

## Safety Data Sheet

## Permanent Marker Ink (Black)

Version: V1.0.0.1

Creation Date: 2020/03/24

Revision Date: 2020/03/24

\*Prepared according to EU regulation No. 2015/830

## 1 Identification of the substance/mixture and of the company/undertaking

## Product identifier

Product Name	Permanent Marker Ink (Black)
Cat No.	
CAS NO.	-
EC NO.	-
Molecular Formula	-

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

Relevant identified uses	Please consult manufacturer.
Uses advised against	Please consult manufacturer.

## Details of the supplier of the Safety Data Sheet

Name of the company	Shanghai NNW New Materials Technology Co., Ltd.
Address of the company	ROOM 402, Building17, Lane 268, Lingxin Road, Changning District Shanghai 200335, CHINA
Post code	200335
Telephone number	021-64476059
Fax number	021-64476096
E-mail address	tech@nnwchina.com

## Emergency phone number

Emergency phone number	13311812200
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## 2 Hazards identification

## CLP classification according to Regulation (EC) No. 1272/2008

Flammable Liquids	Category 2
Sensitization – Skin	Category 1
Reproductive Toxicity	Category 1

## Label elements

Hazard pictograms	
Signal word	<b>Danger</b>

## Hazard statements

H225	Highly flammable liquid and vapour
H317	May cause an allergic skin reaction
H360	May damage fertility or the unborn child

## Precautionary statements

## ◆ Prevention

<b>P210</b>	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
<b>P233</b>	Keep container tightly closed.
<b>P240</b>	Ground and bond container and receiving equipment.
<b>P242</b>	Use non-sparking tools.
<b>P243</b>	Take action to prevent static discharges.
<b>P261</b>	Avoid breathing dust/fume/gas/mist/vapours/spray.
<b>P272</b>	Contaminated work clothing should not be allowed out of the workplace.
<b>P280</b>	Wear protective gloves/protective clothing/eye protection/face protection.

## ◆ Response

<b>P362+P364</b>	Take off contaminated clothing and wash it before reuse.
<b>P303+P361+P353</b>	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].

## ◆ Storage

<b>P405</b>	Store locked up.
<b>P403+P235</b>	Store in a well-ventilated place. Keep cool.

## ◆ Disposal

<b>P501</b>	Dispose of contents/container in accordance with local/regional/national/ international regulations.
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## | Other hazards

<b>EUH208</b>	Contains sensitising substance. May produce an allergic reaction
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## 3 Composition/information on ingredients

Component	Cas No.	EC No.	Index No.	Hazard classification according to CLP	Concentration (weight percent, %)
C.I. Solvent Black 27	12237-22-8	602-672-6	-	Sensitization – Skin, Category 1, H317; Reproductive Toxicity, Category 1, H360; Specific Target Organ Toxicity (Repeated Exposure), Category 2, H373	7~9
Rosin, oligomers	65997-05-9	500-163-2	-	Not Classified	35~45
1,2-Propanediol	57-55-6	200-338-0	-	Not Classified	8
Glycerol	56-81-5	200-289-5	-	Not Classified	18
1-methoxypropan-2-ol	107-98-2	203-539-1	603-064-00-3	Flammable Liquids, Category 3, H226; Specific Target Organ Toxicity (Single Exposure), Category 3, H336	14
Ethanol	64-17-5	200-578-6	603-002-00-5	Flammable Liquids, Category 2, H225	6~18

## 4 First aid measures

## | Description of first aid measures

<b>General advice</b>	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
<b>Skin contact</b>	Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
<b>Ingestion</b>	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
<b>Inhalation</b>	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
<b>Protecting of first-aiders</b>	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

## | Most important symptoms and effects, both acute and delayed

1	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
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**Indication of any immediate medical attention and special treatment needed**

1	Treat symptomatically.
2	Symptoms may be delayed.

**5 Firefighting measures****Extinguishing media**

<b>Suitable extinguishing media</b>	Small Fire: Dry chemical, CO2, water spray or alcohol-resistant foam; Large Fire: Water spray, fog or alcohol-resistant foam
<b>Unsuitable extinguishing media</b>	Do not use a solid water stream as it may scatter or spread fire.

**Specific hazards arising from the substance or mixture**

1	Will form explosive mixtures with air.
2	Fire exposed containers may vent contents through pressure relief valves thereby increasing fire intensity and/ or vapour concentration.
3	Vapours may travel to source of ignition and flash back.
4	Liquid and vapour are flammable.
5	Development of hazardous combustion gases or vapor possible in the event of fire.
6	May expansion or decompose explosively when heated or involved in fire.

