Trade name: INKU-SF-220-CY 220 ML



Substance number: 360841003

Version: 2/GB Replaces Version: 1 / GB Date revised: 10.11.2016 Print date: 26.06.19

SECTION 1: Identification of the substance/mixture and of the company/undertaking 1.1. Product identifier INKU-SF-220-CY 220 ML 1.2. Relevant identified uses of the substance or mixture and uses advised against Use of the substance/preparation Digital ink **Identified Uses** SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites PROC1 Use in closed process, no likelihood of exposure Use in closed, continuous process with occasional controlled exposure PROC2 Use in closed batch process (synthesis or formulation) PROC3 PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) Transfer of substance or preparation (charging/discharging) from/to vessels/large PROC8a containers at non dedicated facilities PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities Roller application or brushing PROC10

- Non industrial spraying PROC11
- Treatment of articles by dipping and pouring PROC13
- Hand-mixing with intimate contact and only PPE available PROC19
- ERC4 Industrial use of processing aids in processes and products, not becoming part of articles ERC8a

Wide dispersive indoor use of processing aids in open systems

ERC8d Wide dispersive outdoor use of processing aids in open systems

Uses advised against

Consumer uses: Private households (= general public = consumers)

1.3. Details of the supplier of the safety data sheet

Address

SU21

ROLAND DG EUROPE HOLDINGS B.V. Prof. J.H. Bavincklaan 2 1183AT Amstelveen Niederlande Telephone no. +31 20 723 36 70 Information provided Department product safety by / telephone E-mail address of deu-demand-planning@rolanddg.com person responsible for this SDS

1.4. Emergency telephone number

24h: +49 228 19240 (Giftnotruf Bonn), +32 14 57 59 11 (Roland DG Benelux NV) (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (Regulation (EC) No. 1272/2008)

Classification (Regulation (EC) No. 1272/2008)

Safety data sheet in		_	ation (EC)	No 1907	7/2006		S	nku
Trade name: INKU-	SF-220-CY	′ 220 ML						
Substance number:	3608/100	13	Version: Replaces		n: 1/GB		Date revised: Print da	10.11.2016 te: 26.06.19
	30004100		Ropidoot					
		Eye Dam. 1		H318				
2.2. Label elem	ents							
Labelling a	ccording	g to regulati	on (EC) N	lo 127	2/2008			
Hazard picto	ograms							
下系								
Signal word								
Danger								
Hazard state	ements							
H318		Causes serio	ous eye dam	nage.				
Precautiona	ry statem						·····	
P280 P305+P35	1+P338						tion/face protectior inutes. Remove c	
		lenses, if pre	sent and ea	sy to do	. Continue	e rinsing.		
P310		Immediately						
Hazardous (contains	componer			n label ((Regulati	ion (EC) N	lo. 1272/2008)	
00110110		Gamma-Duty	rolactone					
2.3. Other haza No special	hazards ha	ave to be ment	ioned.			بال بالديات		
2.3. Other haza No special SECTION 3: C	hazards ha	ave to be ment	ioned.	<u>on ing</u>	gredien	<u>nts ***</u>		
2.3. Other haza No special SECTION 3: C 3.2. Mixtures	hazards ha	ave to be ment ition/infor	ioned.	<u>on inc</u>	gredien	<u>its ***</u>		
2.3. Other haza No special SECTION 3: C 3.2. Mixtures Chemical ch	hazards ha	ave to be ment ition/infor ation	ioned. mation (<u>on ing</u>	gredien	<u>its ***</u>		
2.3. Other haza No special SECTION 3: C 3.2. Mixtures Chemical ch Ink based of	hazards ha composition maracterization VC-cope	ave to be ment ition/infor ation olymers and on	ioned. mation (<u>on inc</u>	gredien	<u>its ***</u>		
2.3. Other haza No special SECTION 3: C 3.2. Mixtures Chemical ch Ink based of Hazardous i	hazards ha compos naracteriza on VC-copo ngredient	ave to be ment ition/infor ation olymers and on ts ***	ioned. mation (<u>on ing</u>	gredien	<u>its ***</u>		
2.3. Other haza No special SECTION 3: C 3.2. Mixtures Chemical ch Ink based of Hazardous i (2-Ethoxyett CAS No.	hazards ha composition naracteriza on VC-copo ingredient hyl)methyl	ave to be ment ition/infor ation blymers and on ts *** ether 1002-67-1	ioned. mation (<u>on inc</u>	gredien	<u>its ***</u>		
2.3. Other haza No special SECTION 3: C 3.2. Mixtures Chemical ch Ink based of Hazardous i (2-Ethoxyeth CAS No. EINECS no	hazards ha composition naracteriza on VC-copo ingredient hyl)methyl	ave to be ment ition/infor ation blymers and on ts *** ether 1002-67-1 213-690-5	ioned. mation of a solvents					
2.3. Other haza No special SECTION 3: C 3.2. Mixtures Chemical ch Ink based of Hazardous i (2-Ethoxyett CAS No.	hazards ha composition naracteriza on VC-copo ingredient hyl)methyl	ave to be ment ition/infor ation blymers and on ts *** ether 1002-67-1	ioned. mation (<u>on ing</u> <	gredien	9%		
2.3. Other haza No special SECTION 3: C 3.2. Mixtures Chemical ch Ink based of Hazardous i (2-Ethoxyett CAS No. EINECS no Concentrat	hazards ha composition maracterization vC-cope ingredient hyl)methyl o. tion	ave to be ment ition/infor ation blymers and on ts *** ether 1002-67-1 213-690-5 >= tion (EC) No. 1	ioned. mation of a solvents 50	<				
2.3. Other haza No special SECTION 3: C 3.2. Mixtures Chemical ch Ink based of Hazardous i (2-Ethoxyett CAS No. EINECS no Concentrat	hazards ha composition maracterization vC-cope ingredient hyl)methyl o. tion	ave to be ment ition/infor ation blymers and on ts *** ether 1002-67-1 213-690-5 >=	ioned. mation of a solvents 50					
2.3. Other haza No special SECTION 3: C 3.2. Mixtures Chemical ch Ink based of Hazardous i (2-Ethoxyett CAS No. EINECS no Concentrat	hazards ha composition on VC-cope ingredient hyl)methyl o. tion on (Regula	ave to be ment ition/infor ation blymers and on ts *** ether 1002-67-1 213-690-5 >= tion (EC) No. 1 Eye Irrit. 2	ioned. mation of a solvents 50	<				
2.3. Other haza No special SECTION 3: C 3.2. Mixtures Chemical ch Ink based of Hazardous i (2-Ethoxyeth CAS No. EINECS no Concentrat Classificati	hazards ha composition on VC-cope ingredient hyl)methyl on tion on (Regula	ave to be ment ition/infor ation blymers and on ts *** ether 1002-67-1 213-690-5 >= tion (EC) No. 1 Eye Irrit. 2 ylether 112-36-7	ioned. mation of a solvents 50	<				
2.3. Other haza No special SECTION 3: C 3.2. Mixtures Chemical ch Ink based of Hazardous i (2-Ethoxyeth CAS No. EINECS no Concentrat Classificati	hazards ha composition maracterization vC-cope ingredient hyl)methyl b. tion on (Regula lycoldiethy b.	ave to be ment ition/infor ation blymers and on ts *** ether 1002-67-1 213-690-5 >= tion (EC) No. 1 Eye Irrit. 2 ylether	ioned. mation of a solvents 50 1272/2008)	< H319	100	%		
2.3. Other haza No special SECTION 3: C 3.2. Mixtures Chemical ch Ink based of Hazardous i (2-Ethoxyeti CAS No. EINECS no Concentrat Diethyleneg CAS No. EINECS no Concentrat	hazards ha composition paracterization on VC-cope ingredient hyl)methyl b. tion on (Regula lycoldiethy b. tion	ave to be ment ition/infor ation blymers and on ts *** ether 1002-67-1 213-690-5 >= tion (EC) No. 1 Eye Irrit. 2 ylether 112-36-7 203-963-7 >=	ioned. mation of solvents 50 1272/2008)	<				
2.3. Other haza No special SECTION 3: C 3.2. Mixtures Chemical ch Ink based of Hazardous i (2-Ethoxyeti CAS No. EINECS no Concentrat Diethyleneg CAS No. EINECS no Concentrat	hazards ha composition paracterization on VC-cope ingredient hyl)methyl b. tion on (Regula lycoldiethy b. tion	ave to be ment ition/infor ation blymers and on ts *** ether 1002-67-1 213-690-5 >= tion (EC) No. 1 Eye Irrit. 2 ylether 112-36-7 203-963-7 >= tion (EC) No. 1	ioned. mation of solvents 50 1272/2008)	< H319	100	%		
2.3. Other haza No special SECTION 3: C 3.2. Mixtures Chemical ch Ink based of Hazardous i (2-Ethoxyeti CAS No. EINECS no Concentrat Diethyleneg CAS No. EINECS no Concentrat	hazards ha composition paracterization on VC-cope ingredient hyl)methyl b. tion on (Regula lycoldiethy b. tion	ave to be ment ition/infor ation blymers and on ts *** ether 1002-67-1 213-690-5 >= tion (EC) No. 1 Eye Irrit. 2 ylether 112-36-7 203-963-7 >=	ioned. mation of solvents 50 1272/2008)	< H319	100	%		
2.3. Other haza No special SECTION 3: C 3.2. Mixtures Chemical ch Ink based of Hazardous i (2-Ethoxyeth CAS No. EINECS no Concentrat Classificati Diethyleneg CAS No. EINECS no Concentrat Classificati	hazards ha composition on VC-cope ingredient hyl)methyl on (Regula lycoldiethy on (Regula on (Regula	ave to be ment ition/infor ation blymers and on ts *** ether 1002-67-1 213-690-5 >= tion (EC) No. 1 Eye Irrit. 2 ylether 112-36-7 203-963-7 >= tion (EC) No. 1 Eye Irrit. 2	ioned. mation of solvents 50 1272/2008)	< H319	100	%		
2.3. Other haza No special SECTION 3: C 3.2. Mixtures Chemical ch Ink based of Hazardous i (2-Ethoxyeti CAS No. EINECS no Concentrat Classificati Diethyleneg CAS No. EINECS no Concentrat Classificati	hazards ha composition on VC-cope ingredient hyl)methyl o. tion on (Regula lycoldiethy o. tion on (Regula yrolactone	ave to be ment ition/infor ation blymers and on ts *** ether 1002-67-1 213-690-5 >= tion (EC) No. 1 Eye Irrit. 2 ylether 112-36-7 203-963-7 >= tion (EC) No. 1 Eye Irrit. 2 96-48-0	ioned. mation of solvents 50 1272/2008)	< H319	100	%		
2.3. Other haza No special SECTION 3: C 3.2. Mixtures Chemical ch Ink based of Hazardous i (2-Ethoxyeth CAS No. EINECS no Concentrat Classificati Diethyleneg CAS No. EINECS no Concentrat Classificati	hazards ha composition for VC-cope ingredient hyl)methyl b. c. tion on (Regula lycoldiethy b. tion on (Regula yrolactone b.	ave to be ment ition/infor ation blymers and on ts *** ether 1002-67-1 213-690-5 >= tion (EC) No. 1 Eye Irrit. 2 ylether 112-36-7 203-963-7 >= tion (EC) No. 1 Eye Irrit. 2	ioned. mation (solvents 50 1272/2008) 10 1272/2008)	< H319	100	%		

Trade name: INKU-SF-220-CY 220 ML

		Version: 2 / GB		Date revised:	10.11.2016
Substance number: 3	360841003	Replaces Version	: 1 / GB	Print da	ate: 26.06.19

Classification (Regulation (EC) No. 1272/2008)

Acute Tox. 4	H302
Eye Dam. 1	H318
STOT SE 3	H336

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious place in recovery position and seek medical advice.

After inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

After skin contact

Affected skin should first be dabbed with cotton wool, then washed with plenty of water and a mild cleanser. After contact with skin, wash immediately with plenty of water. In case of contact with skin wash off with warm water. Do not pull solidified product from skin.

