 607-195-00-7		
Reg. no. 01-2119475791-29-xxxx		
CYCLOHEXANONE		
CAS 108-94-1	12 ≤ x < 13,5	Flam. Liq. 3 H226, Acute Tox. 4 H302, Acute Tox. 4 H312, Acute Tox. 4 H332, Eye Dam. 1 H318, Skin Irrit. 2 H315
EC 203-631-1		

INDEX 606-010-00-7

Reg. no. 01-2119453616-35-xxxx

BUTYLGLYCOL ACETATE

CAS 112-07-2	9 ≤ x < 10,5	Acute Tox. 4 H302, Acute Tox. 4 H312, Acute Tox. 4 H332
EC 203-933-3		
INDEX 607-038-00-2		
Reg. no. 01-2119475112-47xxxx		

4-HYDROXY-4-METHYLPENTAN-2-ONE

CAS 123-42-2	6 ≤ x < 7	Flam. Liq. 3 H226, Eye Irrit. 2 H319
EC 204-626-7		
INDEX 603-016-00-1		
Reg. no. 01-2119473975-21xxxx		

SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM

CAS 64742-95-6	2,5 ≤ x < 3	Flam. Liq. 3 H226, Asp. Tox. 1 H304, STOT SE 3 H335, STOT SE 3 H336, Aquatic Chronic 2 H411, EUH066, Note P
EC 918-668-5		
INDEX 649-356-00-4		
Reg. no. 01-2119486773-35-xxxx		

quaternary ammonium eto sulphate

CAS 68308-64-5	2 ≤ x < 2,5	Acute Tox. 4 H302, Eye Dam. 1 H318, Skin Irrit. 2 H315, Aquatic Acute 1 H400 M=1
EC 269-662-8		
INDEX -		
Reg. no. auto classificazione		

N-BUTYL ACETATE

CAS 123-86-4	2 ≤ x < 2,5	Flam. Liq. 3 H226, STOT SE 3 H336, EUH066
EC 204-658-1		
INDEX 607-025-00-1		
Reg. no. 01-2119485493-29-xxxx		

Amines, coco alkyldimethyl, N-oxides

CAS 61788-90-7	0,1 ≤ x < 0,2	Acute Tox. 4 H302, Eye Dam. 1 H318, Skin Irrit. 2 H315, Aquatic Acute 1 H400 M=10
EC 263-016-9		
INDEX -		

SECTION 4. First aid measures

4.1. Description of first aid measures

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 30-60 minutes, opening the eyelids fully. Get medical advice/attention.

SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.
INGESTION: Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.
INHALATION: Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

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

Specific information on symptoms and effects caused by the product are unknown.

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

Information not available

SECTION 5. Firefighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT
Extinguishing substances are: carbon dioxide, foam, chemical powder. For product loss or leakage that has not caught fire, water spray can be used to disperse flammable vapours and protect those trying to stem the leak.
UNSUITABLE EXTINGUISHING EQUIPMENT
Do not use jets of water. Water is not effective for putting out fires but can be used to cool containers exposed to flames to prevent explosions.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
Excess pressure may form in containers exposed to fire at a risk of explosion. Do not breathe combustion products.

5.3. Advice for firefighters

GENERAL INFORMATION
Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.
SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS
Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard.
Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

Send away individuals who are not suitably equipped. Eliminate all sources of ignition (cigarettes, flames, sparks, etc.) from the leakage site.

6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. If the product is flammable, use explosion-proof equipment. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.
Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

SECTION 7. Handling and storage

7.1. Precautions for safe handling

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat. Avoid leakage of the product into the environment.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store in a well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition. Keep containers away from any incompatible materials, see section 10 for details.

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Regulatory References:

BGR	България	МИНИСТЕРСТВО НА ТРУДА И СОЦИАЛНАТА ПОЛИТИКА МИНИСТЕРСТВО НА ЗДРАВЕОПАЗВАНЕТО НАРЕДБА No 13 от 30 декември 2003 г
CZE	Česká Republika	Nařízení vlády č. 361/2007 Sb. kterým se stanoví podmínky ochrany zdraví při práci
DEU	Deutschland	MAK-und BAT-Werte-Liste 2012
DNK	Danmark	Graensevaerdier per stoffer og materialer
ESP	España	INSHT - Límites de exposición profesional para agentes químicos en España 2015
FRA	France	JORF n°0109 du 10 mai 2012 page 8773 texte n° 102
GBR	United Kingdom	EH40/2005 Workplace exposure limits
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
POL	Polska	ROZPORZĄDZENIE MINISTRA PRACY I POLITYKI SPOŁECZNEJ z dnia 16 grudnia 2011r
PRT	Portugal	Ministério da Economia e do Emprego Consolida as prescrições mínimas em matéria de protecção dos trabalhadores contra os riscos para a segurança e a saúde devido à exposição a agentes químicos no trabalho - Diaro da Republica I 26; 2012-02-06
SWE	Sverige	Occupational Exposure Limit Values, AF 2011:18
TUR	Türkiye	2000/39/EC sayılı Direktifin ekidir
EU	OEL EU	Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2016

