1. IDENTIFICATION OF PRODUCT AND COMPANY

Product Name	**:**	**78000-00103 Ink, black to red (thermochromic ink)**
Use of the substance/preparation:		**Ink for industrial ink jet printers (CIJ-printers)**
Supplier	**:**	**Inkminic logo Technology (GZ) CO., LTD** **Room 1601, No.4 Yichuang Street, Jiulong Town, Huangpu Guangzhou City, Guangdong Province**

2. COMPOSITION / INFORMATION ON INGREDIENTS

2.1 Classification of the mixture

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

Acute oral toxicity	Category 4
Skin Corrosion/irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 1
Germ Cell Mutagenicity	Category 2
Physical hazards: Flammable liquids	Category 2

2.2 Label elements

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

Hazard pictograms

Signal word: Danger

Hazard statements:

H302 Harmful if swallowed
H315 Causes skin irritation
H318 Causes serious eye damage
H341 Suspected of causing genetic defects
H225 Highly flammable liquid and vapour.

Precautionary statements

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/ physician
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P362 - Take off contaminated clothing and wash before reuse
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P233 - Keep container tightly closed
P280 - Wear protective gloves/ eye protection/ face protection

2.3 Other hazards

No information available.

3. HAZARDS IDENTIFICATION

3.1 Description of the mixture :

Mixture of organic solvents consisting of substances listed below with non-hazardous additions.

3.1.2 Hazardous ingredients

Component	EC No	CAS No.	%[Weight]	GHS Classification
Methyl propyl ketone	203-528-1	107-87-9	40-50	Flam. Liq. 2 (H225) Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) STOT SE 3 (H335)
Ethyl alcohol	200-578-6	64-17-5	20-30	Flam. Liq. 2 (H225)
Tetraalkyl ammoniumethylsulfate	269-662-8	68308-64-5	5-10	Skin Irrit. 2 (H315) Aquatic Acute 1 (H400) Acute Tox. 4 (H302) Eye Dam. 1 (H318)
Methyl isobutyl ketone	203-550-1	108-10-1	1-5	(EUH066) Flam. Liq. 2 (H225) STOT SE 3 (H335) Acute Tox. 4 (H332) Eye Irrit. 2 (H319)
Phenol	203-632-7	108-95-2	1-3	Acute Tox. 3 (H301) Acute Tox. 3 (H311) Skin Corr. 1B (H314) STOT RE 2 (H373) Muta. 2 (H341) Acute Tox. 3 (H331)
n-Butyl alcohol	200-751-6	71-36-3	1-5	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Flam. Liq. 3 (H226) STOT SE 3 (H335) STOT SE 3 (H336) Eye Dam. 1 (H318)
n-Propyl acetate	203-686-1	109-60-4	1-5	(EUH066) Flam. Liq. 2 (H225) STOT SE 3 (H336) Eye Irrit. 2 (H319)
Xylenes (o-, m-, p- isomers)	215-535-7	1330-20-7	1-5	Acute Tox. 4 (H312) Skin Irrit. 2 (H315) Flam. Liq. 3 (H226) Acute Tox. 4 (H332)
Isopropyl alcohol	200-661-7	67-63-0	1-5	Flam. Liq. 2 (H225) STOT SE 3 (H336) Eye Irrit. 2 (H319)
Methyl alcohol	200-659-6	67-56-1	0,5<1	Acute Tox. 3 (H301) Acute Tox. 3 (H311) Flam. Liq. 2 (H225) STOT SE 1 (H370) Acute Tox. 3 (H331)
Amines, coco alkyldimethyl	263-020-0	263-020-0	<0,5	Skin Corr. 1B (H314) Aquatic Acute 1 (H400) Acute Tox. 4 (H302) Eye Dam. 1 (H318)

3.2 Additional information

Occupational exposure limits, if available, are listed in Section 8.
For the full text of H-phrases mentioned in this section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General Advice
Show this safety data sheet to the doctor in attendance

Eye Contact
Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention immediately if irritation develops and persists.

