

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Name : Ink cartridge (Yellow)

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

1.3 Details of the supplier of the safety data sheet

563, Takatsuka-Shinden, Matsudo-shi, Chiba, 270-2222, Japan

Seiko Instruments GmbH

Germany

+49-6102-297-0

2.1 Classification of the substance or mixture

Classification

H302: Harmful if swallowed.

H312: Harmful in contact with skin.

H318: Causes serious eye damage.

<1999/45/EC >

Harmful

R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.

Irritant

R41: Risk of serious damage to eyes.

<Regulation (EC) No. 1272/2008>

Hazard pictograms



Signal word:

Danger

Hazard statements

Harmful if swallowed or in contact with skin.

Causes serious eye damage.

Precautionary statements

Prevention:

Do not eat, drink or smoke when using this product

Wear eye protection/ face protection.

Wear protective gloves/ protective clothing.

Response:

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

IF ON SKIN: Wash with plenty of water. Call a POISON CENTER or doctor/ physician if you feel unwell.

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/

physician.

Hazardous components which must be listed on the label:

2-Butoxyethyl acetate

N-Methyl-2-pyrrolidone

2.3 Other hazards

Vapours may form explosive mixture with air.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Main Ingredients	Content(%)	CAS-No.	EC-No.	Classification (67/548/EEC)	Classification (REGULATION (EC) No 1272/2008)
2-Butoxyethyl acetate	80-90	112-07-2	203-933-3	Xn; R20/21/22	Acute Tox. 4; H302 Acute Tox. 4; H312 Acute Tox. 4; H332
N-Methyl-2-pyrrolidone	<5	872-50-4	212-828-1	Repr.Cat.2; R61 Xi; R36/37/38	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Repr. 1B; H360D STOT SE 3; H335

Other components (listed on EINECS, NLP or ELINCS) are not hazardous according to the directives mentioned above.

4. FIRST-AID MEASURES

4.1 Description of first aid measures

General advice:	In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt seek medical advice.
Protection of first-aiders:	First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists.
If inhaled:	If inhaled, remove to fresh air. Get medical attention if symptoms occur.
In case of skin contact:	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Thoroughly clean shoes before reuse.
In case of eye contact:	Flush eyes with water as a precaution. Get medical attention if irritation develops and persists.
If swallowed:	If swallowed, DO NOT induce vomiting. Get medical attention. Rinse mouth thoroughly with water

4.2 Most important symptoms and effects, both acute and delayed

Risks:	Harmful in contact with skin. May damage the unborn child.
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4.3 Indication of any immediate medical attention and special treatment needed

Treatment:	Treat symptomatically and supportively
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5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:	Water spray Alcohol-resistant foam Dry chemical Carbon dioxide (CO2)
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Unsuitable Extinguishing Media

High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting:	Do not use a solid water stream as it may scatter and spread fire. Flash back possible over considerable distance. Vapours may form explosive mixtures with air. Exposure to combustion products may be a hazard to health.
Hazardous combustion products:	Carbon oxides Nitrogen oxides (NO _x)

5.3 Advice for firefighters

Special protective equipment for firefighters:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.
Specific extinguishing methods:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Cool containers/tanks with water spray. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions:	Remove all sources of ignition. Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.
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6.2 Environmental precautions

Environmental precautions:	Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.
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6.3 Methods and material for containment and cleaning up

Methods for cleaning up:	Non-sparking tools should be used. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Suppress (knock down) gases/vapours/mists with a water spray jet. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.
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6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Technical measures:	See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
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Local/Total ventilation: Use with local exhaust ventilation.
Use only in an area equipped with explosion proof exhaust ventilation.

Advice on safe handling: Do not get on skin or clothing.
Avoid inhalation of vapour or mist.
Do not swallow.
Do not get in eyes.
Handle in accordance with good industrial hygiene and safety practice.
Keep container tightly closed.
Keep away from heat and sources of ignition.
Take precautionary measures against static discharges.
Take care to prevent spills, waste and minimize release to the environment.