2-METHOXY-1-METHYLETHYL ACETATE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
TLV	BGR	275		550		SKIN
TLV	CZE	270		550		SKIN
AGW	DEU	270	50	270	50	
MAK	DEU	270	50	270	50	
TLV	DNK	275	50			SKIN
VLA	ESP	275	50	550	100	SKIN
VLEP	FRA	275	50	550	100	SKIN
WEL	GBR	274	50	548	100	
VLEP	ITA	275	50	550	100	SKIN
NDS	POL	260		520		
VLE	PRT	275	50	550	100	SKIN
MAK	SWE	250	50	400	75	SKIN
ESD	TUR	275	50	550	100	SKIN
OEL	EU	275	50	550	100	SKIN

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,635	mg/l
Normal value in marine water	0,0635	mg/l
Normal value for fresh water sediment	3,29	mg/kg

Normal value for marine water sediment	0,329	mg/l
Normal value for water, intermittent release	6,35	mg/l
Normal value of STP microorganisms	100	mg/l
Normal value for the terrestrial compartment	0,29	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers Acute local	Acute systemic	Chronic local	Chronic systemic	Effects on workers Acute local	Acute systemic	Chronic local	Chronic systemic
Oral			VND	1,67 mg/kg				
Inhalation			VND	33 mg/m3			VND	272 mg/m3
Skin			VND	54,8 mg/kg			VND	153,5 mg/kg

CYCLOHEXANONE

Threshold Limit Value

Type	Country	TWA/8h mg/m3	TWA/8h ppm	STEL/15min mg/m3	STEL/15min ppm	
TLV	BGR	40,8		81,6		SKIN
TLV	CZE	40		80		SKIN
AGW	DEU	80	20	80	20	SKIN
TLV	DNK	40	10			
VLA	ESP	41	10	82	20	SKIN
VLEP	FRA	40,8	10	81,6	20	
WEL	GBR	41	10	82	20	SKIN
VLEP	ITA	40,8	10	81,6	20	SKIN
NDS	POL	40		80		
VLE	PRT	40,8	10	81,6	20	SKIN
MAK	SWE	41	10	81	20	SKIN
ESD	TUR	40,8	10	81,6	20	SKIN
OEL	EU	40,8	10	81,6	20	SKIN
TLV-ACGIH		80	20	201	50	

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,1	mg/l
Normal value in marine water	0,01	mg/l
Normal value for fresh water sediment	0,512	mg/kg
Normal value for marine water sediment	0,0512	mg/kg
Normal value for water, intermittent release	1	mg/l
Normal value of STP microorganisms	10	mg/l
Normal value for the terrestrial compartment	0,0435	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers Acute local	Acute systemic	Chronic local	Chronic systemic	Effects on workers Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation			VND	10 mg/m3			VND	40 mg/m3
Skin			VND	1 mg/kg			VND	4 mg/kg/d

BUTYLGLYCOL ACETATE

Threshold Limit Value

Type	Country	TWA/8h mg/m3	TWA/8h ppm	STEL/15min mg/m3	STEL/15min ppm	
TLV	BGR	133		333		SKIN
TLV	CZE	130		300		SKIN
AGW	DEU	130	20	520	80	SKIN
MAK	DEU	66	10	132	20	SKIN

TLV	DNK	130	20			SKIN
VLA	ESP	133	20	333	50	SKIN
VLEP	FRA	66,5	10	333	50	SKIN
WEL	GBR	133	20	332	50	SKIN
VLEP	ITA	133	20	333	50	SKIN
NDS	POL	100		300		
VLE	PRT	133	20	333	50	SKIN
MAK	SWE	70	10	140	20	SKIN
ESD	TUR	133	20	333	50	SKIN
OEL	EU	133	20	333	50	SKIN
TLV-ACGIH		131	20			