After eye contact

Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

After ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

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

Until now no symptoms known so far.

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

Hints for the physician / treatment

Treat symptomatically

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Recommended: alcohol resistant foam, CO2, powders, water spray/mist, Not be used for safety reasons: water jet

5.2. Special hazards arising from the substance or mixture

In the event of fire the following can be released: Carbon monoxide (CO); Carbon dioxide (CO2); dense black smoke; Hydrogen chloride (HCI)

5.3. Advice for firefighters

Special protective equipment for fire-fighting

Cool closed containers exposed to fire with water. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Exclude sources of ignition and ventilate the area. Avoid breathing vapours. Refer to protective measures listed in Sections 7 and 8.

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Version: 2 / GB

Date revised: 10.11.2016 Print date: 26.06.19

Substance number: 360841003

Replaces Version: 1 / GB

6.2. Environmental precautions

Do not allow to enter drains or waterways. If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations.

6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13). Clean preferably with a detergent - avoid use of solvents.

6.4. Reference to other sections

Information regarding Safe handling, see Section 7. Information regarding personal protective measures, see Section 8. Information regarding waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. Mixture may charge electrostatically: always use earthing leads when transferring from one container to another. Operators should wear anti-static footwear and clothing and floors should be of the conducting type. Isolate from sources of heat, sparks and open flame. No sparking tools should be used. Avoid skin and eye contact. Avoid the inhalation of particulates and spray mist arising from the application of this mixture. Smoking, eating and drinking shall be prohibited in application area. For personal protection see Section 8. Never use pressure to empty: container is not a pressure vessel. Always keep in containers of same material as the original one. Comply with the health and safety at work laws. Do not allow to enter drains or water courses.

Advice on protection against fire and explosion

Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air.

Classification of fires / temperature class / Ignition group / Dust explosion class

Classification of fires B (Combustible liquid substances) Temperature class T4

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Requirements for storage rooms and vessels: Electrical installations/working materials must comply with the local applied technological safety standards. Storage rooms in which filling operations take place must have a conducting floor. Store in accordance with national regulation

Hints on storage assembly

Store away from oxidising agents, from strongly alkaline and strongly acid materials.

Further information on storage conditions

Observe label precautions. Store between 15 and 30 °C in a dry, well ventilated place away from sources of heat and direct sunlight. Keep container tightly closed. Keep away from sources of ignition. No smoking. Prevent unauthorised access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3. Specific end use(s)

Digital ink

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Safety data sheet in accordance with	V inku	
Trade name: INKU-SF-220-CY 220 ML		
	Version: 2 / GB	Date revised: 10.11.2016
Substance number: 360841003	Replaces Version: 1 / GB	Print date: 26.06.19
Derived No/Minimal Effect Le	vels (DNEL/DMEL)	
Gamma-butyrolactone		
Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure Route of exposure	Long term inhalative	
Mode of action	Systemic effects	
Concentration	130	mg/m³
Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure Mode of action	dermal Systemic effects	
Concentration	19	mg/kg
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	()
Concentration	28	mg/m³
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure Mode of action	dermal	
Concentration	Systemic effects 8	mg/cm²
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	oral	
Mode of action	Systemic effects	
Concentration	8	mg/kg
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure Route of exposure	Acute inhalative	
Mode of action	Systemic effects	
Concentration	340	mg/m³
Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Acute	
Route of exposure	inhalative	
Mode of action Concentration	Systemic effects 958	mg/m³
Predicted No Effect Concentr		-
Gamma-butyrolactone		
Type of value	PNEC	
Туре	Freshwater	
Concentration	0,056	mg/l



Trade name: INKU-SF-220-CY 220 ML		
Substance number: 360841003	Version: 2 / GB Replaces Version: 1 / GB	Date revised: 10.11.2016 Print date: 26.06.19
	PNEC	
Type of value Type	Saltwater	
Concentration	0,0056	mg/l
Type of value	PNEC	
Туре	Water (intermittent release)	
Concentration	0,56	mg/l
Type of value	PNEC	
Туре	Freshwater sediment	
Concentration	0,24	mg/kg
Type of value	PNEC	
Туре	Marine sediment	
Concentration	0,02	mg/kg
Type of value	PNEC	
Туре	Soil	
Concentration	0,014683	mg/kg
Type of value	PNEC	
Туре	Sewage treatment plant (STP)	
Concentration	452	mg/l

8.2. Exposure controls

Exposure controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

Respiratory protection

If workers are exposed to concentrations above the exposure limit they must use appropriate, certified respirators. Full mask, filter A

Hand protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

For prolonged or repeated handling, use

Appropriate Material	Buty	l rubber	
Material thickness		0,7	mm
Breakthrough time	>	480	min

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

Gloves should be replaced regularly and if there is any sign of damage to the glove material.

Always ensure that gloves are free from defects and that they are stored and used correctly.

The performance or effectiveness of the glove may be reduced by physical/ chemical damage and poor maintenance.

Barrier creams may help to protect the exposed areas of the skin, they should however not be applied once exposure has occurred.

Eye protection

Use safety eyewear designed to protect against splash of liquids.

Body protection

Cotton or cotton/synthetic overalls or coveralls are normally suitable.

SECTION 9: Physical and chemical properties

Safety data sheet in accordance with r	egulation (EC) No 1907/2006	
Trade name: INKU-SF-220-CY 220 ML		
	Version: 2 / GB	Date revised: 10.11.2016
Substance number: 360841003	Replaces Version: 1 / GB	Print date: 26.06.19
9.1. Information on basic physic Form Colour	cal and chemical properties Liquid coloured	
Odour	solvent-like	
Odour threshold Remarks	No data available	
pH value		
Remarks	Not applicable	
Melting point		
Remarks	not determined	
Freezing point		
Remarks	not determined	
Initial boiling point and boiling Value	g range appr. 173	°C
Pressure	1.013 hPa	0
Source	Literature value	
Flash point		
Value Mothod	68 ASTM D 6450 (CCCED)	°C
Method Evaporation rate (ether = 1) :	ASTM D 6450 (CCCFP)	
Remarks	not determined	
Flammability (solid, gas)		
Not applicable		
Upper/lower flammability or e	xplosive limits	
Lower explosion limit Upper explosion limit Source	appr. 2,7 appr. 15,6 Literature value	%(V) %(V)
Vapour pressure		
Value Temperature Method	< 1 20 °C calculated	hPa
Vapour density		
Remarks	not determined	
Density		
Value Temperature Method	0,962 20 °C DIN EN ISO 2811	g/cm³
Solubility in water		
Remarks	partially miscible	
Partition coefficient: n-octano		
Remarks	Not applicable	
Ignition temperature		
Value Source	appr. 174 Literature value	°C
Efflux time		
Value Temperature Method	< 12 20 °C DIN 53211 4 mm	S

Trade name: INKU-SF-220-CY 220 ML



Substance number:		VIL	Version: 2 / GB Replaces Version:	1 / GB	Date revised: 10.11.2016 Print date: 26.06.19
Explosive p	roperties				
evaluation		no			
Oxidising p	roperties				
evaluation		No	ne known		
9.2. Other infor	mation				
Other inform	nation				
The physic	al specifications a	are appro	oximate values and re	fer to the used saf	ety relevant component(s).
SECTION 10:	Stability and	d read	<u>ctivity</u>		
10.1. Reactivity	1				
-		en stored	and handled accordi	ng to prescribed in	structions.
10.2. Chemical	stability				
		storage	and handling conditio	ns (see section 7)	
10.3. Possibilit		•	-	,	
	from oxidising a		rongly alkaline and sti	ongly acid materia	Is in order to avoid
10.4. Condition					
When expo	osed to high temp	eratures	may produce hazard	ous decomposition	products.
10.5. Incompat No hazard			and handled accordi	ng to prescribed in	structions.
10.6. Hazardou	s decomposit	tion pro	oducts		
See chapte	er 5.2 (Firefighting	g measui	res - Special hazards	arising from the su	bstance or mixture).
SECTION 11:	Toxicologic	al info	ormation		
11.1. Informatio					
Acute derma		gicard			
Remarks		Based	on available data, the	e classification crite	eria are not met.
	ational toxicity	20.000			
Remarks		Based	on available data, the	e classification crite	eria are not met.
Skin corros	ion/irritation				
Remarks		Based	on available data, the	e classification crite	eria are not met.
Serious eye	damage/irritat	ion			
evaluation	-	corros	ive		
Remarks		The cla	assification criteria are	e met.	
Sensitizatio	n				
Remarks		Based	on available data, the	e classification crite	eria are not met.
Mutagenicit	У				
Remarks		Based	on available data, the	e classification crite	eria are not met.
Reproductiv	e toxicity	D	and a state of the state of the		
Remarks	- 14.	Based	on available data, the	e classification crite	eria are not met.
Carcinogen	icity	Deced	an available data the	alogoifigation grite	ric are not mot
Remarks	ant Orace Terri		on available data, the	e classification crite	ena are not met.
Specific 1 ar	get Organ Toxi	icity (S	101)		

Single exposure

Trade name: INKU-SF-220-CY 220 ML



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RemarksBased on available data, the classification criteria are not met.Repeated exposureBased on available data, the classification criteria are not met.RemarksBased on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Experience in practice

Exposure to component solvents vapours concentration in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and absorption through the skin. The liquid splashed in the eyes may cause irritation. Causes serious eye damage. Ingestion may cause nausea, diarrhoea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Other information

There are no data available on the mixture itself.

The mixture has been assessed following the additivity method of the GHS/CLP Regulation (EC) No 1272/2008.

SECTION 12: Ecological information

12.1. Toxicity

General information

There are no data available on the mixture itself.Do not allow to enter drains or water courses.The mixture has been assessed following the summation method of the CLP Regulation (EC) No 1272/2008 and is not classified as dangerous for the environment.

12.2. Persistence and degradability

General information

There are no data available on the mixture itself.

12.3. Bioaccumulative potential

General information

There are no data available on the mixture itself.

Partition coefficient: n-octanol/water

Not applicable

12.4. Mobility in soil

Remarks

General information

There are no data available on the mixture itself.

12.5. Results of PBT and vPvB assessment

General information

There are no data available on the mixture itself.

12.6. Other adverse effects

General information

There are no data available on the mixture itself.

SECTION 13: Disposal considerations

Trade name: INKU-SF-220-CY 220 ML

Version: 2 / GB

Replaces Version: 1 / GB

inku

Date revised: 10.11.2016 Print date: 26.06.19

13.1. Waste treatment methods

Substance number: 360841003

Disposal recommendations for the product

Do not allow to enter drains or water courses. Wastes and emptied containers should be classified in accordance with relevant national regulation.

The European Waste Catalogue classification of this product, when disposed of as waste is EWC waste code 08 03 12* waste ink containing dangerous substances If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned.

For further information contact your local waste authority.

Disposal recommendations for packaging

Using information provided in this safety data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers.

Empty containers must be scrapped or reconditioned.

Not emptied containers are hazardous waste (waste code number 150110).

SECTION 14: Transport information

Land transport ADR/RID

- Non-dangerous goods
- 14.1. UN number
- UN -
- 14.2. UN proper shipping name
- 14.3. Transport hazard class(es)

Class	-
Label	-
14.4. Packing group	
Packing group	-
Transport category	0
14.5. Environmental hazards	

Marine transport IMDG/GGVSee

The product does not constitute a hazardous substance in sea transport.

- 14.1. UN number
 - UN -

14.2. UN proper shipping name

- 14.3. Transport hazard class(es) Class
- Subsidiary risk 14.4. Packing group
- Packing group
- 14.5. Environmental hazards
 - no

Air transport ICAO/IATA

The product does not constitute a hazardous substance in air transport.