Hygiene measures: Ensure that eye flushing systems and safety showers are located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Keep in properly labelled containers. Keep tightly closed.
Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition.

Advice on common storage: Do not store with the following product types:
Strong oxidizing agents
Explosives
Gases

7.3 Specific end use(s)

Specific use(s): No data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
2-Butoxyethyl acetate	112-07-2	TWA	20 ppm 133 mg/m3	2000/39/EC
		STEL	50 ppm 333 mg/m3	2000/39/EC
		TWA	20 ppm	GB EH40
		STEL	50 ppm	GB EH40
N-Methyl-2-pyrrolidone	872-50-4	TWA	10 ppm 40 mg/m3	2009/161/EU
		STEL	20 ppm 80 mg/m3	2009/161/EU
		TWA	10 ppm 40 mg/m3	GB EH40
		STEL	20 ppm 80 mg/m3	GB EH40

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

2-Butoxyethyl acetate: End Use: Workers
Exposure routes: Inhalation
Potential health effects: Long-term systemic effects
Value: 133 mg/m3
End Use: Workers
Exposure routes: Inhalation
Potential health effects: Acute systemic effects
Value: 775 mg/m3

End Use: Workers
Exposure routes: Inhalation
Potential health effects: Acute local effects
Value: 333 mg/m³
End Use: Workers
Exposure routes: Skin contact
Potential health effects: Long-term systemic effects
Value: 102 mg/kg
End Use: Workers
Exposure routes: Skin contact
Potential health effects: Acute systemic effects
Value: 102 mg/kg
End Use: Consumers
Exposure routes: Inhalation
Potential health effects: Long-term systemic effects
Value: 67 mg/m³
End Use: Consumers
Exposure routes: Inhalation
Potential health effects: Acute systemic effects
Value: 499 mg/m³
End Use: Consumers
Exposure routes: Inhalation
Potential health effects: Acute local effects
Value: 166 mg/m³
End Use: Consumers
Exposure routes: Skin contact
Potential health effects: Long-term systemic effects
Value: 36 mg/kg
End Use: Consumers
Exposure routes: Skin contact
Potential health effects: Acute systemic effects
Value: 27 mg/kg
End Use: Consumers
Exposure routes: Ingestion
Potential health effects: Long-term systemic effects
Value: 4.3 mg/kg
End Use: Consumers
Exposure routes: Ingestion
Potential health effects: Acute systemic effects
Value: 18 mg/kg
End Use: Workers
Exposure routes: Inhalation
Potential health effects: Long-term systemic effects
Value: 40 mg/m³
End Use: Workers
Exposure routes: Inhalation
Potential health effects: Acute systemic effects
Value: 80 mg/m³
End Use: Workers
Exposure routes: Skin contact
Potential health effects: Long-term systemic effects
Value: 19.8 mg/kg bw/day
End Use: Workers
Exposure routes: Skin contact
Potential health effects: Acute systemic effects
Value: 208 mg/kg bw/day
End Use: Consumers
Exposure routes: Inhalation
Potential health effects: Long-term systemic effects
Value: 12.5 mg/m³
End Use: Consumers
Exposure routes: Inhalation
Potential health effects: Acute systemic effects

N-Methyl-2-pyrrolidone

Value: 80 mg/m³
 End Use: Consumers
 Exposure routes: Skin contact
 Potential health effects: Long-term systemic effects
 Value: 11.9 mg/kg bw/day
 End Use: Consumers
 Exposure routes: Skin contact
 Potential health effects: Acute systemic effects
 Value: 125 mg/kg bw/day
 End Use: Consumers
 Exposure routes: Ingestion
 Potential health effects: Long-term systemic effects
 Value: 6.3 mg/kg bw/day
 End Use: Consumers
 Exposure routes: Ingestion
 Potential health effects: Acute systemic effects
 Value: 26 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