Skin Contact
Wash off immediately with soap and plenty of water. Use a mild soap if available. Rinse immediately with plenty of water for at least 15 minutes. Remove contaminated clothing. If irritation develops, get medical attention.

Inhalation
If breathed in, move person into fresh air. If breathing is irregular or stopped, administer artificial respiration. Get medical attention immediately.

Ingestion
If swallowed, DO NOT induce vomiting. Call a physician or Poison Control Centre immediately. Never give anything by mouth to an unconscious person.

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

None under normal use conditions

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

Notes to Physician: Treat symptomatically

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing Media
Foam. Carbon dioxide (CO2). Dry chemical. Water spray. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Extinguishing media which shall not be used for safety reasons
No information available

5.2 Special hazards arising from the mixture:

Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases Burning produces obnoxious and toxic fumes.
Protective equipment for fire fighters:
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Remove all sources of ignition. Ventilate the area. Avoid breathing dust or vapor. Avoid contact with skin, eyes and clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions:

Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods of containment and cleaning up

Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Do not use sparking tools.

6.4 Reference to other sections

See Section 12 for additional information.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Handling

Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Remove and wash contaminated clothing before
re-use. Discard contaminated shoes. When using do not smoke. Take notice of the directions of use on the label. Do not
take internally. Harmful or fatal if swallowed.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice

7.1 Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep out of the reach of children. Keep away from heat and sources of ignition.

7.3 Specific end use(s)

Ink for industrial InkJet-printers

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure limits:

Component	CAS-No.	The United Kingdom	France	Germany
Methyl propyl ketone	107-87-9	STEL: 250 ppm STEL: 895 mg/m3 TWA: 200 ppm TWA: 716 mg/m3	TWA/VME: 200 ppm TWA/VME: 705 mg/m3	No information available
Methyl isobutyl ketone	108-10-1	STEL: 100 ppm STEL: 416 mg/m3 TWA: 50 ppm TWA: 208 mg/m3 Skin	TWA/VME: 20 ppm (restrictive limit) TWA/VME: 83 mg/m3 (restrictive limit) STEL/VLCT: 50 ppm (restrictive limit) STEL/VLCT: 208 mg/m3 (restrictive limit)	TWA/MAK: 20 ppm TWA/MAK: 83 mg/m3 Peak: 40 ppm Peak: 166 mg/m3 TWA/AGW: 20 ppm TWA/AGW: 83 mg/m3 Skin
Phenol	108-95-2	STEL: 6 ppm STEL: 23.4 mg/m3 TWA: 2 ppm TWA: 7.8 mg/m3 Skin	TWA/VME: 2 ppm (restrictive limit) TWA/VME: 8 mg/m3 (restrictive limit) STEL/VLCT: 4 ppm (restrictive limit) STEL/VLCT: 16 mg/m3 (restrictive limit) Skin	TWA/AGW: 2 ppm TWA/AGW: 8 mg/m3 Skin
n-Propyl acetate	109-60-4	STEL: 250 ppm STEL: 1060 mg/m3 TWA: 200 ppm TWA: 849 mg/m3	TWA/VME: 200 ppm TWA/VME: 840 mg/m3	TWA/MAK: 100 ppm TWA/MAK: 420 mg/m3 Peak: 200 ppm Peak: 840 mg/m3