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,304	mg/l
Normal value in marine water	0,0304	mg/l
Normal value for fresh water sediment	2,03	mg/l
Normal value for marine water sediment	0,203	mg/l
Normal value for water, intermittent release	0,56	mg/l
Normal value of STP microorganisms	90	mg/l
Normal value for the food chain (secondary poisoning)	0,06	g/kg
Normal value for the terrestrial compartment	0,06	g/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers Acute local	Acute systemic	Chronic local	Chronic systemic	Effects on workers Acute local	Acute systemic	Chronic local	Chronic systemic
Oral	VND	18 mg/kg/d	VND	4,3 mg/kg/d				
Inhalation	166 mg/m3	499 mg/m3	VND	67 mg/m3	333 mg/m3	773 mg/m3	VND	133 mg/m3
Skin			VND	36 mg/kg/d	102 mg/kg/d	27 mg/kg/d	VND	102 mg/kg/d

4-HYDROXY-4-METHYLPENTAN-2-ONE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min			
		mg/m3	ppm	mg/m3	ppm		
TLV	CZE	200		300			
AGW	DEU	96	20	192	40	SKIN	
MAK	DEU	96	20	192	40	SKIN	
TLV	DNK	240	50				
VLA	ESP	241	50				
VLEP	FRA	240	50				
WEL	GBR	241	50	362	75		
NDS	POL	240					
MAK	SWE	120	25	240	50		
TLV-ACGIH		238	50				

SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers Acute local	Acute systemic	Chronic local	Chronic systemic	Effects on workers Acute local	Acute systemic	Chronic local	Chronic systemic
Oral			VND	11 mg/kg				
Inhalation			VND	32 mg/m3			VND	150 mg/m3
Skin			VND	11 mg/kg			VND	25 mg/kg

N-BUTYL ACETATE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min	
		mg/m3	ppm	mg/m3	ppm
TLV	BGR	710		950	
TLV	CZE	950		1200	
MAK	DEU	480	100	960	200
VLA	ESP	724	150	965	200
VLEP	FRA	710	150	940	200
WEL	GBR	724	150	966	200
NDS	POL	200		950	
MAK	SWE	500	100	700	150
TLV-ACGIH			50		150

BUTANOL

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
TLV	CZE	300		600		SKIN
AGW	DEU	310	100	310	100	
MAK	DEU	310	100	310	100	
TLV	DNK	150	50			SKIN
VLA	ESP	61	20	154	50	SKIN
VLEP	FRA			150	50	
WEL	GBR			154	50	SKIN
NDS	POL	50		150		
MAK	SWE	45	15	90	30	SKIN
TLV-ACGIH		61	20			

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,082	mg/l
Normal value in marine water	0,0082	mg/l
Normal value for fresh water sediment	0,178	mg/kg
Normal value for marine water sediment	0,0178	mg/kg
Normal value for water, intermittent release	2,25	mg/l
Normal value of STP microorganisms	2476	mg/l
Normal value for the terrestrial compartment	0,015	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral			VND	3125 mg/kg				
Inhalation			55 mg/m3	VND			310 mg/m3	VND

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.
When choosing personal protective equipment, ask your chemical substance supplier for advice.
Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

HAND PROTECTION
Protect hands with category III work gloves (see standard EN 374).
The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.
The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION
Wear category II professional long-sleeved overalls and safety footwear (see Directive 89/686/EEC and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

Consider the appropriateness of providing antistatic clothing in the case of working environments in which there is a risk of explosion.

EYE PROTECTION
Wear a hood visor or protective visor combined with airtight goggles (see standard EN 166).

In the presence of risks of exposure to splashes or squirts during work, adequate mouth, nose and eye protection should be used to prevent accidental absorption.

RESPIRATORY PROTECTION
If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.
Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.
If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	liquid
Colour	various
Odour	typical of solvent
Odour threshold	Not available
pH	Not available
Melting point / freezing point	Not available
Initial boiling point	> 115 °C
Boiling range	Not available
Flash point	40 °C
Evaporation Rate	Not available
Flammability of solids and gases	Not available
Lower inflammability limit	Not available
Upper inflammability limit	Not available
Lower explosive limit	Not available
Upper explosive limit	Not available

Vapour pressure	Not available
Vapour density	Not available
Relative density	Not available
Solubility	insoluble
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Explosive properties	Not available
Oxidising properties	Not available

9.2. Other information

Information not available

SECTION 10. Stability and reactivity

10.1. Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

2-METHOXY-1-METHYLETHYL ACETATE
Stable in normal conditions of use and storage.

With the air it may slowly develop peroxides that explode with an increase in temperature.