2-Butoxyethyl acetate :
 Fresh water
 Value: 0.304 mg/l
 Marine water
 Value: 0.0304 mg/l
 Intermittent use/release
 Value: 0.56 mg/l
 Sewage treatment plant
 Value: 90 mg/l
 Fresh water sediment
 Value: 2.03 mg/kg
 Marine sediment
 Value: 0.203 mg/kg
 Soil
 Value: 0.68 mg/kg
 Oral
 Value: 0.06 g/kg

N-Methyl-2-pyrrolidone
 Fresh water
 Value: 0.25 mg/l
 Marine water
 Value: 0.025 mg/l
 Intermittent use/release
 Value: 5 mg/l
 Sewage treatment plant
 Value: 10 mg/l
 Fresh water sediment
 Value: 1.42 mg/kg
 Marine sediment
 Value: 0.142 mg/kg
 Soil
 Value: 0.138 mg/kg
 Oral
 Value: 0.00167 g/kg

8.2 Exposure controls

Engineering measures: Minimize workplace exposure concentrations.
 Use only in an area equipped with explosion proof exhaust ventilation.
 Use with local exhaust ventilation.

Personal protective equipment

Eye protection: Wear the following personal protective equipment:
 Safety goggles

Hand protection

Material: Impervious gloves
 Flame retardant gloves

Remarks:	Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.
Skin and body protection:	Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential. Wear the following personal protective equipment: Flame retardant antistatic protective clothing. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).
Respiratory protection	Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.
Filter type:	Organic vapour type (A)

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	liquid
Color:	yellow
Odor	solvent-like
Odor Threshold:	No data available
pH:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point:	73 °C Method: Seta closed cup
Evaporation rate:	No data available
Flammability (solid, gas)	Not applicable
Upper explosion limit:	No data available
Lower explosion limit:	No data available
Vapour pressure:	No data available
Relative vapour density:	No data available
Density:	0.96-1.00g/cm ³ (25°C)
Water solubility:	No data available
Partition coefficient: n-octanol/water:	Not applicable
Auto-ignition temperature:	No data available
Thermal decomposition:	No data available
Viscosity, dynamic:	No data available
Explosive properties:	Not explosive
Oxidizing properties:	The substance or mixture is not classified as oxidizing.

9.2 Other information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

Not classified as a reactivity hazard.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions: Combustible liquid.
Vapours may form explosive mixture with air.
Can react with strong oxidizing agents.

10.4 Conditions to avoid

Conditions to avoid: Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid: Oxidizing agents

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Information on likely routes of exposure: Inhalation, Skin contact, Ingestion, Eye contact

Acute toxicity: Harmful if swallowed or in contact with skin

Product:

Acute oral toxicity: Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

Acute inhalation toxicity: Acute toxicity estimate : > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Acute dermal toxicity: Acute toxicity estimate: 1,667 mg/kg
Method: Calculation method

Components:

<2-Butoxyethyl acetate>

Acute oral toxicity: LD50 (Rat): 1,880 mg/kg

Acute inhalation toxicity: Acute toxicity estimate : 20 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Expert judgement
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Acute dermal toxicity: LD50 (Rabbit): 1,500 mg/kg

< N-Methyl-2-pyrrolidone>

Acute oral toxicity: LD50 (Rat): 4,150 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity: LC50 (Rat): > 5.1 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity: LD50 (Rat): > 5,000 mg/kg

Skin corrosion/irritation: Not classified based on available information.

Components:

<2-Butoxyethyl acetate>

Species: Rabbit

Result: No skin irritation

< N-Methyl-2-pyrrolidone>

Species:	Rabbit
Method:	OECD Test Guideline 404
Result:	Skin irritation
Serious eye damage/eye irritation:	Causes serious eye damage.
Components:	
<2-Butoxyethyl acetate>	
Species:	Rabbit
Result:	No eye irritation
< N-Methyl-2-pyrrolidone>	
Species:	Rabbit
Result:	Irritation to eyes, reversing within 21 days
Respiratory or skin sensitization:	
Skin sensitisation:	Not classified based on available information.
Respiratory sensitisation:	Not classified based on available information.
Components:	
<2-Butoxyethyl acetate>	
Test Type:	Buehler Test
Exposure routes:	Skin contact
Species:	Guinea pig
Result:	negative
< N-Methyl-2-pyrrolidone>	
Test Type:	Local lymph node assay (LLNA)
Exposure routes:	Skin contact
Species:	Mouse
Method:	OECD Test Guideline 429
Result:	negative
Remarks:	Based on data from similar materials
Germ cell mutagenicity	Not classified based on available information.
Components:	
<2-Butoxyethyl acetate>	
Genotoxicity in vitro:	Test Type: In vitro mammalian cell gene mutation test Result: negative Remarks: Based on data from similar materials
Genotoxicity in vivo:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse Application Route: Intraperitoneal injection Result: negative Remarks: Based on data from similar materials N-
< N-Methyl-2-pyrrolidone>	
Genotoxicity in vitro:	Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: negative
Genotoxicity in vivo:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse Application Route: Ingestion Method: OECD Test Guideline 474 Result: negative
Carcinogenicity	Not classified based on available information.

Components:

<2-Butoxyethyl acetate>

Species: Rat
Application Route: inhalation (vapour)
Exposure time: 2 Years
Result: negative
Remarks: Based on data from similar materials

< N-Methyl-2-pyrrolidone>

Species: Mouse
Application Route: Ingestion
Method: OECD Test Guideline 451
Result: positive
Remarks: The mechanism or mode of action may not be relevant in humans.

Species: Rat
Application Route: inhalation
Result: negative

Reproductive toxicity May damage the unborn child

Components:

<2-Butoxyethyl acetate>

Effects on fertility: Test Type: Two-generation reproduction toxicity study
Species: Mouse
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

Effects on foetal development Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

< N-Methyl-2-pyrrolidone>

Effects on fertility: Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 416
Result: negative

Effects on foetal development Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 414
Result: positive

Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 416
Result: positive

Reproductive toxicity - Assessment Clear evidence of adverse effects on development, based on animal experiments.

STOT - single exposure: Not classified based on available information.

Components:

< N-Methyl-2-pyrrolidone>

Assessment:	May cause respiratory irritation.
STOT - repeated exposure:	Not classified based on available information.
< N-Methyl-2-pyrrolidone>	
Exposure routes:	inhalation (vapour)
Assessment:	No significant health effects observed in animals at concentrations of 1 mg/l/6h/d or less.
Repeated dose toxicity	
Components:	
<2-Butoxyethyl acetate>	
Species:	Rat, male
NOAEL:	< 69 mg/kg
Application Route:	ingestion
Exposure time:	90 d
< N-Methyl-2-pyrrolidone>	
Species:	Rat
NOAEL:	0.5 mg/l
Application Route:	inhalation (vapour)
Exposure time:	90d
Method:	OECD Test Guideline 408
Species:	Rat
NOAEL:	169 - 217 mg/kg
Application Route:	Ingestion
Exposure time:	90d
Method:	OECD Test Guideline 408
Species:	Rabbit
NOAEL:	826 mg/kg
Application Route:	Skin contact
Exposure time:	20d
Aspiration toxicity:	Not classified based on available information.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Components:

<2-Butoxyethyl acetate>

Toxicity to fish:	LC50 (Oncorhynchus mykiss (rainbow trout)): 28 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates:	EC50 (Daphnia magna (Water flea)): 37 mg/l Exposure time: 48 h
Toxicity to algae:	EC50 (Pseudokirchneriella subcapitata (green algae)): 1,570 mg/l Exposure time: 72 h Method: ISO 8692
Toxicity to bacteria:	IC50 : 2,800 mg/l Exposure time: 16 h
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):	EC10: 30.4 mg/l Exposure time: 7 d Species: Ceriodaphnia dubia (water flea)