**Advice for firefighters**

1	As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

**6 Accidental release measures****Personal precautions, protective equipment and emergency procedures**

1	Avoid breathing vapours and contacting with skin and eye.
2	Beware of vapours accumulating to form explosive concentrations.
3	Vapours can accumulate in low areas.
4	Emergency personnel wear positive pressure self-contained breathing apparatus. Wear protective and anti-static clothing. Wear chemical impermeable gloves.
5	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
6	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
7	Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

**Environmental precautions**

1	Prevent further leakage or spillage if safe to do so.
2	Discharge into the environment must be avoided.

**Methods and materials for containment and cleaning up**

1	Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
2	Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.
3	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

**7 Handling and storage****Precautions for handling**

## ◆ Protective measures

1	Handling is performed in a well ventilated place.
2	Wear suitable protective equipment.
3	Avoid contact with skin and eyes.

## ◆ Measures to prevent fire

1	Use only non-sparking tools.
2	To prevent fire caused by electrostatic discharge steam, equipment on all metal parts should be grounded.
3	Use explosion proof equipment.
4	Keep away from heat/sparks/open flames/ hot surfaces.

## ◆ Measures to prevent aerosol and dust generation

1	Not applicable.
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## ◆ Advice on general occupational hygiene

1	Wash hands and face after using of the substances.
2	Replace the contaminated clothing immediately.

| **Conditions for safe storage, including any incompatibilities**

1	Keep containers tightly closed .
2	Keep containers in a dry, cool and well-ventilated place.
3	Keep away from heat/sparks/open flames/hot surfaces.
4	Store away from incompatible materials and foodstuff containers.

| **Specific end uses**

1	In addition to use mentioned in the first parts, unforeseen other specific end uses.
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## 8 Exposure controls/personal protection

| **Control parameters**

## ◆ Occupational Exposure limit values

Component	Country/Region	Limit value - Eight hours		Limit value - Short term	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Propane-1,2-diol, particulates 57-55-6	United Kingdom	-	10	-	-
	United Kingdom	150	474	-	-
	New Zealand	150	474	-	-
	Latvia	-	7	-	-
	Ireland	-	10	-	-
	Ireland	150	470	-	-
	Canada - Ontario	-	10	-	-
	Canada - Ontario	50	155	-	-
	Australia	-	10	-	-
Australia	150	474	-	-	
Glycerol, mist 56-81-5	USA - OSHA	-	15	-	-
	South Korea	-	10	-	-
	Ireland	-	10	-	-
	Germany (DFG)	-	50	-	100
	Belgium	-	10	-	-
	Australia	-	10	-	-
1-Methoxypropan-2-ol 107-98-2	USA - NIOSH	100	360	150	540
	South Korea	100	360	150	540
	Ireland	100	375	150	568
	Germany (AGS)	100	370	200	740
	Denmark	50	185	100	370

Ethanol 64-17-5	Australia	100	360	150	553
	USA - OSHA	1000	1900	-	-
	South Korea	1000	1900	-	-
	Ireland	-	-	1000	-
	Germany (AGS)	500	960	1000	1920
	Denmark	1000	1900	2000	3800
Australia	1000	1880	-	-	

◆ Biological limit values

<b>Biological limit values</b>	No information available
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◆ Monitoring methods

1	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2	GBZ/T 160.1~GBZ/T 160.81-2004 Determination of toxic substances in workplace air (Series standard) .

◆ Derived No effect level(DNEL)

Component	Route of exposure	DNEL for Workers			
		Acute effects(local)	Acute effects(systemic)	Chronic effects(local)	Chronic effects(systemic)
C.I. Solvent Black 27 12237-22-8	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Rosin, oligomers 65997-05-9	Inhalation	No data available	No data available	No data available	117 mg/m <sup>3</sup>
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
1,2-Propanediol 57-55-6	Inhalation	No data available	No data available	10 mg/m <sup>3</sup>	168 mg/m <sup>3</sup>
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Glycerol 56-81-5	Inhalation	No data available	No data available	56 mg/m <sup>3</sup>	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
1-methoxypropan-2-ol 107-98-2	Inhalation	No data available	No data available	No data available	369 mg/m <sup>3</sup>
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Ethanol 64-17-5	Inhalation	No data available	No data available	No data available	950 mg/m <sup>3</sup>
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available


◆ Predicted No Effect Concentration (PNEC)

<b>Predicted No Effect Concentration (PNEC)</b>	No information available
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Engineering controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Use explosion-proof electrical/ventilating/lighting/equipment.
4	Set up emergency exit and necessary risk-elimination area.