CYCLOHEXANONE
Attacks various types of plastic materials.

May condense under the effect of heat to form resinous compounds.

4-HYDROXY-4-METHYLPENTAN-2-ONE
Decomposes at temperatures above 90°C/194°F.

N-BUTYL ACETATE
Decomposes on contact with: water.

10.2. Chemical stability

The product is stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions

The vapours may also form explosive mixtures with the air.

2-METHOXY-1-METHYLETHYL ACETATE
May react violently with: oxidising substances,strong acids,alkaline metals.

CYCLOHEXANONE
Risk of explosion on contact with: hydrogen peroxide,nitric acid,heat,mineral acids.May react violently with: oxidising agents.Forms explosive mixtures

with: air.

4-HYDROXY-4-METHYLPENTAN-2-ONE
Risk of explosion on contact with: air,sources of heat.May react dangerously with: alkaline metals,amines,oxidising agents,acids.

N-BUTYL ACETATE
Risk of explosion on contact with: strong oxidising agents.May react dangerously with: alkaline hydroxides,potassium tert-butoxide.Forms explosive mixtures with: air.

10.4. Conditions to avoid

Avoid overheating. Avoid bunching of electrostatic charges. Avoid all sources of ignition.

CYCLOHEXANONE
Avoid exposure to: sources of heat,naked flames.

4-HYDROXY-4-METHYLPENTAN-2-ONE
Avoid exposure to: light,sources of heat,naked flames.

N-BUTYL ACETATE
Avoid exposure to: moisture,sources of heat,naked flames.

10.5. Incompatible materials

2-METHOXY-1-METHYLETHYL ACETATE
Incompatible with: oxidising substances,strong acids,alkaline metals.

N-BUTYL ACETATE
Incompatible with: water,nitrates,strong oxidants,acids,alkalis,zinc.

10.6. Hazardous decomposition products

In the event of thermal decomposition or fire, gases and vapours that are potentially dangerous to health may be released.

SECTION 11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.
It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

11.1. Information on toxicological effects

Metabolism, toxicokinetics, mechanism of action and other information
2-METHOXY-1-METHYLETHYL ACETATE
The main route of entry is the skin, whereas the respiratory route is less important due to the low vapour pressure of the product.

Information on likely routes of exposure
2-METHOXY-1-METHYLETHYL ACETATE
WORKERS: inhalation; contact with the skin.

4-HYDROXY-4-METHYLPENTAN-2-ONE
WORKERS: inhalation; contact with the skin.

N-BUTYL ACETATE
WORKERS: inhalation; contact with the skin.

Delayed and immediate effects as well as chronic effects from short and long-term exposure
2-METHOXY-1-METHYLETHYL ACETATE
Above 100 ppm causes irritation of the eye, nose and oropharynx mucous membranes. At 1000 ppm, disturbance of equilibrium and severe eye irritation can be noticed. Clinical and biological examinations carried out on exposed volunteers revealed no anomalies. Acetate produces greater skin and eye irritation with direct contact. No chronic effects on humans have been reported (INCR, 2010).

4-HYDROXY-4-METHYLPENTAN-2-ONE
Acute toxicity causes irritation of the eyes, nose and throat in humans at 100 ppm (476 mg/kg) and pulmonary disorders at 400 ppm. No chronic effects on humans have been reported. The substance may have a depressive effect on the respiratory centres and cause death from respiratory failure.

N-BUTYL ACETATE
In humans, the substance's vapours cause irritation of the eyes and nose. In the event of repeated exposure, skin irritation, dermatitis (dryness and cracking of the skin) and keratitis appear.

Interactive effects
N-BUTYL ACETATE
A case of acute intoxication been reported involving a 33 year old worker while cleaning a tank with a preparation containing xylenes, butyl acetate and ethylene glycol acetate. The person had irritation of the conjunctiva and upper respiratory tract, drowsiness and motor coordination disorders, which disappeared within 5 hours. The symptoms are attributed to poisoning by mixed xylenes and butyl acetate, with a possible synergistic effect responsible for the neurological effects. Cases of vacuolar keratitis are reported in workers exposed to a mixture of butyl acetate and isobutanol vapours, but with uncertainty concerning the responsibility of a particular solvent (INRC, 2011).