Component	CAS-No.	The United Kingdom	France	Germany
Xylenes (o-, m-, p-isomers)	1330-20-7	STEL: 100 ppm STEL: 441 mg/m3 TWA: 50 ppm TWA: 220 mg/m3 Skin	TWA/VME: 50 ppm (restrictive limit) TWA/VME: 221 mg/m3 (restrictive limit) STEL/VLCT: 100 ppm (restrictive limit) STEL/VLCT: 442 mg/m3 (restrictive limit) Skin	TWA/MAK: 100 ppm TWA/MAK: 440 mg/m3 Peak: 200 ppm (all isomers) Peak: 880 mg/m3 (all isomers) TWA/AGW: 100 ppm TWA/AGW: 440 mg/m3 Skin
Ethyl alcohol	64-17-5	STEL: 3000 ppm STEL: 5760 mg/m3 TWA: 1000 ppm TWA: 1920 mg/m3	TWA/VME: 1000 ppm TWA/VME: 1900 mg/m3 STEL/VLCT: 5000 ppm STEL/VLCT: 9500 mg/m3	TWA/MAK: 500 ppm TWA/MAK: 960 mg/m3 Peak: 1000 ppm Peak: 1920 mg/m3 TWA/AGW: 500 ppm TWA/AGW: 960 mg/m3
Isopropyl alcohol	67-63-0	STEL: 500 ppm STEL: 1250 mg/m3 TWA: 400 ppm TWA: 999 mg/m3	STEL/VLCT: 400 ppm STEL/VLCT: 980 mg/m3	TWA/MAK: 200 ppm TWA/MAK: 500 mg/m3 Peak: 400 ppm Peak: 1000 mg/m3 TWA/AGW: 200 ppm TWA/AGW: 500 mg/m3
n-Butyl alcohol	71-36-3	STEL: 50 ppm STEL: 154 mg/m3 Skin	STEL/VLCT: 50 ppm STEL/VLCT: 150 mg/m3	TWA/MAK: 100 ppm TWA/MAK: 310 mg/m3 Peak: 100 ppm Peak: 310 mg/m3 TWA/AGW: 100 ppm TWA/AGW: 310 mg/m3

8.2 Exposure controls

Engineering Measures

Use ventilation adequate to keep exposures below recommended exposure limits. In case of insufficient ventilation, wear suitable respiratory equipment.

Personal protective equipment

Eye Protection

Ensure that eyewash stations and safety showers are close to the workstation location.
Avoid contact with eyes. Safety glasses with side-shields. Goggles. Face-shield.

Skin Protection

Wear protective gloves/clothing. Solvent-resistant apron and boots.

Hand Protection

Nitrile rubber. Neoprene gloves.

Respiratory Protection

Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust). Respirator with a vapour filter.

Environmental exposure controls

No information available

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Black
Odour	: characteristic
pH	: Not available
Melting/freezing point	: Not available
Initial boiling point/range	: >149°C
Flash point	: 8°C (TCC)
Evaporation rate (n-Butyl Acetate = 1)	: No data available
Flammability (solid, gas)	: No data available
Upper flammability	: No data available
Lower flammability	: No data available
Vapour pressure, mm Hg @ 20 ° C	: No data available
Vapour density (Air = 1)	: Heaviera than air
Relative density (water = 1)	: ~0.87 @ 20° C
Solubility in water, Wt % @ 68 ° F	: No data available
Partition coefficient: n-octanol/water octanol/water	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: Not applicable
Viscosity of Liquid, CPS @ 20° C	: No data available
Explosive properties	: Not available
Oxidizing properties	: Not available

9.2 Other information: The flash point of this product has not been determined. The solvent with the lowest flash point of the mixture was used.

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability:
Stable under normal conditions.

10.3 Possibility of hazardous reactions:
None under normal processing

10.4 Conditions to avoid:
Open flames, heat and sparks and sources of ignition.

10.5 Incompatible materials:
Strong acids. Strong bases. Strong oxidizing agents. Reducing agents

10.6 Hazardous decomposition products:
Thermal decomposition can lead to release of irritating gases and vapours. Carbon dioxide (CO2). Carbon monoxide.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Methyl propyl ketone	1600 mg/kg (Rat)	6500 mg/kg (Rabbit)	
Ethyl alcohol	7060 mg/kg (Rat)		124.7 mg/L (Rat) 4 h
Methyl isobutyl ketone	2080 mg/kg (Rat)	>16000 mg/kg (Rabbit)	8.2 mg/L (Rat) 4 h
Phenol	317 mg/kg (Rat)	525 mg/kg (Rat) 630 mg/kg (Rabbit)	316 mg/m3 (Rat) 4 h
n-Butyl alcohol	790 mg/kg (Rat)	3400 mg/kg (Rabbit)	8000 ppm (Rat) 4 h 17.7 mg/L (Rat) 4 h
n-Propyl acetate	9370 mg/kg (Rat)	>17760 mg/kg (Rabbit)	
Xylenes (o-, m-, p- isomers)	4300 mg/kg (Rat)	>1700 mg/kg (Rabbit)	5000 ppm (Rat) 4 h 47635 mg/L (Rat) 4 h
Isopropyl alcohol	4396 mg/kg (Rat)	12870 mg/kg (Rabbit) 12800 mg/kg (Rat)	72.6 mg/L (Rat) 4 h
Methyl alcohol	5628 mg/kg (Rat)	15800 mg/kg (Rabbit)	64000 ppm (Rat) 4 h 83.2 mg/L (Rat) 4 h
Amines, coco alkyldimethyl	200 mg/kg (Rat)		