- 14.1. UN number
 - UN -
- 14.2. UN proper shipping name
- -14.3. Transport hazard class(es) Class
 - Class Subsidiary risk
- 14.4. Packing group

Trade name: INKU-SF-220-CY 220 ML

Version: 2 / GB



Date revised: 10.11.2016 Print date: 26.06.19

Substance number: 360841003

Replaces Version: 1 / GB

Packing group

14.5. Environmental hazards

Information for all modes of transport

14.6. Special precautions for user

Transport within the user's premises:

Always transport in closed containers that are upright and secure.

Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Other information

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code no

SECTION 15: Regulatory information ***

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

VOC ***

VOC	(EU)
VOC	(EU)

% 894.7

q/l

Other information

The product does not contain substances of very high concern (SVHC).

93

Other information

All components are contained in the ECL inventory.

15.2. Chemical safety assessment

For this preparation a chemical safety assessment has not been carried out.

SECTION 16: Other information

Hazard statements listed in Chapter 3

H302Harmful if swallowed.H318Causes serious eye damage.H319Causes serious eye irritation.H336May cause drowsiness or dizziness.

CLP categories listed in Chapter 3

Acute Tox. 4	Acute toxicity, Category 4
Eye Dam. 1	Serious eye damage, Category 1
Eye Irrit. 2	Eye irritation, Category 2
STOT SE 3	Specific target organ toxicity - single exposure, Category 3

Supplemental information

Relevant changes compared with the previous version of the safety data sheet are marked with: *** This information is based on our present state of knowledge. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship. The information in this Safety Data Sheet is based on the present state of knowledge and current legislation.

It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications. The product should not be used for purposes other than those shown in Section 1 without first referring to the supplier and obtaining written handling instructions.

As the specific conditions of use of the product are outside the supplier's control, the user is responsible for ensuring that the requirements of relevant legislation are complied with.

The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation.

Safety	/ data sheet in	accordance with	regulation ((EC) I	No 1907/2006
ource	autu Sheet m		regulation		

Trade name: INKU-SF-220-CY 220 ML



Substance number: 360841003

Version: 2 / GB Replaces Version: 1 / GB

Date revised: 10.11.2016 Print date: 26.06.19

Trade name: INKU-SF-220-MG 220 ML



Substance number: 360841002

Version: 3 / GB Replaces Version: 2 / GB Date revised: 04.04.2016 Print date: 26.06.19

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

1.1. Product identifier

INKU-SF-220-MG 220 ML

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

Use of the substance/preparation

Digital ink	
Identified Uses	
SU3	Industrial uses: Uses of substances as such or in preparations at industrial sites
PROC1	Use in closed process, no likelihood of exposure
PROC2	Use in closed, continuous process with occasional controlled exposure
PROC3	Use in closed batch process (synthesis or formulation)
PROC4	Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5	Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
PROC8a	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
PROC8b	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC10	Roller application or brushing
PROC11	Non industrial spraying
PROC13	Treatment of articles by dipping and pouring
PROC19	Hand-mixing with intimate contact and only PPE available
ERC4	Industrial use of processing aids in processes and products, not becoming part of articles
ERC8a	Wide dispersive indoor use of processing aids in open systems
ERC8d	Wide dispersive outdoor use of processing aids in open systems

Uses advised against

Consumer uses: Private households (= general public = consumers)

1.3. Details of the supplier of the safety data sheet

Address

SU21

ROLAND DG EUROPE HOLDINGS B.V. Prof. J.H. Bavincklaan 2 1183AT Amstelveen Niederlande Telephone no. +31 20 723 36 70 Information provided by / telephone E-mail address of person responsible for this SDS

1.4. Emergency telephone number

24h: +49 228 19240 (Giftnotruf Bonn) , +32 14 57 59 11 (Roland DG Benelux NV) (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (Regulation (EC) No. 1272/2008)

Classification (Regulation (EC) No. 1272/2008)

Safety data sheet i		-	ation (EC)	No 1907/	/2006	😏 Inku
Trade name: INKU-	SF-220-MG	6 220 ML	., .	0 / OD		
	20004400	0	Version:		· 2/CP	Date revised: 04.04.2016 Print date: 26.06.19
Substance number:	36084100	2	Replaces	s version	: 2/GB	Finit date. 20.00.19
		Eye Dam. 1		H318		
2.2. Label elem	ents					
Labelling a	ccording	to regulati	on (EC) N	lo 1272	2/2008	
Hazard picto	ograms					
L.	>					
Signal word						
Danger						
Hazard state	ements	_				
H318		Causes serio	us eye dam	nage.		
Precautiona P280	ry statem		ivo alovos/r	votective	clothing/	eye protection/face protection.
P305+P35	1+P338					r several minutes. Remove contact
P310		lenses, if prea				
	componer					on (EC) No. 1272/2008)
contains	, and a second second	Gamma-buty			nogululi	
2.3. Other haza No special		ive to be menti	oned.			
SECTION 3: C	omposi	ition/infor	mation	on ing	redien	ts ***
3.2. Mixtures						
Chemical ch	naracteriza	ation				
	•	lymers and on	solvents			
Hazardous i	•					
(2-Ethoxyeth CAS No.	nyl)methyl	ether 1002-67-1				
EINECS no		213-690-5				
Concentrat	ion	>=	50	<	100	%
Classificati	on (Regula	tion (EC) No. 1	272/2008)			
		Eye Irrit. 2		H319		
Diethyleneg	lycoldiethy	/lether				
CAS No. EINECS no		112-36-7 203-963-7				
Concentrat		203-903-7	10	<	25	%
Classificati	on (Poquia	tion (EC) No. 1	272/2008)			
Classificall	on (ivegula	Eye Irrit. 2	<i>LI 2/2000)</i>	H319		
-						
Gamma-buty CAS No.	yrolactone	96-48-0				
EINECS no		202-509-5	00 G /			
Registratio Concentrat		01-21194718 >=	39-21 3	<	10	%
		-	-			

Trade name: INKU-SF-220-MG 220 ML



		Version:	3 / GB		Date revised:	04.04.2016
Substance number:	360841002	Replaces	Version:	2 / GB	Print da	ate: 26.06.19

Classification (Regulation (EC) No. 1272/2008)

Acute Tox. 4	H302
Eye Dam. 1	H318
STOT SE 3	H336

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious place in recovery position and seek medical advice.

After inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

After skin contact

Affected skin should first be dabbed with cotton wool, then washed with plenty of water and a mild cleanser. After contact with skin, wash immediately with plenty of water. In case of contact with skin wash off with warm water. Do not pull solidified product from skin.

After eye contact

Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

After ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

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

Until now no symptoms known so far.

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

Hints for the physician / treatment

Treat symptomatically

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Recommended: alcohol resistant foam, CO2, powders, water spray/mist, Not be used for safety reasons: water jet

5.2. Special hazards arising from the substance or mixture

In the event of fire the following can be released: Carbon dioxide (CO2); Carbon monoxide (CO); dense black smoke; Hydrogen chloride (HCI)

5.3. Advice for firefighters

Special protective equipment for fire-fighting

Cool closed containers exposed to fire with water. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Exclude sources of ignition and ventilate the area. Avoid breathing vapours. Refer to protective measures listed in Sections 7 and 8.

Trade name: INKU-SF-220-MG 220 ML

Version: 3 / GB

Date revised: 04.04.2016 Print date: 26.06.19

Substance number: 360841002

Replaces Version: 2 / GB

6.2. Environmental precautions

Do not allow to enter drains or waterways. If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations.

6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13). Clean preferably with a detergent - avoid use of solvents.

6.4. Reference to other sections

Information regarding Safe handling, see Section 7. Information regarding personal protective measures, see Section 8. Information regarding waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. Mixture may charge electrostatically: always use earthing leads when transferring from one container to another. Operators should wear anti-static footwear and clothing and floors should be of the conducting type. Isolate from sources of heat, sparks and open flame. No sparking tools should be used. Avoid skin and eye contact. Avoid the inhalation of particulates and spray mist arising from the application of this mixture. Smoking, eating and drinking shall be prohibited in application area. For personal protection see Section 8. Never use pressure to empty: container is not a pressure vessel. Always keep in containers of same material as the original one. Comply with the health and safety at work laws. Do not allow to enter drains or water courses.

Advice on protection against fire and explosion

Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air.

Classification of fires / temperature class / Ignition group / Dust explosion class

Classification of fires B (Combustible liquid substances) Temperature class T4

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Requirements for storage rooms and vessels: Electrical installations/working materials must comply with the local applied technological safety standards. Storage rooms in which filling operations take place must have a conducting floor. Store in accordance with national regulation

Hints on storage assembly

Store away from oxidising agents, from strongly alkaline and strongly acid materials.

Further information on storage conditions

Observe label precautions. Store between 15 and 30 °C in a dry, well ventilated place away from sources of heat and direct sunlight. Keep container tightly closed. Keep away from sources of ignition. No smoking. Prevent unauthorised access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3. Specific end use(s)

Digital ink

SECTION 8: Exposure controls/personal protection ***

8.1. Control parameters

Safety data sheet in accordance with r	S inku	
Trade name: INKU-SF-220-MG 220 ML		
	Version: 3 / GB	Date revised: 04.04.2016
Substance number: 360841002	Replaces Version: 2 / GB	Print date: 26.06.19
Derived No/Minimal Effect Lev	vels (DNEL/DMEL) ***	
Gamma-butyrolactone		
Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure Mode of action	inhalative Systemia offecto	
Concentration	Systemic effects 130	mg/m³
Concentration	150	IIIg/III-
Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	19	mg/kg
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	28	mg/m³
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	8	mg/cm²
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	oral	
Mode of action	Systemic effects	
Concentration	8	mg/kg
The states		
Type of value	Derived No Effect Level (DNEL)	
Reference group Duration of exposure	Consumer Acute	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	340	mg/m³
		5
Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Acute	
Route of exposure Mode of action	inhalative Systemic offects	
Concentration	Systemic effects 958	mg/m³
Predicted No Effect Concentra	ation (PNEC)	
Gamma-butyrolactone	DNEC	
Type of value	PNEC Freshwater	
Type Concentration	0,056	mg/l
Concentration	0,000	



Trade name: INKU-SF-220-MG 220 ML		
	Version: 3 / GB	Date revised: 04.04.2016
Substance number: 360841002	Replaces Version: 2 / GB	Print date: 26.06.19
Type of value	PNEC	
Туре	Saltwater	
Concentration	0,0056	mg/l
Type of value	PNEC	
Туре	Water (intermittent release)	
Concentration	0,56	mg/l
Type of value	PNEC	
Туре	Freshwater sediment	
Concentration	0,24	mg/kg
Type of value	PNEC	
Туре	Marine sediment	
Concentration	0,02	mg/kg
Type of value	PNEC	
Туре	Soil	
Concentration	0,014683	mg/kg
Type of value	PNEC	
Туре	Sewage treatment plant (STP)	
Concentration	452	mg/l

8.2. Exposure controls

Exposure controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

Respiratory protection

If workers are exposed to concentrations above the exposure limit they must use appropriate, certified respirators. Full mask, filter A

Hand protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

For prolonged or repeated handling, use

Appropriate Material	Butyl r	ubber	
Material thickness	-	0,7	mm
Breakthrough time	>	480	min

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

Gloves should be replaced regularly and if there is any sign of damage to the glove material.

Always ensure that gloves are free from defects and that they are stored and used correctly.

The performance or effectiveness of the glove may be reduced by physical/ chemical damage and poor maintenance.

Barrier creams may help to protect the exposed areas of the skin, they should however not be applied once exposure has occurred.

Eye protection

Use safety eyewear designed to protect against splash of liquids.

Body protection

Cotton or cotton/synthetic overalls or coveralls are normally suitable.