Personal protection equipment

General requirement	
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<b>Eye protection</b>	Tightly fitting safety goggles (approved by EN 166(EU) or NIOSH (US)).
<b>Hand protection</b>	Wear protective gloves (such as butyl rubber), passing the tests according to EN 374(EU), US F739 or AS/NZS 2161.1 standard.
<b>Respiratory protection</b>	If exposure limits are exceeded or if irritation or other symptoms are experienced, use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges.
<b>Skin and body protection</b>	Wear fire/flame resistant/retardant clothing and antistatic boots.

## 9 Physical and chemical properties

<b>Appearance</b>	Black
<b>Odor</b>	No information available
<b>Odor threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting point/freezing point(°C)</b>	No information available
<b>Initial boiling point and boiling range(°C)</b>	No information available
<b>Flash point(Closed cup,°C)</b>	No information available
<b>Evaporation rate</b>	No information available
<b>Flammability</b>	No information available
<b>Upper/lower explosive limits[% (v/v)]</b>	Upper limit: No information available; Lower limit: No information available
<b>Vapor pressure</b>	No information available
<b>Vapor density(Air=1)</b>	No information available
<b>Relative density(Water=1)</b>	No information available
<b>Solubility(mg/L)</b>	Partly miscible with water (Rosin, oligomers)
<b>n-octanol/water partition coefficient</b>	No information available
<b>Auto-ignition temperature(°C)</b>	No information available
<b>Decomposition temperature(°C)</b>	No information available
<b>Viscosity (mm<sup>2</sup>/s)</b>	No information available
<b>Explosive properties</b>	No information available
<b>Oxidizing properties</b>	No information available

## 10 Stability and reactivity

### Stability and reactivity

<b>Reactivity</b>	Contact with incompatible substances can cause decomposition or other chemical reactions.
<b>Chemical stability</b>	Stable under proper operation and storage conditions.
<b>Possibility of hazardous reactions</b>	In contact with oxidants causes severe reactions, and may cause a fire or explosion.
<b>Conditions to avoid</b>	Incompatible materials, heat, flame and spark.
<b>Incompatible materials</b>	Oxidants, alkali metals, alkaline earth metals and aluminum.
<b>Hazardous decomposition products</b>	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11 Toxicological information

### Acute toxicity

Component	Cas No.	LD <sub>50</sub> (oral)	LD <sub>50</sub> (dermal)	LC <sub>50</sub> (inhalation, 4h)
1,2-Propanediol	57-55-6	20000mg/kg(Rat)	20800mg/kg(Rabbit)	No information available
Glycerol	56-81-5	12600mg/kg(Rat)	> 10000mg/kg(Rabbit)	No information available
1-methoxypropan-2-ol	107-98-2	11700mg/kg(Mouse)	13000mg/kg(Rabbit)	No information available
Ethanol	64-17-5	7060mg/kg(Rat)	No information available	39mg/L(Mouse)

### Carcinogenicity

ID	CAS No.	Component	IARC	NIP
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1	12237-22-8	C.I. Solvent Black 27	Not Listed	Not Listed
2	65997-05-9	Rosin, oligomers	Not Listed	Not Listed
3	57-55-6	1,2-Propanediol	Not Listed	Not Listed
4	56-81-5	Glycerol	Not Listed	Not Listed
5	107-98-2	1-methoxypropan-2-ol	Not Listed	Not Listed
6	64-17-5	Ethanol	Category 1	Not Listed

## Others

Permanent Marker Ink (Black)	
Skin corrosion/irritation	No information available
Serious eye damage/irritation	No information available
Skin sensitization	May cause an allergic skin reaction(Category 1)
Respiratory sensitization	No information available
Reproductive toxicity	May damage fertility or the unborn child(Category 1)
STOT-single exposure	No information available
STOT-repeated exposure	No information available
Aspiration hazard	No information available
Germ cell mutagenicity	No information available
Reproductive toxicity(additional)	No information available

## 12 Ecological information

### Acute aquatic toxicity

Component	Cas No.	Fish	Crustaceans	Algae
1,2-Propanediol	57-55-6	LC 50: 39800mg/L (96h)(Fish)	EC 50: >1000mg/L (48h)(Crustaceans)	ErC 50: >1000mg/L (72h)(Algae)
Glycerol	56-81-5	LC 50: 68100mg/L (96h)(Fish)	No information available	No information available
Ethanol	64-17-5	LC 50: 11000mg/L (96h)(Fish)	EC 50: 9950mg/L (48h)(Crustaceans)	No information available