This product contains one or more substances which are classified in the EU as carcinogenic, mutagenic and/or reprotoxic

Component	Classification
Phenol	Mutagenicity 2

Irritation No information available

Sensitisation No information available

Mutagenic Effects No information available

Carcinogenic effects No information available

Reproductive Effects No information available

Developmental hazard No information available

STOT - single exposure No information available

STOT - repeated exposure No information available

Aspiration Hazard No information available

12. ECOLOGICAL INFORMATION

12.1 Toxicity:

Component	Algae	Fish	Water Flea
Methyl propyl ketone		96h LC50 Pimephales promelas: 1190 - 1290 mg/L [flow-through]	
Ethyl alcohol		96h LC50 Oncorhynchus mykiss: 12.0 - 16.0 mL/L [static] 96h LC50 Pimephales promelas: 13400 - 15100 mg/L [flow-through] 96h LC50 Pimephales promelas: >100 mg/L [static]	48h LC50 Daphnia magna: 9268 - 14221 mg/L 24h EC50 Daphnia magna: 10800 mg/L
Methyl isobutyl ketone	96h EC50 Pseudokirchneriella subcapitata: 400 mg/L	96h LC50 Pimephales promelas: 496 - 514 mg/L [flow-through]	48h EC50 Daphnia magna: 170 mg/L
Phenol	96h EC50 Pseudokirchneriella subcapitata: 0.0188 - 0.1044 mg/L [static] 72h EC50 Desmodesmus subspicatus: 187 - 279 mg/L [static] 96h EC50 Pseudokirchneriella subcapitata: 46.42 mg/L		48h EC50 Daphnia magna: 10.2 - 15.5 mg/L 48h EC50 Daphnia magna: 4.24 - 10.7 mg/L [static]
n-Butyl alcohol	72h EC50 Desmodesmus subspicatus: 500 mg/L 96h EC50 Desmodesmus subspicatus: 500 mg/L	macrochirus: 100000 - 500000 µg/L [static] 96h LC50 Pimephales promelas: 1730 - 1910 mg/L [static] 96h LC50 Pimephales promelas: 1740 mg/L [flow-through] 96h LC50 Pimephales promelas: 1910000 µg/L [static]	48h EC50 Daphnia magna: 1897 - 2072 mg/L [static] 48h EC50 Daphnia magna: 1983 mg/L
n-Propyl acetate		96h LC50 Pimephales promelas: 56 - 64 mg/L [flow-through] 96h LC50 Pimephales promelas: 56 - 64 mg/L [static]	24h EC50 Daphnia magna: 318mg/L
Isopropyl alcohol	72h EC50 Desmodesmus subspicatus: >1000 mg/L 96h EC50 Desmodesmus subspicatus: >1000 mg/L	96h LC50 Pimephales promelas: 11130 mg/L [static] 96h LC50 Pimephales promelas: 9640 mg/L [flow-through] 96h LC50 Lepomis macrochirus: >1400000 µg/L	48h EC50 Daphnia magna: 13299 mg/L
Methyl alcohol		96h LC50 Lepomis macrochirus: 13500 - 17600 mg/L [flow-through] 96h LC50 Oncorhynchus mykiss: 18 - 20 mL/L [static] 96h LC50 Oncorhynchus mykiss: 19500 - 20700 mg/L [flow-through] 96h LC50 Pimephales promelas: 28200 mg/L [flow-through] 96h LC50 Pimephales promelas: >100 mg/L [static]	
Amines, coco alkyldimethyl		96h LC50 Brachydanio rerio: 0.1 - 1 mg/L [semi-static]	