SECTION 9: Physical and chemical properties

Safety data sheet in accordance with r		
Trade name: INKU-SF-220-MG 220 ML		
	Version: 3 / GB	Date revised: 04.04.2016
Substance number: 360841002	Replaces Version: 2 / GB	Print date: 26.06.19
9.1. Information on basic physic Form	cal and chemical properties Liquid coloured	
Colour Odour	solvent-like	
Odour threshold		
Remarks	No data available	
pH value		
Remarks	Not applicable	
Melting point		
Remarks	not determined	
Freezing point		
Remarks	not determined	
Initial boiling point and boiling	• •	
Value Pressure	appr. 173 1.013 hPa	°C
Source	Literature value	
Flash point		
Value	68	°C
Method	ASTM D 6450 (CCCFP)	
Evaporation rate (ether = 1) : Remarks	not determined	
Flammability (solid, gas)	not determined	
Not applicable		
Upper/lower flammability or e	xplosive limits	
Lower explosion limit	appr. 2,7	%(V)
Upper explosion limit Source	appr. 15,6 Literature value	%(V)
Vapour pressure		
Value Temperature	< 1 20 ℃	hPa
Method	calculated	
Vapour density		
Remarks	not determined	
Density		
Value	0,96	g/cm³
Temperature Method	20 °C DIN EN ISO 2811	
Solubility in water		
Remarks	partially miscible	
Partition coefficient: n-octanc	ol/water	
Remarks	Not applicable	
Ignition temperature		
Value	appr. 174	°C
Source Efflux time	Literature value	
Value	< 12	S
Temperature	20 °C	÷
Method	DIN 53211 4 mm	

Trade name: INKU-SF-220-MG 220 ML

Single exposure



Irade name: INKU-SF-220-MG 2201		
	Version: 3 / GB	Date revised: 04.04.2016
Substance number: 360841002	Replaces Version: 2 / GB	Print date: 26.06.19
Explosivo proportios		
Explosive properties evaluation	no	
	10	
Oxidising properties evaluation	None known	
	None known	
9.2. Other information		
Other information		
The physical specifications a	are approximate values and refer to the used s	afety relevant component(s).
SECTION 10: Stability and	d reactivity	
10.1. Reactivity		
•	n stored and handled according to prescribed	instructions.
10.2. Chemical stability		
Stable under recommended	storage and handling conditions (see section	7).
10.3. Possibility of hazardou		
Keep away from oxidising age exothermic reactions.	gents, strongly alkaline and strongly acid mate	rials in order to avoid
10.4. Conditions to avoid		
When exposed to high temp	eratures may produce hazardous decompositi	on products.
10.5. Incompatible materials	n stored and handled according to prescribed	instructions
10.6. Hazardous decomposit See chapter 5.2 (Firefighting	measures - Special hazards arising from the	substance or mixture).
SECTION 11: Toxicologic	al information	
11.1. Information on toxicolo	gical effects	
Acute dermal toxicity		
Remarks	Based on available data, the classification cr	riteria are not met.
Acute inhalational toxicity	5	
Remarks	Based on available data, the classification cr	riteria are not met.
Skin corrosion/irritation		
Remarks	Based on available data, the classification cr	riteria are not met.
Serious eye damage/irritat		
evaluation Remarks	corrosive The classification criteria are met.	
Sensitization		
Remarks	Based on available data, the classification cr	riteria are not met.
Mutagenicity		
Remarks	Based on available data, the classification cr	riteria are not met.
Reproductive toxicity		
Remarks	Based on available data, the classification cr	riteria are not met.
Carcinogenicity		
Remarks	Based on available data, the classification cr	riteria are not met.
Specific Target Organ Toxi	city (STOT)	
	• • • •	

Trade name: INKU-SF-220-MG 220 ML



		Version: 3 / GB		Date revised:	04.04.2016
Substance number:	360841002	Replaces Version:	2 / GB	Print da	ate: 26.06.19

RemarksBased on available data, the classification criteria are not met.Repeated exposure
RemarksBased on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Experience in practice

Exposure to component solvents vapours concentration in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and absorption through the skin. The liquid splashed in the eyes may cause irritation. Causes serious eye damage. Ingestion may cause nausea, diarrhoea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Other information

There are no data available on the mixture itself.

The mixture has been assessed following the additivity method of the GHS/CLP Regulation (EC) No 1272/2008.

SECTION 12: Ecological information

12.1. Toxicity

General information

There are no data available on the mixture itself.Do not allow to enter drains or water courses.The mixture has been assessed following the summation method of the CLP Regulation (EC) No 1272/2008 and is not classified as dangerous for the environment.

12.2. Persistence and degradability

General information

There are no data available on the mixture itself.

12.3. Bioaccumulative potential

General information

There are no data available on the mixture itself.

Partition coefficient: n-octanol/water

Not applicable

12.4. Mobility in soil

Remarks

General information

There are no data available on the mixture itself.

12.5. Results of PBT and vPvB assessment

General information

There are no data available on the mixture itself.

12.6. Other adverse effects

General information

There are no data available on the mixture itself.

SECTION 13: Disposal considerations

Trade name: INKU-SF-220-MG 220 ML

Version: 3 / GB

Replaces Version: 2 / GB



Date revised: 04.04.2016 Print date: 26.06.19

13.1. Waste treatment methods

Substance number: 360841002

Disposal recommendations for the product

Do not allow to enter drains or water courses. Wastes and emptied containers should be classified in accordance with relevant national regulation. The European Waste Catalogue classification of this product, when disposed of as waste is EWC waste code 08 03 12* waste ink containing dangerous substances

If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned.

For further information contact your local waste authority.

Disposal recommendations for packaging

Using information provided in this safety data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers.

Empty containers must be scrapped or reconditioned.

Not emptied containers are hazardous waste (waste code number 150110).

SECTION 14: Transport information

Land transport ADR/RID

- Non-dangerous goods
- 14.1. UN number
 - UN -
- 14.2. UN proper shipping name
- 14.3. Transport hazard class(es)

Class	-
Label	-
14.4. Packing group	
Packing group	-
Transport category	0
14.5. Environmental hazards	

Marine transport IMDG/GGVSee

The product does not constitute a hazardous substance in sea transport.

- 14.1. UN number
 - UN -

14.2. UN proper shipping name

- 14.3. Transport hazard class(es) Class
- Subsidiary risk 14.4. Packing group
- Packing group
- 14.5. Environmental hazards
 - no

Air transport ICAO/IATA

The product does not constitute a hazardous substance in air transport.

- 14.1. UN number
 - UN -
- 14.2. UN proper shipping name
- -14.3. Transport hazard class(es) Class
 - Subsidiary risk
- 14.4. Packing group

Trade name: INKU-SF-220-MG 220 ML

Version: 3 / GB



Date revised: 04.04.2016 Print date: 26.06.19

Substance number: 360841002

Replaces Version: 2 / GB

Packing group

14.5. Environmental hazards

Information for all modes of transport

14.6. Special precautions for user

Transport within the user's premises:

Always transport in closed containers that are upright and secure.

Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Other information

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code no

SECTION 15: Regulatory information ***

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

VOC ***

voc	(EU)
VOC	(EU)

92,47 % 887.7

g/l

Other information

The product does not contain substances of very high concern (SVHC).

Other information

All components are contained in the ECL inventory.

15.2. Chemical safety assessment

For this preparation a chemical safety assessment has not been carried out.

SECTION 16: Other information

Hazard statements listed in Chapter 3

H302Harmful if swallowed.H318Causes serious eye damage.H319Causes serious eye irritation.H336May cause drowsiness or dizziness.

CLP categories listed in Chapter 3

Acute Tox. 4	Acute toxicity, Category 4
Eye Dam. 1	Serious eye damage, Category 1
Eye Irrit. 2	Eye irritation, Category 2
STOT SE 3	Specific target organ toxicity - single exposure, Category 3

Supplemental information

Relevant changes compared with the previous version of the safety data sheet are marked with: *** This information is based on our present state of knowledge. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship. The information in this Safety Data Sheet is based on the present state of knowledge and current legislation.

It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications. The product should not be used for purposes other than those shown in Section 1 without first referring to the supplier and obtaining written handling instructions.

As the specific conditions of use of the product are outside the supplier's control, the user is responsible for ensuring that the requirements of relevant legislation are complied with.

The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation.

Safety	/ data sheet in	accordance with	regulation ((EC)	No 1907/2006
Juiot	, aata onoot m		- ogalation (

Trade name: INKU-SF-220-MG 220 ML



Substance number: 360841002

Version: 3 / GB Replaces Version: 2 / GB Date revised: 04.04.2016 Print date: 26.06.19

Trade name: INKU-SF-220-YE 220 ML



Substance number: 360841001

Version: 2 / GB Replaces Version: 1 / GB Date revised: 26.07.2018 Print date: 26.06.19

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

1.1. Product identifier

INKU-SF-220-YE 220 ML

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

Use of the substance/preparation

al uses: Uses of substances as such or in preparations at industrial sites
closed process, no likelihood of exposure
closed, continuous process with occasional controlled exposure
closed batch process (synthesis or formulation)
batch and other process (synthesis) where opportunity for exposure arises
or blending in batch processes for formulation of preparations and articles age and/or significant contact)
r of substance or preparation (charging/discharging) from/to vessels/large ers at non dedicated facilities
r of substance or preparation (charging/discharging) from/to vessels/large ers at dedicated facilities
pplication or brushing
ustrial spraying
ent of articles by dipping and pouring
ixing with intimate contact and only PPE available
al use of processing aids in processes and products, not becoming part of
spersive indoor use of processing aids in open systems
spersive outdoor use of processing aids in open systems

Uses advised against

Consumer uses: Private households (= general public = consumers)

1.3. Details of the supplier of the safety data sheet

Address

SU21

ROLAND DG EUROPE HOLDINGS B.V. Prof. J.H. Bavincklaan 2 1183AT Amstelveen Niederlande Telephone no. +31 20 723 36 70 Information provided by / telephone E-mail address of person responsible for this SDS

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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (Regulation (EC) No. 1272/2008)

Classification (Regulation (EC) No. 1272/2008)

Safety data sheet i		-	ation (EC)	No 1907/	2006	😏 Inku
Frade name: INKU-	SF-220-YE	220 ML	Marajan			
Substance number:	36084100)1	Version: Replaces		: 1/GB	Date revised: 26.07.2018 Print date: 26.06.19
		Eye Dam. 1		H318		
2.2. Label elem	ents					
Labelling a	ccording	to regulati	on (EC) N	lo 1272	/2008	
Hazard picto	ograms					
\wedge						
L.S.	>					
Signal word	l					
Danger						
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H318		Causes serio	ous eye dam	age.		
Precautiona P280	iry statem			roto oti vo	alathia a /a	
P280 P305+P35	1+P338	IF IN EYES:	Rinse cautio	ously with	n water for	eye protection/face protection. several minutes. Remove contact
P310		lenses, if prea	sent and ea	SY to do.	Continue	rinsing. ctor
	comnoner	•				on (EC) No. 1272/2008)
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Trade name: INKU-SF-220-YE 220 ML



Version: 2/GB Date revised: 26.07.2018 Substance number: 360841001 Replaces Version: 1 / GB

Print date: 26.06.19

Classification (Regulation (EC) No. 1272/2008)

Acute Tox. 4	H302
Eye Dam. 1	H318
STOT SE 3	H336

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious place in recovery position and seek medical advice.

After inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

After skin contact

Affected skin should first be dabbed with cotton wool, then washed with plenty of water and a mild cleanser. After contact with skin, wash immediately with plenty of water. In case of contact with skin wash off with warm water. Do not pull solidified product from skin.

After eye contact

Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

After ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

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

Until now no symptoms known so far.

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

Hints for the physician / treatment

Treat symptomatically

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Recommended: alcohol resistant foam, CO2, powders, water spray/mist, Not be used for safety reasons: water jet

5.2. Special hazards arising from the substance or mixture

In the event of fire the following can be released: Carbon monoxide (CO); Carbon dioxide (CO2); dense black smoke; Hydrogen chloride (HCI)

5.3. Advice for firefighters

Special protective equipment for fire-fighting

Cool closed containers exposed to fire with water. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Exclude sources of ignition and ventilate the area. Avoid breathing vapours. Refer to protective measures listed in Sections 7 and 8.

Trade name: INKU-SF-220-YE 220 ML

Version: 2 / GB

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Substance number: 360841001

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6.2. Environmental precautions

Do not allow to enter drains or waterways. If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations.