< N-Methyl-2-pyrrolidone>

Toxicity to fish:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 500 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates:	EC50 (Daphnia magna (Water flea)): > 1,000 mg/l Exposure time: 24 h Method: DIN 38412
Toxicity to algae:	EC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): 600.5 mg/l Exposure time: 72 h
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	NOEC: 12.5 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

12.2 Persistence and degradability

Components:

<2-Butoxyethyl acetate>

Biodegradability:	Result: Readily biodegradable. Biodegradation: 88 % Exposure time: 28 d
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< N-Methyl-2-pyrrolidone>

Biodegradability:	Result: Readily biodegradable Biodegradation: 73 % Exposure time: 28 d Method: OECD Test Guideline 301C
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12.3 Bioaccumulative potential

Components:

<2-Butoxyethyl acetate>

Partition coefficient: n-octanol/water:	log Pow: 1.51
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< N-Methyl-2-pyrrolidone>

Partition coefficient: n-octanol/water:	log Pow: -0.46
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12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Not relevant

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product:	Dispose of in accordance with local regulations. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.
Contaminated packaging:	Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not burn, or use a cutting torch on, the empty drum.

14. TRANSPORT INFORMATION

14.1 UN number

Not regulated as a dangerous good

- 14.2 UN proper shipping name
Not regulated as a dangerous good
- 14.3 Transport hazard class(es)
Not regulated as a dangerous good
- 14.4 Packing group
Not regulated as a dangerous good
- 14.5 Environmental hazards
Not regulated as a dangerous good
- 14.6 Special precautions for user
Not applicable
- 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.
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15. REGULATORY INFORMATION

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Regulation (EC) No 649/2012 of the European Parliament and Not applicable
the Council concerning the export and import of dangerous
chemicals:
REACH - Candidate List of Substances of Very High Concern N-Methyl-2-pyrrolidone
for Authorisation (Article 59).:
Regulation (EC) No 1005/2009 on substances that deplete the Not applicable
ozone layer:
Regulation (EC) No 850/2004 on persistent organic pollutants: Not applicable
Seveso II - Directive 2003/105/EC amending Council Directive Not applicable
96/82/EC on the control of major-accident hazards involving
dangerous substances:
Seveso III: Directive 2012/18/EU of the European Parliament Not applicable
and of the Council on the control of major-accident hazards
involving dangerous substances.
Other regulations: Take note of Dir 94/33/EC on the protection of young people at work.
Take note of Dir 92/85/EEC on the safety and health at work of
pregnant workers.
The components of this product are reported in the following AICS:All ingredients listed or
inventories: exempt.
- 15.2 Chemical Safety Assessment
A Chemical Safety Assessment has not been carried out.
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16. OTHER INFORMATION

Full text of R-Phrases

R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.
R36/37/38: Irritating to eyes, respiratory system and skin.
R61: May cause harm to the unborn child.

Full text of H-Statements

H302: Harmful if swallowed.
H312: Harmful in contact with skin.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H332: Harmful if inhaled.
H335: May cause respiratory irritation.
H360D: May damage the unborn child.

Full text of other abbreviations

Acute Tox. :	Acute toxicity.
Eye Irrit.:	Eye irritation
Repr.:	Reproductive toxicity
Skin Irrit.:	Skin irritation
STOT SE:	Specific target organ toxicity - single exposure.
2000/39/EC:	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
2009/161/EU:	Europe. COMMISSION DIRECTIVE 2009/161/EU establishing a third list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Commission Directive 2000/39/EC
GB EH40:	UK. EH40 WEL - Workplace Exposure Limits.
2000/39/EC / TWA:	Limit Value - eight hours.
2000/39/EC / STEL:	Short term exposure limit.
2009/161/EU / TWA:	Limit Value - eight hours
2009/161/EU / STEL:	Short term exposure limit
GB EH40 / TWA:	Long-term exposure limit (8-hour TWA reference period).
GB EH40 / STEL:	Short-term exposure limit (15-minute reference period).

Further information

Sources of key data used to compile the Safety Data Sheet:

Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.