### Chronic aquatic toxicity

Component	Cas No.	Fish	Crustaceans	Algae
1,2-Propanediol	57-55-6	NOEC: >100mg/L(Fish)	NOEC: 1000mg/L(Crustaceans)	NOEC: 1000mg/L(Algae)
Glycerol	56-81-5	No information available	No information available	No information available
Ethanol	64-17-5	No information available	No information available	No information available

### Persistence and degradability

Component	Cas No.	Persistence (water/soil)	Persistence (air)
丙二醇甲醚	107-98-2	Low(Half-life = 56 days)	Low(Half-life = 1.7 days)
1,2-丙二醇	57-55-6	Low	Low
乙醇	64-17-5	Low(Half-life = 2.17 days)	Low(Half-life = 5.08 days)

### Bioaccumulative potential

Component	Cas No.	Bioaccumulative potential	Remarks
丙二醇甲醚	107-98-2	Low	BCF=2
1,2-丙二醇	57-55-6	Low	BCF=1
乙醇	64-17-5	Low	Log Kow=-0.31

### Mobility in soil

Component	Cas No.	Mobility in soil	Soil Organic Carbon-Water Partitioning Coefficient (Koc)
丙二醇甲醚	107-98-2	High	1

1,2-丙二醇	57-55-6	High	1
乙醇	64-17-5	High	1

### Results of PBT and vPvB assessment

Component	Cas No.	Results of PBT and vPvB assessment (according to (EC) No 2015/830)
溶剂黑 27	12237-22-8	not PBT/vPvB
聚合松香	65997-05-9	not PBT/vPvB
1,2-丙二醇	57-55-6	not PBT/vPvB
甘油	56-81-5	not PBT/vPvB
丙二醇甲醚	107-98-2	not PBT/vPvB
乙醇	64-17-5	not PBT/vPvB


## 13 Disposal considerations

### Disposal considerations

Waste chemicals	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.
Contaminated packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section waste chemicals and contaminated packaging.

## 14 Transport information

### Label and Mark

Transporting Label	
Marine pollutant	None

### IMDG-CODE

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S.
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	II
Special provisions	274
Limited quantities	1L
Excepted quantities	E2
Marine pollutant (Yes or no)	No
EmS No.	F-E,S-E

### ICAO/IATA-DG

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S.
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	II
Excepted quantities	E2
Passenger and Cargo Aircraft Limited Quantity Packing	

Instructions	Y341
Passenger and Cargo Aircraft Limited Quantity Maximum net Quantity per Package	1 L
Passenger and Cargo Aircraft Packing Instructions	353
Passenger and Cargo Aircraft Maximum net Quantity per Package	5 L
Cargo Aircraft Packing Instructions	364
Cargo Aircraft Maximum net Quantity per Package	60 L
Special provisions	A3
ERG code	3H

## UN-ADR

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S.
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	II
Special provisions	274 601 640C or 274 601 640D
Limited quantities	1 L
Excepted quantities	E2
Packing instructions	P001 or P001 IBC02 R001
Special packing provisions	-
Mixed packing provisions	MP19
Protable tanks and bulk containers instructions	T7
Protable tanks and bulk containers special provisions	TP1 TP8 TP28
ADR tank code	L1.5BN or LGBF
ADR tank special provisions	-
Vehicle for tank carriage	FL
Transport category(Tunnel restriction code)	2 (D/E)
Special provisions for carriage(Packages)	-
Special provisions for carriage(Bulk)	-
Special provisions for carriage(Loadung,unloading and handling)	-
Special provisions for carriage(Operation)	S2 S20
Hazard identification No.	33
Notes	When vapour pressure at 50°C more than 110kPa,special provisions:274 601 640C;packing instructions:P001;ADR tank code:L1.5BN;When vapour pressure at 50°C not more than 110 kPa,special provisions:274 601 640D;packing instructions:P001 IBC02 R001;ADR tank code:LGBF

## 15 Regulatory information

### International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS
C.I. Solvent Black 27	×	×	×	√	√	√	√	√
Rosin, oligomers	√	√	√	√	√	√	√	√
1,2-Propanediol	√	√	√	√	√	√	√	√
Glycerol	√	√	√	√	√	√	√	√
1-methoxypropan-2-ol	√	√	√	√	√	√	√	√