6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13). Clean preferably with a detergent - avoid use of solvents.

6.4. Reference to other sections

Information regarding Safe handling, see Section 7. Information regarding personal protective measures, see Section 8. Information regarding waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. Mixture may charge electrostatically: always use earthing leads when transferring from one container to another. Operators should wear anti-static footwear and clothing and floors should be of the conducting type. Isolate from sources of heat, sparks and open flame. No sparking tools should be used. Avoid skin and eye contact. Avoid the inhalation of particulates and spray mist arising from the application of this mixture. Smoking, eating and drinking shall be prohibited in application area. For personal protection see Section 8. Never use pressure to empty: container is not a pressure vessel. Always keep in containers of same material as the original one. Comply with the health and safety at work laws. Do not allow to enter drains or water courses.

Advice on protection against fire and explosion

Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air.

Classification of fires / temperature class / Ignition group / Dust explosion class

Classification of fires B (Combustible liquid substances) Temperature class T4

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Requirements for storage rooms and vessels: Electrical installations/working materials must comply with the local applied technological safety standards. Storage rooms in which filling operations take place must have a conducting floor. Store in accordance with national regulation

Hints on storage assembly

Store away from oxidising agents, from strongly alkaline and strongly acid materials.

Further information on storage conditions

Observe label precautions. Store between 15 and 30 °C in a dry, well ventilated place away from sources of heat and direct sunlight. Keep container tightly closed. Keep away from sources of ignition. No smoking. Prevent unauthorised access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3. Specific end use(s)

Digital ink

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Version: 2 / GB Date revised: 26.	de name: INKU-SF-220-YE 220 ML			
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Concentration 958 mg/m³ Predicted No Effect Concentration (PNEC) Gamma-butyrolactone Type of value PNEC				
Gamma-butyrolactone Type of value PNEC			-	mg/m³
Gamma-butyrolactone Type of value PNEC	redicted No	Effect Concer	ntration (PNEC)	
Type of value PNEC			······································	
			PNEC	
		-	-	
Concentration 0,056 mg/l		n		ma/l

Safety data sheet in accordance with regulation (EC) No 1907/2006

Selection



Trade name: INKU-SF-220-YE 220 ML		
	Version: 2 / GB	Date revised: 26.07.2018
Substance number: 360841001	Replaces Version: 1 / GB	Print date: 26.06.19
Type of value	PNEC	
Туре	Saltwater	
Concentration	0,0056	mg/l
Type of value	PNEC	
Туре	Water (intermittent release)	
Concentration	0,56	mg/l
Type of value	PNEC	
Туре	Freshwater sediment	
Concentration	0,24	mg/kg
Type of value	PNEC	
Туре	Marine sediment	
Concentration	0,02	mg/kg
Type of value	PNEC	
Туре	Soil	
Concentration	0,014683	mg/kg
Type of value	PNEC	
Туре	Sewage treatment plant (STP)	
Concentration	452	mg/l
		5

8.2. Exposure controls

Exposure controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

Respiratory protection

If workers are exposed to concentrations above the exposure limit they must use appropriate, certified respirators. Full mask, filter A

Hand protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

For prolonged or repeated handling, use

Appropriate Material	Butyl ri	ubber	
Material thickness		0,7	mm
Breakthrough time	>	480	min

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

Gloves should be replaced regularly and if there is any sign of damage to the glove material.

Always ensure that gloves are free from defects and that they are stored and used correctly.

The performance or effectiveness of the glove may be reduced by physical/ chemical damage and poor maintenance.

Barrier creams may help to protect the exposed areas of the skin, they should however not be applied once exposure has occurred.

Eye protection

Use safety eyewear designed to protect against splash of liquids.

Body protection

Cotton or cotton/synthetic overalls or coveralls are normally suitable.

SECTION 9: Physical and chemical properties

Substance number: 360841001	Version: 2 / GB Replaces Version: 1 /	GB Date revised: 26.07.2018 Print date: 26.06.19
9.1. Information on basic phy	ysical and chemical proper	ties
Form	Liquid	
Colour	coloured	
Odour	solvent-like	
Odour threshold		
Remarks	No data available	
pH value		
Remarks	Not applicable	
Melting point		
Remarks	not determined	
Freezing point		
Remarks	not determined	
Initial boiling point and bo	iling range	
Value	appr. 173	°C
Pressure	1.013 hPa	
Source	Literature value	
Flash point		
Value Method	68 ASTM D 6450 (CCCFP)	°C
	· · · · ·	
Evaporation rate (ether = 1	-	
Remarks	not determined	
Flammability (solid, gas) Not applicable		
Upper/lower flammability o	or explosive limits	
Lower explosion limit	appr. 2,7	%(V)
Upper explosion limit	appr. 15,6	%(V)
Source	Literature value	
Vapour pressure		h Da
Value Temperature	< 1 20 ℃	hPa
Method	calculated	
Vapour density		
Remarks	not determined	
Density		
Value	0,958	g/cm ³
Temperature	20 °C	5
Method	DIN EN ISO 2811	
Solubility in water		
Remarks	partially miscible	
Partition coefficient: n-oct	anol/water	
Remarks	Not applicable	
Ignition temperature		
Value	appr. 174	°C
Source	Literature value	
Efflux time		
Value	< 12 20 °C	S
Temperature Method	20 °C DIN 53211 4 mm	
Modilou		

Trade name: INKU-SF-220-YE 220 ML



Trade name: INKU-SF-220-YE 220 ML



Trade name: INKU-SF-220-YE 220 M		
	Version: 2 / GB	Date revised: 26.07.2018
Substance number: 360841001	Replaces Version: 1 / GB	Print date: 26.06.19
Explosive properties		
evaluation	no	
Oxidising properties		
evaluation	None known	
9.2. Other information		
Other information		
The physical specifications a	are approximate values and refer to the used sa	afety relevant component(s).
SECTION 10: Stability and	d reactivity	
10.1. Reactivity		
•	n stored and handled according to prescribed	instructions.
10.2. Chemical stability		
	storage and handling conditions (see section 7	7).
10.3. Possibility of hazardous	s reactions	
•	gents, strongly alkaline and strongly acid mater	ials in order to avoid
exothermic reactions.		
10.4. Conditions to avoid		
When exposed to high temp	eratures may produce hazardous decomposition	on products.
10.5. Incompatible materials		
No hazardous reactions whe	n stored and handled according to prescribed	instructions.
10.6. Hazardous decomposit		
See chapter 5.2 (Firefighting	measures - Special hazards arising from the s	substance or mixture).
SECTION 11: Toxicologic	al information	
11.1. Information on toxicolo		
Acute dermal toxicity		
Remarks	Based on available data, the classification cri	iteria are not met.
Acute inhalational toxicity		
Remarks	Based on available data, the classification cri	iteria are not met.
Skin corrosion/irritation		
Remarks	Based on available data, the classification cri	iteria are not met.
Serious eye damage/irritati	on	
evaluation	corrosive	
Remarks	The classification criteria are met.	
Sensitization	Deced on evolution data the electricities and	itaria are not mot
Remarks	Based on available data, the classification cri	tena are not met.
Mutagenicity Remarks	Based on available data, the classification cri	itoria aro not mot
Reproductive toxicity	Dased on available data, the classification ch	tena are not met.
Remarks	Based on available data, the classification cri	iteria are not met
Carcinogenicity		
Remarks	Based on available data, the classification cri	iteria are not met.
Specific Target Organ Toxi		······································

Specific Target Organ Toxicity (STOT)

Single exposure

Trade name: INKU-SF-220-YE 220 ML



		Version: 2 / GB	Date revised:	26.07.2018
Substance number: 3	360841001	Replaces Version: 1 / GB	Print da	ate: 26.06.19

RemarksBased on available data, the classification criteria are not met.Repeated exposure
RemarksBased on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Experience in practice

Exposure to component solvents vapours concentration in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and absorption through the skin. The liquid splashed in the eyes may cause irritation. Causes serious eye damage. Ingestion may cause nausea, diarrhoea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Other information

There are no data available on the mixture itself.

The mixture has been assessed following the additivity method of the GHS/CLP Regulation (EC) No 1272/2008.

SECTION 12: Ecological information

12.1. Toxicity

General information

There are no data available on the mixture itself.Do not allow to enter drains or water courses.The mixture has been assessed following the summation method of the CLP Regulation (EC) No 1272/2008 and is not classified as dangerous for the environment.

12.2. Persistence and degradability

General information

There are no data available on the mixture itself.

12.3. Bioaccumulative potential

General information

There are no data available on the mixture itself.

Partition coefficient: n-octanol/water

Not applicable

12.4. Mobility in soil

Remarks

General information

There are no data available on the mixture itself.

12.5. Results of PBT and vPvB assessment

General information

There are no data available on the mixture itself.

12.6. Other adverse effects

General information

There are no data available on the mixture itself.

SECTION 13: Disposal considerations

Trade name: INKU-SF-220-YE 220 ML

Version: 2 / GB

Replaces Version: 1 / GB

inku

Date revised: 26.07.2018 Print date: 26.06.19

13.1. Waste treatment methods

Substance number: 360841001

Disposal recommendations for the product

Do not allow to enter drains or water courses. Wastes and emptied containers should be classified in accordance with relevant national regulation. The European Waste Catalogue classification of this product, when disposed of as waste is EWC waste code 08 03 12* waste ink containing dangerous substances If this product is mixed with other wastes, the original waste product code may no longer apply and the

appropriate code should be assigned. For further information contact your local waste authority.

Disposal recommendations for packaging

Using information provided in this safety data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers.

Empty containers must be scrapped or reconditioned.

Not emptied containers are hazardous waste (waste code number 150110).

SECTION 14: Transport information

Land transport ADR/RID

- Non-dangerous goods
- 14.1. UN number
 - UN -
- 14.2. UN proper shipping name
- 14.3. Transport hazard class(es)

Class	-
Label	-
14.4. Packing group	
Packing group	-
Transport category	0
14.5. Environmental hazards	

Marine transport IMDG/GGVSee

The product does not constitute a hazardous substance in sea transport.

- 14.1. UN number
 - UN -

14.2. UN proper shipping name

- 14.3. Transport hazard class(es) Class
- Subsidiary risk 14.4. Packing group
- Packing group
- 14.5. Environmental hazards
 - no

Air transport ICAO/IATA

The product does not constitute a hazardous substance in air transport.

- 14.1. UN number
 - UN -
- 14.2. UN proper shipping name
- -14.3. Transport hazard class(es) Class
 - Subsidiary risk
- 14.4. Packing group

Trade name: INKU-SF-220-YE 220 ML

Version: 2 / GB



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Substance number: 360841001

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Packing group

14.5. Environmental hazards

Information for all modes of transport

14.6. Special precautions for user

Transport within the user's premises:

Always transport in closed containers that are upright and secure.

Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Other information

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code no

SECTION 15: Regulatory information ***

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

VOC ***

VOC (EU) VOC (EU)

92,56 % 886.8

q/l

Other information

The product does not contain substances of very high concern (SVHC).

Other information

All components are contained in the ECL inventory.

15.2. Chemical safety assessment

For this preparation a chemical safety assessment has not been carried out.

SECTION 16: Other information

Hazard statements listed in Chapter 3

H302Harmful if swallowed.H318Causes serious eye damage.H319Causes serious eye irritation.H336May cause drowsiness or dizziness.

CLP categories listed in Chapter 3

Acute Tox. 4	Acute toxicity, Category 4
Eye Dam. 1	Serious eye damage, Category 1
Eye Irrit. 2	Eye irritation, Category 2
STOT SE 3	Specific target organ toxicity - single exposure, Category 3

Supplemental information

Relevant changes compared with the previous version of the safety data sheet are marked with: *** This information is based on our present state of knowledge. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship. The information in this Safety Data Sheet is based on the present state of knowledge and current legislation.

It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications. The product should not be used for purposes other than those shown in Section 1 without first referring to the supplier and obtaining written handling instructions.