12.2 Persistence and degradability
No information available

12.3 Bioaccumulative potential

Component	low Pow
Ethyl alcohol	-0.32
Methyl isobutyl ketone	1.19
Phenol	1.47
n-Butyl alcohol	0.785
Xylenes (o-, m-, p- isomers)	2.96
Isopropyl alcohol	0.05
Methyl alcohol	-0.77

12.4 Mobility in soil
No information available

12.5 Results of PBT and vPvB assessment
No information available

12.6 Other adverse effects
No information available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste from Residues / Unused Products:
Dispose of in accordance with local regulations

Contaminated Packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORTATION INFORMATION

	ADR/RID	IMDG	IATA-DGR
14.1. UN number	1210	1210	1210
14.2. UN proper shipping name	PRINTING INK	PRINTING INK	PRINTING INK
14.3. Transport hazard class(es)	3	3	3
14.4. Packing group	II	II	II
14.5. Environmental hazards	Yes	Yes	Yes

Additional Information: **Special provisions** 640 (C)
Tunnel code (D/E)

14.6. Special precautions for user
Transport within 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.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available.

15. REGULATORY INFORMATION

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

International Inventories

Listed on TSCA. For further information, please contact: Manufacturer, importer, supplier

Regulation (EC) No. 1907/2006 (REACH), Article 57

This product does not contain substances of very high concern (Regulation (EC) No. 1907/2006 (REACH), Article 57)

15.2 Chemical Safety Assessment:

No Chemical Safety Assessment has been carried out for this mixture

16. OTHER INFORMATION

Abbreviations and acronyms

ADR: Accord européen sur le transport des merchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road).
CAS#: Chemical Abstract Service Registry Number.
CLP: Classification, Labelling and Packaging of substances and mixtures.
DPD: Dangerous Preparations Directive (Directive 1999/45/EC).
DSD: Dangerous Substances Directive (Directive 67/548/EEC).
EINECS: European Inventory of Existing Commercial chemicals Substances.
EU: European Union.
GHS: Globally Harmonized System of Classification and Labelling of Chemicals.
IATA: International Air Transport Association.
IATA-DGR: Dangerous Goods Regulations by the “International Air Transport Association” (IATA).
ICAO: International Civil Aviation Organization.
ICAO-TI: Technical Instructions by the “International Civil Aviation Organization” (ICAO).
ID_{50} : Dose induced immobility in 50 % animals.
IMDG: International Maritime Code for Dangerous Goods.
LC50: Lethal concentration, 50 percent.
LD50: Lethal concentration, 50 percent.
REACH: Registration, Evaluation, Authorization and Restriction of Chemicals.
RID: Règlement international concernant le transport des merchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous goods by Rail).
TC_{LO}: Lowest published toxic concentration.
TWA: Time Weighted Average.

Full text of H-phrases referred to in Sections 2 and 3

Full text of abbreviated H statements

H225 - Highly flammable liquid and vapor
H335 - May cause respiratory irritation
H332 - Harmful if inhaled
H319 - Causes serious eye irritation
H301 - Toxic if swallowed
H311 - Toxic in contact with skin
H314 - Causes severe skin burns and eye damage
H373 - May cause damage to organs (a,b,c) through prolonged or repeated exposure if inhaled
H341 - Suspected of causing genetic defects if inhaled
H331 - Toxic if inhaled
H336 - May cause drowsiness or dizziness
H312 - Harmful in contact with skin
H315 - Causes skin irritation
H226 - Flammable liquid and vapor
H400 - Very toxic to aquatic life
H302 - Harmful if swallowed
H318 - Causes serious eye damage
H370 - Causes damage to organs (a,b,c) if inhaled

Training advice:

Handling of this mixture is restricted to skilled personnel only.

Key literature references and sources for data

www.ChemADVISOR.com/

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text