ACUTE TOXICITY
LC50 (Inhalation) of the mixture:> 20 mg/l
LD50 (Oral) of the mixture:1887 mg/kg
LD50 (Dermal) of the mixture:>2000 mg/kg

Amines, coco alkyldimethyl, N-oxides
> 2000 mg/kg Ratto / Rat
LD50 (Oral)

2-METHOXY-1-METHYLETHYL ACETATE
8530 mg/kg Rat
LD50 (Oral)
> 5000 mg/kg Rat
LD50 (Dermal)
> 4345 ppm/6h Ratto / Rat
LC50 (Inhalation)

4-HYDROXY-4-METHYLPENTAN-2-ONE
4000 mg/kg Rat
LD50 (Oral)
> 7600 mg/l Ratto / Rat
LC50 (Inhalation)

CYCLOHEXANONE
1535 mg/kg Ratto / Rat
LD50 (Oral)
1100 mg/kg Coniglio / Rabbit
LD50 (Dermal)

11 mg/l/4h Ratto / Rat (4h)
LC50 (Inhalation)

N-BUTYL ACETATE
> 6400 mg/kg Rat
LD50 (Oral)
> 5000 mg/kg Rabbit
LD50 (Dermal)
21,1 mg/l/4h Rat
LC50 (Inhalation)

BUTYLGLYCOL ACETATE
2000 mg/kg Ratto / Rat
LD50 (Oral)
2000 mg/kg Coniglio / Rabbit
LD50 (Dermal)

SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM
> 2000 mg/kg
LD50 (Oral)
> 2000 mg/kg
LD50 (Dermal)
> 5 mg/l
LC50 (Inhalation)

quaternary ammonium eto sulphate
940 mg/kg Topo / Mouse
LD50 (Oral)

SKIN CORROSION / IRRITATION
Causes skin irritation
SERIOUS EYE DAMAGE / IRRITATION
Causes serious eye damage
RESPIRATORY OR SKIN SENSITISATION
Does not meet the classification criteria for this hazard class
GERM CELL MUTAGENICITY
Does not meet the classification criteria for this hazard class
CARCINOGENICITY
Does not meet the classification criteria for this hazard class
REPRODUCTIVE TOXICITY
Does not meet the classification criteria for this hazard class
STOT - SINGLE EXPOSURE
Does not meet the classification criteria for this hazard class
STOT - REPEATED EXPOSURE
Does not meet the classification criteria for this hazard class
ASPIRATION HAZARD
Does not meet the classification criteria for this hazard class

SECTION 12. Ecological information

This product is dangerous for the environment and the aquatic organisms. In the long term, it have negative effects on aquatic environment.

12.1. Toxicity

quaternary ammonium eto sulphate
M-Factor
Quaternary ammonium compounds, coco alkylethyldimethyl, ethyl sulfates
Acute aquatic toxicity = 1
(according to the Globally Harmonized System (GHS) and Regulation (EC) No 1272/2008)
amines, coco alkyldimethyl
Acute aquatic toxicity = 1
(according to the Globally Harmonized System (GHS) and Regulation (EC) No 1272/2008).

Amines, coco alkyldimethyl,
N-oxides
LC50 - for Fish 12,6 mg/l/96h Salmo gairdneri

EC50 - for Crustacea	2,9 mg/l/48h Daphnia magna

2-METHOXY-1-METHYLETHYL ACETATE

LC50 - for Fish	134 mg/l/96h Pesce, Oncorhynchus mykiss OECD 203
EC50 - for Crustacea	> 500 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants	> 1000 mg/l/72h Selenastrum capricornutum OECD 201
Chronic NOEC for Fish	47,5 mg/l Oryzias latipes 14 gg OECD 204
Chronic NOEC for Crustacea	100 mg/l Dapnia magna 21 gg OECD 202

4-HYDROXY-4-METHYLPENTAN-2-ONE

LC50 - for Fish	> 100 mg/l/96h Fish
EC50 - for Crustacea	> 1000 mg/l/48h Daphnia magna

CYCLOHEXANONE

EC50 - for Crustacea	527 mg/l/96h Fish, Pimephales promelas (96h)
EC50 - for Algae / Aquatic Plants	> 100 mg/l/72h Scenedesmus subspicatus

N-BUTYL ACETATE

LC50 - for Fish	18 mg/l/96h Fish
EC50 - for Crustacea	44 mg/l/48h Daphnia Magna

BUTYLGLYCOL ACETATE

LC50 - for Fish	> 10 mg/l/96h Fish 10-100 mg/kg (48h)
EC50 - for Crustacea	> 100 mg/l/48h Daphnia Magna (24h)
EC50 - for Algae / Aquatic Plants	> 100 mg/l/72h Scenedesmus subspicatus

SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM

LC50 - for Fish	> 1 mg/l/96h ALGHE: TOSSICO: 1< LC/EC/IC50 ≤ 10 mg/l
EC50 - for Crustacea	> 10 mg/l/48h INVERTEBRATI ACQUATICI: TOSSICO: 1 < LC/EC/IC50 ≤ 10 mg/l
EC50 - for Algae / Aquatic Plants	> 100 mg/l/72h PESCE: TOSSICO: 1 < LC/EC/IC50 ≤ 10 mg/l

12.2. Persistence and degradability

quaternary ammonium eto sulphate
Ultimate aerobic biodegradability
Completely biodegradable 71% - 28 d
Method: According to ISO 14593
Unpublished internal reports.

2-METHOXY-1-METHYLETHYL ACETATE

Solubility in water	> 10000 mg/l

Rapidly degradable

4-HYDROXY-4-METHYLPENTAN-2-ONE
Solubility in water 1000 - 10000 mg/l
Rapidly degradable

CYCLOHEXANONE
Solubility in water 0,1 - 100 mg/l
Rapidly degradable

N-BUTYL ACETATE
Solubility in water 1000 - 10000 mg/l

BUTYLGLYCOL ACETATE
Rapidly degradable

SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM
Rapidly degradable

quaternary ammonium eto sulphate
Entirely degradable

12.3. Bioaccumulative potential

2-METHOXY-1-METHYLETHYL ACETATE
Partition coefficient: n-octanol/water 1,2

4-HYDROXY-4-METHYLPENTAN-2-ONE
Partition coefficient: n-octanol/water -0,09

CYCLOHEXANONE
Partition coefficient: n-octanol/water 0,86

N-BUTYL ACETATE
Partition coefficient: n-octanol/water 2,3
BCF 15,3

BUTYLGLYCOL ACETATE
Partition coefficient: n-octanol/water 1,51

12.4. Mobility in soil

CYCLOHEXANONE

Partition coefficient: soil/water	1,18

N-BUTYL ACETATE

Partition coefficient: soil/water	< 3

SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM

Partition coefficient: soil/water	1,78

12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

12.6. Other adverse effects

Information not available

SECTION 13. Disposal considerations

13.1. Waste treatment methods

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.
Waste transportation may be subject to ADR restrictions.
CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

SECTION 14. Transport information

14.1. UN number

ADR / RID, IMDG, IATA:	1210

14.2. UN proper shipping name

ADR / RID:	PRINTING INK or PRINTING INK RELATED MATERIAL
IMDG:	PRINTING INK or PRINTING INK RELATED MATERIAL

IATA:	PRINTING INK or PRINTING INK RELATED MATERIAL

14.3. Transport hazard class(es)

ADR / RID:	Class: 3	Label: 3
IMDG:	Class: 3	Label: 3
IATA:	Class: 3	Label: 3

14.4. Packing group

ADR / RID, IMDG, IATA:	III

14.5. Environmental hazards

ADR / RID:	NO
IMDG:	NO
IATA:	NO

14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 30	Limited Quantities: 5 L	Tunnel restriction code: (D/E)
	Special Provision: -		
IMDG:	EMS: F-E, S-D	Limited Quantities: 5 L	
IATA:	Cargo:	Maximum quantity: 220 L	Packaging instructions: 366
	Pass.:	Maximum quantity: 60 L	Packaging instructions: 355
	Special Instructions:	A3, A72, A192	

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Information not relevant

SECTION 15. Regulatory information

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

Seveso Category - Directive 2012/18/EC: P5c

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

Product
Point 3 - 40

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

Substances subject to authorisarion (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

15.2. Chemical safety assessment

No chemical safety assessment has been processed for the mixture and the substances it contains.

SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Flam. Liq. 3	Flammable liquid, category 3
Acute Tox. 4	Acute toxicity, category 4
Asp. Tox. 1	Aspiration hazard, category 1
Eye Dam. 1	Serious eye damage, category 1
Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Aquatic Acute 1	Hazardous to the aquatic environment, acute toxicity, category 1
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic toxicity, category 3
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.

H332	Harmful if inhaled.
H304	May be fatal if swallowed and enters airways.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.

LEGEND:
- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY
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2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
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4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
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10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition

- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

Note for users:
The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.
This document must not be regarded as a guarantee on any specific product property.
The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.
Provide appointed staff with adequate training on how to use chemical products.

Changes to previous review:
The following sections were modified:
03 / 08 / 11 / 12 / 14.