As the specific conditions of use of the product are outside the supplier's control, the user is responsible for ensuring that the requirements of relevant legislation are complied with.

The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation.

Safety	/ data sheet in	accordance with	regulation (EC)	No 1907/2006
Juiot			logalation (1001/2000

Trade name: INKU-SF-220-YE 220 ML



Substance number: 360841001

Version: 2 / GB Replaces Version: 1 / GB Date revised: 26.07.2018 Print date: 26.06.19

Trade name: INKU-SF-220-BK 220 ML



Substance number: 360841004

Version: 1 / GB Replaces Version: - / GB Date revised: 17.04.2015 Print date: 26.06.19

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

1.1. Product identifier

INKU-SF-220-BK 220 ML

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

Use of the substance/preparation

Digital ink	
Identified Uses	
SU3	Industrial uses: Uses of substances as such or in preparations at industrial sites
PROC1	Use in closed process, no likelihood of exposure
PROC2	Use in closed, continuous process with occasional controlled exposure
PROC3	Use in closed batch process (synthesis or formulation)
PROC4	Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5	Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
PROC8a	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
PROC8b	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC10	Roller application or brushing
PROC11	Non industrial spraying
PROC13	Treatment of articles by dipping and pouring
PROC19	Hand-mixing with intimate contact and only PPE available
ERC4	Industrial use of processing aids in processes and products, not becoming part of articles
ERC8a	Wide dispersive indoor use of processing aids in open systems
ERC8d	Wide dispersive outdoor use of processing aids in open systems

Uses advised against

Consumer uses: Private households (= general public = consumers)

1.3. Details of the supplier of the safety data sheet

Address

SU21

ROLAND DG EUROPE HOLDINGS B.V. Prof. J.H. Bavincklaan 2 1183AT Amstelveen Niederlande Telephone no. +31 20 723 36 70 Information provided by / telephone E-mail address of person responsible for this SDS

1.4. Emergency telephone number

24h: +49 228 19240 (Giftnotruf Bonn) , +32 14 57 59 11 (Roland DG Benelux NV) (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (Regulation (EC) No. 1272/2008)

Classification (Regulation (EC) No. 1272/2008)

Safety data sheet ir	n accordance with	regulation (EC) No 1907	/2006		
Trade name: INKU-	SF-220-BK 220 ML					
		Vers	sion: 1/GB			Date revised: 17.04.2015
Substance number:	360841004	Rep	laces Versior	n: -/GB		Print date: 26.06.19
	Eye Da	m. 1	H318			
2.2. Label elem	ents					
Labelling a	ccording to reg	ulation (E	C) No 127	2/2008		
Hazard picto	ograms					
Signal word Danger						
Hazard state	ements					
H318	Causes	s serious eye	damage.			
	ry statements					
P280 P305+P351						tion/face protection. ninutes. Remove contact
	lenses,	if present ar	nd easy to do	. Continu	e rinsing.	indies. Remove contact
P310			POISON CEN			
Hazardous o contains	component(s) to Gamm	be indicate a-butyrolacto		(Regula	tion (EC) I	No. 1272/2008)
No special SECTION 3: C 3.2. Mixtures	hazards have to be omposition/i		on on ing	gredie	<u>nts</u>	
Chemical ch	aracterization					
	on VC-copolymers a	and on solver	nts			
Hazardous i	•					
(2-Ethoxyeth CAS No. EINECS no Concentrat			<	100	%	
Concentrat		>= 50	~	100	70	
Classificatio	on (Regulation (EC) Eye Irri		008) H319			
Gamma-buty						
CAS No. EINECS no	96-48-0 202-50					
Registration		9-5 9471839-21				
Concentrat		>= 10	<	15	%	
Classificatio	on (Regulation (EC)	No. 1272/20	008)			
	Acute	ox. 4	H302			
	Eye Da STOT :		H318 H336			
Diethylened	ycoldiethylether					
CAS No.	112-36	-7				
EINECS no	o. 203-96	3-7				



Trade name: INKU-SF-220-BK 220 ML					
	Version:	1 / GB			Date revised: 17.04.2015
Substance number: 360841004	Replaces	Version	: -/GB		Print date: 26.06.19
Concentration >=	1	<	10	%	
Classification (Regulation (EC) No. 12 Eye Irrit. 2	272/2008)	H319			
SECTION 4: First aid measures					
4.1. Description of first aid measure	es				
General information					
In all cases of doubt, or when sympto to an unconscious person. If unconsc					
After inhalation					
Remove to fresh air, keep patient war artificial respiration.	rm and at re	est. If bre	eathing is i	rregular or sto	opped, administer
After skin contact					
Affected skin should first be dabbed v cleanser. After contact with skin, was wash off with warm water. Do not pull	h immediate	ely with	plenty of w		
After eye contact	-				
Remove contact lenses, irrigate copic minutes and seek immediate medical		ean, fre	sh water, h	olding the ey	elids apart for at least 10
After ingestion If accidentally swallowed rinse the mo immediate medical attention. Keep at					is conscious) and obtain
4.2. Most important symptoms and Until now no symptoms known so far.	•	oth ac	ute and	delayed	
4.3. Indication of any immediate me	dical atte	ention	and spe	cial treatm	ent needed
Hints for the physician / treatment Treat symptomatically					
SECTION 5: Firefighting measu	res				
5.1. Extinguishing media					
Suitable extinguishing media					
Recommended: alcohol resistant foar water jet	n, CO2, pov	wders, w	vater spray	/mist, Not be	used for safety reasons:
5.2. Special hazards arising from th In the event of fire the following can b black smoke; Hydrogen chloride (HCI	e released:				monoxide (CO); dense
5.3. Advice for firefighters					
Special protective equipment for find Cool closed containers exposed to find water courses.	-	-	t allow run	-off from fire	fighting to enter drains or
SECTION 6: Accidental release	measur	es			

6.1. Personal precautions, protective equipment and emergency procedures Exclude sources of ignition and ventilate the area. Avoid breathing vapours. Refer to protective

measures listed in Sections 7 and 8.

Trade name: INKU-SF-220-BK 220 ML

Version: 1 / GB

Date revised: 17.04.2015 Print date: 26.06.19

Substance number: 360841004

Replaces Version: - / GB

6.2. Environmental precautions

Do not allow to enter drains or waterways. If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations.

6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13). Clean preferably with a detergent - avoid use of solvents.

6.4. Reference to other sections

Information regarding Safe handling, see Section 7. Information regarding personal protective measures, see Section 8. Information regarding waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. Mixture may charge electrostatically: always use earthing leads when transferring from one container to another. Operators should wear anti-static footwear and clothing and floors should be of the conducting type. Isolate from sources of heat, sparks and open flame. No sparking tools should be used. Avoid skin and eye contact. Avoid the inhalation of particulates and spray mist arising from the application of this mixture. Smoking, eating and drinking shall be prohibited in application area. For personal protection see Section 8. Never use pressure to empty: container is not a pressure vessel. Always keep in containers of same material as the original one. Comply with the health and safety at work laws. Do not allow to enter drains or water courses.

Advice on protection against fire and explosion

Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air.

Classification of fires / temperature class / Ignition group / Dust explosion class

Classification of fires B (Combustible liquid substances) Temperature class T4

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Requirements for storage rooms and vessels: Electrical installations/working materials must comply with the local applied technological safety standards. Storage rooms in which filling operations take place must have a conducting floor. Store in accordance with national regulation

Hints on storage assembly

Store away from oxidising agents, from strongly alkaline and strongly acid materials.

Further information on storage conditions

Observe label precautions. Store between 15 and 30 °C in a dry, well ventilated place away from sources of heat and direct sunlight. Keep container tightly closed. Keep away from sources of ignition. No smoking. Prevent unauthorised access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3. Specific end use(s)

Digital ink

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Safety data sheet in accordance with		
Trade name: INKU-SF-220-BK 220 ML		
	Version: 1 / GB	Date revised: 17.04.2015
Substance number: 360841004	Replaces Version: - / GB	Print date: 26.06.19
Derived No/Minimal Effect Le	vels (DNEL/DMEL)	
Gamma-butyrolactone		
Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure Route of exposure	Long term inhalative	
Mode of action	Systemic effects	
Concentration	130	mg/m³
Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure Mode of action	dermal	
Concentration	Systemic effects 19	mg/kg
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	28	mg/m³
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure Mode of action	dermal Systemic effects	
Concentration	8	mg/cm²
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	oral	
Mode of action	Systemic effects	
Concentration	8	mg/kg
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Acute inhalative	
Route of exposure Mode of action	Systemic effects	
Concentration	340	mg/m³
Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Acute	
Route of exposure	inhalative	
Mode of action Concentration	Systemic effects 958	mg/m³
Predicted No Effect Concentr	ation (PNEC)	
Gamma-butyrolactone Type of value	PNEC	
Type	Freshwater	
Concentration	0,056	mg/l
		5



Trade name: INKU-SF-220-BK 220 ML	-	
	Version: 1 / GB	Date revised: 17.04.2015
Substance number: 360841004	Replaces Version: - / GB	Print date: 26.06.19
Type of value	PNEC	
Туре	Saltwater	
Concentration	0,0056	mg/l
Type of value	PNEC	
Туре	Water (intermittent release)	
Concentration	0,56	mg/l
Type of value	PNEC	
Туре	Freshwater sediment	
Concentration	0,24	mg/kg
Concontration	0,21	ing/kg
Type of value	PNEC	
Type	Marine sediment	
Concentration	0,02	mg/kg
Type of value	PNEC	
Туре	Soil	
	0.011000	<i>a</i>

Type of value Type	PNEC Soil	
Concentration	0,014683	mg/kg
Type of value	PNEC	
Туре	Sewage treatment plant (STP)	
Concentration	452	mg/l

8.2. Exposure controls

Exposure controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

Respiratory protection

If workers are exposed to concentrations above the exposure limit they must use appropriate, certified respirators. Full mask, filter A

Hand protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

For prolonged or repeated handling, use

Appropriate Material	Buty	l rubber	
Material thickness		0,7	mm
Breakthrough time	>	480	min

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

Gloves should be replaced regularly and if there is any sign of damage to the glove material.

Always ensure that gloves are free from defects and that they are stored and used correctly.

The performance or effectiveness of the glove may be reduced by physical/ chemical damage and poor maintenance.

Barrier creams may help to protect the exposed areas of the skin, they should however not be applied once exposure has occurred.

Eye protection

Use safety eyewear designed to protect against splash of liquids.

Body protection

Cotton or cotton/synthetic overalls or coveralls are normally suitable.

SECTION 9: Physical and chemical properties

Print date: 26.06.19 Substance number: 360841004 Replaces Version: - / GB 9.1. Information on basic physical and chemical properties Form Liquid coloured Colour solvent-like Odour **Odour threshold** Remarks No data available pH value Remarks Not applicable **Melting point** Remarks not determined **Freezing point** Remarks not determined Initial boiling point and boiling range Value °C appr. 173 Pressure 1.013 hPa Source Literature value Flash point Value 68 °C Method ASTM D 6450 (CCCFP) Evaporation rate (ether = 1) : Remarks not determined Flammability (solid, gas) Not applicable Upper/lower flammability or explosive limits Lower explosion limit appr. 2,7 %(V) Upper explosion limit appr. 15,6 %(V) Source Literature value Vapour pressure Value hPa 1 < Temperature 20 °C Method calculated Vapour density Remarks not determined Density Value 0,976 g/cm³ Temperature 20 °C DIN EN ISO 2811 Method Solubility in water Remarks partially miscible Partition coefficient: n-octanol/water Remarks Not applicable Ignition temperature °С Value 174 appr. Source Literature value Efflux time Value 12 s < Temperature 20 °C Method DIN 53211 4 mm

Version: 1/GB

Date revised: 17.04.2015

Safety data sheet in accordance with regulation (EC) No 1907/2006

Trade name: INKU-SF-220-BK 220 ML

Trade name: INKU-SE-220-BK 220 MI

Remarks

Remarks



Trade name: INKU-	SF-220-BK 220 M	L		
		Version: 1 / G	В	Date revised: 17.04.2015
Substance number:	360841004	Replaces Versi	on: - / GB	Print date: 26.06.19
Explosive p	roperties			
evaluation		no		
Oxidising pr	roperties			
evaluation		None known		
9.2. Other infor	mation			
Other inforn	nation			
The physic	al specifications a	re approximate values an	d refer to the used s	safety relevant component(s).
SECTION 10:	Stability and	l reactivity		
10.1. Reactivity		n stored and handled acc	ording to proceriboo	Linetructione
			ording to prescribed	
10.2. Chemical Stable und	-	storage and handling con	ditions (see section	7).
10.3. Possibility Keep away exothermic	from oxidising ag	s reactions ents, strongly alkaline and	d strongly acid mate	erials in order to avoid
10.4. Condition When expo		eratures may produce haz	zardous decomposit	ion products.
10.5. Incompati No hazardo		n stored and handled acc	ording to prescribec	l instructions.
10.6. Hazardou See chapte		on products measures - Special haza	rds arising from the	substance or mixture).
SECTION 11:	Toxicologica	al information		
11.1. Informatio	on on toxicolo	dical effects		
	oxicity (Compoi	•		
Gamma-but		lontoj		
Species	yrolactorie	rat		
LD50		1582	mg/k	g
Method		OECD 401		
Acute derma	al toxicity			
Remarks		Based on available data	, the classification c	riteria are not met.
	ational toxicity	.		
Remarks	• • • •	Based on available data	, the classification c	riteria are not met.
	ion/irritation	Design to a substantial data	()	
Remarks		Based on available data	, the classification c	riteria are not met.
evaluation	damage/irritatio	corrosive		
Remarks		The classification criteria	a are met.	
Sensitizatio	n			
Remarks		Based on available data	, the classification c	riteria are not met.
Mutagenicity	у			
	-	D 1 111 17		

Trade name: INKU-SF-220-BK 220 ML



5 9

Substance number: 360841004 Replaces Version: - / GB Print date: 26.0			Version: 1 / GB	Date revised:	17.04.201
	Substance number:	360841004	Replaces Version: - / GB	Print da	te: 26.06.1

Carcinogenicity	
Remarks	Based on available data, the classification criteria are not met.
Specific Target Organ T	oxicity (STOT)
Single exposure	
Remarks	Based on available data, the classification criteria are not met.
Repeated exposure	
Remarks	Based on available data, the classification criteria are not met.
Aspiration hazard	

Based on available data, the classification criteria are not met.

Experience in practice

Exposure to component solvents vapours concentration in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and absorption through the skin. The liquid splashed in the eyes may cause irritation. Causes serious eye damage. Ingestion may cause nausea, diarrhoea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Other information

There are no data available on the mixture itself. The mixture has been assessed following the additivity method of the GHS/CLP Regulation (EC) No 1272/2008.

SECTION 12: Ecological information

12.1. Toxicity

General information

There are no data available on the mixture itself.Do not allow to enter drains or water courses.The mixture has been assessed following the summation method of the CLP Regulation (EC) No 1272/2008 and is not classified as dangerous for the environment.

12.2. Persistence and degradability

General information

There are no data available on the mixture itself.

12.3. Bioaccumulative potential

General information

There are no data available on the mixture itself.

Partition coefficient: n-octanol/water

Not applicable

12.4. Mobility in soil

Remarks

General information

There are no data available on the mixture itself.

12.5. Results of PBT and vPvB assessment

General information

There are no data available on the mixture itself.

12.6. Other adverse effects

Trade name: INKU-SF-220-BK 220 ML

inku

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Substance number: 360841004

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General information

There are no data available on the mixture itself.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations for the product

Do not allow to enter drains or water courses.

Wastes and emptied containers should be classified in accordance with relevant national regulation. The European Waste Catalogue classification of this product, when disposed of as waste is EWC waste code 08 03 12* waste ink containing dangerous substances If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned.

For further information contact your local waste authority.

Disposal recommendations for packaging

Using information provided in this safety data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers.

Empty containers must be scrapped or reconditioned.

Not emptied containers are hazardous waste (waste code number 150110).

SECTION 14: Transport information

Land transport ADR/RID

Non-dangerous goods

- 14.1. UN number
- UN -

14.2. UN proper shipping name

-	
14.3. Transport hazard class(es)	
Class	-
Label	-
14.4. Packing group	
Packing group	-
Transport category	0
14.5 Environmental hazarde	

14.5. Environmental hazards

Marine transport IMDG/GGVSee

The product does not constitute a hazardous substance in sea transport.

- 14.1. UN number
 - UN -
- 14.2. UN proper shipping name
- 14.3. Transport hazard class(es) Class Subsidiary risk
 14.4. Packing group Packing group
 14.5. Environmental hazards no

Air transport ICAO/IATA

The product does not constitute a hazardous substance in air transport.

- 14.1. UN number
 - UN -
- 14.2. UN proper shipping name



Trade name: INKU-SF	-220-BK 220 ML				
		Version	: 1/GB		Date revised: 17.04.2015
Substance number: 3	60841004	Replace	es Version:	- / GB	Print date: 26.06.19
- 14.3. Transport	hazard class(es)				
Class		-			
Subsidiary ris		-			
14.4. Packing group Packing group		_			
14.5. Environme					
-					
Transport with Always transp	ecautions for use hin the user's prem port in closed conta	r ises: iners that are t			nt of an accident or spillage.
Other information					
14.7. Transport no	in bulk according	to Annex II o	f Marpol an	id the IBC Co	de
SECTION 15: R	egulatory inf	ormation			
15.1. Safety, heal or mixture	th and environ	mental regu	ulations/lo	egislation s	pecific for the substance
VOC					
VOC (EU)		91,95	%		
VOC (EU)		,	897,4	g/l	
Other information	tion				
The product of	loes not contain su	bstances of ve	ry high con	cern (SVHC).	
Other information	tion				
All componen	ts are contained in	the ECL inver	itory.		
15.2. Chemical sa For this prepa	afety assessme aration a chemical s		nent has not	t been carried (out.
SECTION 16: Of	ther information	<u>tion</u>			
Hazard statem	ents listed in Cl	napter 3			
H302		armful if swallo			
H318 H319		auses serious e			
H319 H336		auses serious e ay cause drow			
	s listed in Chap				
Acute Tox. 4	-	ute toxicity, Ca	ategory 4		
Eye Dam. 1	Se	erious eye dam	age, Catego	ory 1	
Eye Irrit. 2 STOT SE 3		e irritation, Ca		- sinale expos	ure, Category 3
Supplemental	•		gan toxiony	enigie expec	
• •		h the previous	version of t	he safetv data	sheet are marked with: ***
This informati guarantee for	on is based on our any specific produ	present state ct properties a	of knowledg nd shall not	ge. However, it establish a leg	should not constitute a gally valid relationship. f knowledge and current
	idance on health	afety and envi	ronmental a	spects of the r	product and should not be

It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications. The product should not be used for purposes other than those shown in Section 1 without first referring

Safety data sheet in accordance with regulation (EC) No 1907/2006			V inku		
Trade name: INKU-SF-220-BK 220 ML					
		Version: 1 / GB		Date revised: 17.04.2015	
Substance number:	360841004	Replaces Version:	- / GB	Print date: 26.06.19	
As the spe for ensurin The inform	g that the requirements of	he product are outside f relevant legislation a fety data sheet does n	e the supplier's on the complied with ot constitute the	control, the user is responsible user's own assessment of	

Г

Trade name: INKU-SF-220-WH 220 ML



Version: 1 / GB Replaces Version: - / GB Date revised: 26.04.2017 Print date: 26.06.19

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

1.1. Product identifier

Substance number: 360841005

INKU-SF-220-WH 220 ML

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

Use of the substance/preparation

Digital ink	
Identified Uses	
SU3	Industrial uses: Uses of substances as such or in preparations at industrial sites
PROC1	Use in closed process, no likelihood of exposure
PROC2	Use in closed, continuous process with occasional controlled exposure
PROC3	Use in closed batch process (synthesis or formulation)
PROC4	Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5	Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
PROC8a	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
PROC8b	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC10	Roller application or brushing
PROC11	Non industrial spraying
PROC13	Treatment of articles by dipping and pouring
PROC19	Hand-mixing with intimate contact and only PPE available
ERC4	Industrial use of processing aids in processes and products, not becoming part of articles
ERC8a	Wide dispersive indoor use of processing aids in open systems
ERC8d	Wide dispersive outdoor use of processing aids in open systems

Uses advised against

Consumer uses: Private households (= general public = consumers)

1.3. Details of the supplier of the safety data sheet

Address

SU21

ROLAND DG EUROPE HOLDINGS B.V. Prof. J.H. Bavincklaan 2 1183AT Amstelveen Niederlande Telephone no. +31 20 723 36 70 Information provided by / telephone E-mail address of person responsible for this SDS

1.4. Emergency telephone number

24h: +49 228 19240 (Giftnotruf Bonn) , +32 14 57 59 11 (Roland DG Benelux NV) (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (Regulation (EC) No. 1272/2008)

Classification (Regulation (EC) No. 1272/2008)

Safety data sheet in		-	ation (EC)	No 1907	/2006	Se luk
Trade name: INKU-	SF-220-W	H 220 ML	\/	4 / 00		
Substance number:	36084100)5	Version: Replaces		n: -/GB	Date revised: 26.04.20 Print date: 26.06.
		Eye Dam. 1		H318		
2.2. Label elem	ents					
Labelling a	ccording	g to regulation	on (EC) N	lo 127	2/2008	
Hazard picto	ograms					
\wedge						
	>					
Signal word						
Danger						
Hazard state	ements					
H318		Causes serio	us eye dam	nage.		
Precautiona	ry statem				- 4 - : <i>(</i>	
P280 P305+P35	1+P338					/eye protection/face protection. or several minutes. Remove contact
50/0		lenses, if pres	sent and ea	isy to do	. Continue	e rinsing.
P310		Immediately				
contains	compone	Gamma-buty		n label (Regulat	ion (EC) No. 1272/2008)
2.3. Other haza No special		ave to be menti	oned.			
SECTION 3: C	ompos	ition/infor	mation	<u>on ing</u>	gredier	<u>nts</u>
3.2. Mixtures						
Chemical ch	naracteriz	ation				
Ink based o	on VC-copo	olymers and on	solvents			
Hazardous i	ngredien	ts				
Diethyleneg	lycoldieth					
CAS No. EINECS no).	112-36-7 203-963-7				
Concentrat		>=	50	<	100	%
Classificati	on (Regula	tion (EC) No. 1	272/2008)			
Classificati	on (rtegula	Eye Irrit. 2	212/2000)	H319		
(2-Ethoxyetl CAS No.	nyl)methyl	ether 1002-67-1				
EINECS no	D.	213-690-5				
Concentrat	tion	>=	1	<	10	%
Classificati	on (Regula	tion (EC) No. 1	272/2008)			
		Eye Irrit. 2		H319		
Gamma-but	vrolactone	•				
CAS No.		96-48-0				
EINECS no		202-509-5	20.04			
Registratio Concentrat		01-21194718 >=	39-21 3	<	10	%
e encondu		-	-			

Trade name: INKU-SF-220-WH 220 ML



Version: 1/GBDate revised: 26.04.2017Substance number: 360841005Replaces Version: -/GBPrint date: 26.06.19

Classification (Regulation (EC) No. 1272/2008)

Acute Tox. 4	H302
Eye Dam. 1	H318
STOT SE 3	H336

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious place in recovery position and seek medical advice.

After inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

After skin contact

Affected skin should first be dabbed with cotton wool, then washed with plenty of water and a mild cleanser. After contact with skin, wash immediately with plenty of water. In case of contact with skin wash off with warm water. Do not pull solidified product from skin.

After eye contact

Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

After ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

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

Until now no symptoms known so far.

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

Hints for the physician / treatment

Treat symptomatically

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Recommended: alcohol resistant foam, CO2, powders, water spray/mist, Not be used for safety reasons: water jet

5.2. Special hazards arising from the substance or mixture

In the event of fire the following can be released: Carbon monoxide (CO); Carbon dioxide (CO2); dense black smoke

5.3. Advice for firefighters

Special protective equipment for fire-fighting

Cool closed containers exposed to fire with water. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Exclude sources of ignition and ventilate the area. Avoid breathing vapours. Refer to protective measures listed in Sections 7 and 8.

Trade name: INKU-SF-220-WH 220 ML

Version: 1 / GB

Date revised: 26.04.2017 Print date: 26.06.19

Substance number: 360841005

Replaces Version: - / GB

6.2. Environmental precautions

Do not allow to enter drains or waterways. If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations.

6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13). Clean preferably with a detergent - avoid use of solvents.

6.4. Reference to other sections

Information regarding Safe handling, see Section 7. Information regarding personal protective measures, see Section 8. Information regarding waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. Mixture may charge electrostatically: always use earthing leads when transferring from one container to another. Operators should wear anti-static footwear and clothing and floors should be of the conducting type. Isolate from sources of heat, sparks and open flame. No sparking tools should be used. Avoid skin and eye contact. Avoid the inhalation of particulates and spray mist arising from the application of this mixture. Smoking, eating and drinking shall be prohibited in application area. For personal protection see Section 8. Never use pressure to empty: container is not a pressure vessel. Always keep in containers of same material as the original one. Comply with the health and safety at work laws. Do not allow to enter drains or water courses.

Advice on protection against fire and explosion

Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air.

Classification of fires / temperature class / Ignition group / Dust explosion class

Classification of firesB (Combustible liquid substances)Temperature classT4

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Requirements for storage rooms and vessels: Electrical installations/working materials must comply with the local applied technological safety standards. Storage rooms in which filling operations take place must have a conducting floor. Store in accordance with national regulation

Hints on storage assembly

Store away from oxidising agents, from strongly alkaline and strongly acid materials.

Further information on storage conditions

Observe label precautions. Store between 15 and 30 °C in a dry, well ventilated place away from sources of heat and direct sunlight. Keep container tightly closed. Keep away from sources of ignition. No smoking. Prevent unauthorised access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3. Specific end use(s)

Digital ink

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Safety data sheet in accordance with	regulation (EC) No 1907/2006	Se luku
Trade name: INKU-SF-220-WH 220 ML		
	Version: 1 / GB	Date revised: 26.04.2017
Substance number: 360841005	Replaces Version: - / GB	Print date: 26.06.19
Derived No/Minimal Effect Le	vels (DNEL/DMEL)	
Gamma-butyrolactone		
Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure Mode of action	inhalative	
Concentration	Systemic effects 130	mg/m³
Concentration	130	IIIg/III°
Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	19	mg/kg
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	28	mg/m³
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	8	mg/cm²
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	oral	
Mode of action	Systemic effects	
Concentration	8	mg/kg
Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Acute	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	340	mg/m³
Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Acute	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	958	mg/m³
Predicted No Effect Concent	ration (PNEC)	
Gamma-butyrolactone		
Type of value	PNEC	
Туре	Freshwater	
Concentration	0,056	mg/l

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Type of value	PNEC	
Туре	Saltwater	
Concentration	0,0056	mg/l
Type of value	PNEC	
Туре	Water (intermittent release)	
Concentration	0,56	mg/l
Type of value	PNEC	
Туре	Freshwater sediment	
Concentration	0,24	mg/kg
Concentration	0,21	119/109
Type of value	PNEC	
Type	Marine sediment	
Concentration	0,02	mg/kg
	-,	
Type of value	PNEC	

Type of value Type Concentration	PNEC Soil 0,014683	mg/kg
Type of value Type Concentration	PNEC Sewage treatment plant (STP) 452	mg/l

8.2. Exposure controls

Exposure controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

Respiratory protection

If workers are exposed to concentrations above the exposure limit they must use appropriate, certified respirators. Full mask, filter A

Hand protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

For prolonged or repeated handling, use

Appropriate Material	Butyl r	ubber	
Material thickness	-	0,7	mm
Breakthrough time	>	480	min

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

Gloves should be replaced regularly and if there is any sign of damage to the glove material.

Always ensure that gloves are free from defects and that they are stored and used correctly.

The performance or effectiveness of the glove may be reduced by physical/ chemical damage and poor maintenance.

Barrier creams may help to protect the exposed areas of the skin, they should however not be applied once exposure has occurred.

Eye protection

Use safety eyewear designed to protect against splash of liquids.

Body protection

Cotton or cotton/synthetic overalls or coveralls are normally suitable.

SECTION 9: Physical and chemical properties

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9.1. Information on basic physi Form	cal and chemical prope	rties
Colour	coloured	
Odour	solvent-like	
Odour threshold		
Remarks	No data available	
pH value		
Remarks	Not applicable	
Melting point		
Remarks	not determined	
Freezing point		
Remarks	not determined	
Initial boiling point and boilin		
Value		°C
Pressure	appr. 173 1.013 hPa	C
Source	Literature value	
Flash point		
	<u></u>	°C
Value Method	68 ASTM D 6450 (CCCFP)	
	ASTIND 0430 (CCCIT)	
Evaporation rate (ether = 1) :		
Remarks	not determined	
Flammability (solid, gas) Not applicable		
Upper/lower flammability or e	xplosive limits	
Lower explosion limit	appr. 2,7	%(V)
Upper explosion limit	appr. 15,6	%(V)
Source	Literature value	
Vapour pressure		
Value	< 1	hPa
Temperature	20 °C	
Method	calculated	
Vapour density		
Remarks	not determined	
Density		
Value	1,101	g/cm ³
Temperature	20 °C	9,011
Method	DIN EN ISO 2811	
Solubility in water		
Remarks	partially miscible	
Partition coefficient: n-octand		
Remarks	Not applicable	
	Not applicable	
Ignition temperature	<i>i – i</i>	
Value	appr. 174	°C
Source	Literature value	
Efflux time		
Value	< 12	S
Temperature	20 °C	
Method	DIN 53211 4 mm	

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Explosive properties		
evaluation	no	
Oxidising properties		
evaluation	None known	
9.2. Other information		
Other information		
	are approximate values and refer to the used	d safety relevant component(s)
SECTION 10: Stability an	d reactivity	
10.1. Reactivity		
	en stored and handled according to prescrib	ed instructions.
10.2. Chemical stability	d storage and handling conditions (see section	nn 7)
	C C C	<i>л</i> і <i>т</i>).
10.3. Possibility of hazardou		starials in order to sucid
exothermic reactions.	agents, strongly alkaline and strongly acid ma	aterials in order to avoid
10.4. Conditions to avoid		
	peratures may produce hazardous decompos	sition products
10.5. Incompatible materials No hazardous reactions wh	Sen stored and handled according to prescrib	ed instructions.
10.6. Hazardous decomposi	tion products	
See chapter 5.2 (Firefightin	g measures - Special hazards arising from th	ne substance or mixture).
SECTION 11: Toxicologic	cal information	
11.1. Information on toxicol	ogical effects	
Acute dermal toxicity		
Remarks	Based on available data, the classification	criteria are not met.
Acute inhalational toxicity	/	
Remarks	Based on available data, the classification	criteria are not met.
Skin corrosion/irritation		
Remarks	Based on available data, the classification	criteria are not met.
Serious eye damage/irrita	tion	
evaluation	corrosive	
Remarks	The classification criteria are met.	
Sensitization		
Remarks	Based on available data, the classification	i criteria are not met.
Mutagenicity	Development of the later development of the	
Remarks	Based on available data, the classification	i criteria are not met.
Reproductive toxicity	Dependien everlieble date (he dependie)	
Remarks	Based on available data, the classification	i criteria are not met.
	Depend on evolupite data the elecetion	oritorio oro pot mot
Remarks	Based on available data, the classification	i chiena are not met.
a cecur larger urgan 10)		

Specific Target Organ Toxicity (STOT)

Single exposure

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RemarksBased on available data, the classification criteria are not met.Repeated exposure
RemarksBased on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Experience in practice

Exposure to component solvents vapours concentration in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and absorption through the skin. The liquid splashed in the eyes may cause irritation. Causes serious eye damage. Ingestion may cause nausea, diarrhoea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Other information

There are no data available on the mixture itself.

The mixture has been assessed following the additivity method of the GHS/CLP Regulation (EC) No 1272/2008.

SECTION 12: Ecological information

12.1. Toxicity

General information

There are no data available on the mixture itself.Do not allow to enter drains or water courses.The mixture has been assessed following the summation method of the CLP Regulation (EC) No 1272/2008 and is not classified as dangerous for the environment.

12.2. Persistence and degradability

General information

There are no data available on the mixture itself.

12.3. Bioaccumulative potential

General information

There are no data available on the mixture itself.

Partition coefficient: n-octanol/water

Not applicable

12.4. Mobility in soil

Remarks

General information

There are no data available on the mixture itself.

12.5. Results of PBT and vPvB assessment

General information

There are no data available on the mixture itself.

12.6. Other adverse effects

General information

There are no data available on the mixture itself.

SECTION 13: Disposal considerations

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13.1. Waste treatment methods

Substance number: 360841005

Disposal recommendations for the product

Do not allow to enter drains or water courses. Wastes and emptied containers should be classified in accordance with relevant national regulation. The European Waste Catalogue classification of this product, when disposed of as waste is EWC waste code 08 03 12* waste ink containing dangerous substances If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned.

For further information contact your local waste authority.

Disposal recommendations for packaging

Using information provided in this safety data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers.

Empty containers must be scrapped or reconditioned.

Not emptied containers are hazardous waste (waste code number 150110).

SECTION 14: Transport information

Land transport ADR/RID

- Non-dangerous goods
- 14.1. UN number
 - UN -
- 14.2. UN proper shipping name
- 14.3. Transport hazard class(es)

Class	-
Label	-
14.4. Packing group	
Packing group	-
Transport category	0
14.5. Environmental hazards	

Marine transport IMDG/GGVSee

The product does not constitute a hazardous substance in sea transport.

- 14.1. UN number
 - UN -
- 14.2. UN proper shipping name
- 14.3. Transport hazard class(es) Class
 - Subsidiary risk
- 14.4. Packing group
- Packing group
- 14.5. Environmental hazards
 - no

Air transport ICAO/IATA

The product does not constitute a hazardous substance in air transport.

- 14.1. UN number
 - UN -
- 14.2. UN proper shipping name
- -14.3. Transport hazard class(es) Class
 - Subsidiary risk
- 14.4. Packing group

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Packing group

14.5. Environmental hazards

Information for all modes of transport

14.6. Special precautions for user

Transport within the user's premises:

Always transport in closed containers that are upright and secure.

Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Other information

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code no

SECTION 15: Regulatory information

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

VOC

VOC	(EU)
VOC	(EU)

74,69 % 822.3

q/l

Other information

The product does not contain substances of very high concern (SVHC).

Other information

All components are contained in the ECL inventory.

15.2. Chemical safety assessment

For this preparation a chemical safety assessment has not been carried out.

SECTION 16: Other information

Hazard statements listed in Chapter 3

H302Harmful if swallowed.H318Causes serious eye damage.H319Causes serious eye irritation.H336May cause drowsiness or dizziness.

CLP categories listed in Chapter 3

Acute Tox. 4	Acute toxicity, Category 4
Eye Dam. 1	Serious eye damage, Category 1
Eye Irrit. 2	Eye irritation, Category 2
STOT SE 3	Specific target organ toxicity - single exposure, Category 3

Supplemental information

Relevant changes compared with the previous version of the safety data sheet are marked with: *** This information is based on our present state of knowledge. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship. The information in this Safety Data Sheet is based on the present state of knowledge and current legislation.

It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications. The product should not be used for purposes other than those shown in Section 1 without first referring to the supplier and obtaining written handling instructions.

As the specific conditions of use of the product are outside the supplier's control, the user is responsible for ensuring that the requirements of relevant legislation are complied with.

The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation.

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