Ethanol	✓	✓	✓	✓	✓	✓	✓	✓
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- 【EINECS】** European Inventory of Existing Commercial Chemical Substances  
**【TSCA】** United States Toxic Substances Control Act Inventory  
**【DSL】** Canadian Domestic Substances List  
**【IECSC】** China Inventory of Existing Chemical Substances  
**【NZIoC】** New Zealand Inventory of Chemicals  
**【PICCS】** Philippines Inventory of Chemicals and Chemical Substances  
**【KECI】** Existing and Evaluated Chemical Substances  
**【AICS】** Australia Inventory of Chemical Substances

### European chemical inventory

Component	A	B	C	D	E	F	G
C.I. Solvent Black 27	×	×	×	✓	×	×	×
Rosin, oligomers	×	×	×	✓	✓	×	×
1,2-Propanediol	×	×	×	✓	✓	×	×
Glycerol	×	×	×	✓	✓	×	×
1-methoxypropan-2-ol	×	×	✓	✓	✓	×	×
Ethanol	×	×	✓	✓	✓	×	×

- 【A】** Candidate list of Substances of Very High Concern for authorization under EU REACH regulation  
**【B】** Substances requiring authorisation under EU REACH regulation  
**【C】** Substances restricted under EU REACH  
**【D】** Pre-registered substances under EU REACH  
**【E】** Registered substances under EU REACH  
**【F】** Substance Evaluation – CoRAP under EU REACH  
**【G】** List of priority substances under EU water policy (Directive 2455/2001/EC)

## 16 Others

### Information on revision

Creation Date	2020/03/24
Revision Date	2020/03/24
Reason for revision	-

### Reference

- 【1】** IPCS:The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>.  
**【2】** IARC, website: <http://www.iarc.fr/>  
**【3】** OECD: The Global Portal to Information on Chemical Substances, website: [http://www.chemportal.org/chemportal/index?pageID=0 & request\\_locale=en](http://www.chemportal.org/chemportal/index?pageID=0 & request_locale=en).  
**【4】** CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>.  
**【5】** NLM:ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>.  
**【6】** EPA: Integrated Risk Information System, website: <http://cfpub.epa.gov/iris/>.  
**【7】** U.S. Department of Transportation:ERG, website: <http://www.phmsa.dot.gov/hazmat/library/erg>.  
**【8】** Germany GESTIS-database on hazard substance, website: <http://gestis-en.itrust.de/>.

### Abbreviations and acronyms

CAS-Chemical Abstracts Service	CMR-Carcinogens, mutagens or substances toxic to reproduction
PC-STEL-Short term exposure limit	PC-TWA-Time Weighted Average
DNEL-Derived No Effect Level	IARC-International Agency for Research on Cancer
RPE-Respiratory Protective Equipment	PNEC-Predicted No Effect Concentration
LC50-Lethal Concentration 50%	LD50-Lethal Dose 50%
NOEC-No Observed Effect Concentration	EC50-Effective Concentration 50%
PBT-Persistent, Bioaccumulative, Toxic	POW-Partition coefficient Octanol:Water
BCF-Bioconcentration factor (BCF)	vPvB-very Persistent, very Bioaccumulative
IMDG-International Maritime Dangerous Goods	ICAO/IATA-International Civil Aviation Organization/International Air Transportation Association
UN-The United Nations	ACGIH-American Conference of Governmental Industrial Hygienists

**Disclaimer**

This Safety Data Sheet (SDS) was prepared according to REACH Regulation. The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

## Safety Data Sheet

## Permanent Marker Ink (Blue)

Version: V1.0.0.1

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Revision Date: 2020/03/24

\*Prepared according to EU regulation No. 2015/830

## 1 Identification of the substance/mixture and of the company/undertaking

## Product identifier

Product Name	Permanent Marker Ink (Blue)
Cat No.	
CAS NO.	-
EC NO.	-
Molecular Formula	-

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

Relevant identified uses	Please consult manufacturer.
Uses advised against	Please consult manufacturer.

## Details of the supplier of the Safety Data Sheet

Name of the company	Shanghai NNW New Materials Technology Co., Ltd.
Address of the company	ROOM 402, Building 17, Lane 268, Lingxin Road, Changning District Shanghai 200335, CHINA
Post code	200335
Telephone number	021-64476059
Fax number	021-64476096
E-mail address	tech@nnwchina.com

## Emergency phone number

Emergency phone number	13311812200
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## 2 Hazards identification

## CLP classification according to Regulation (EC) No. 1272/2008

Flammable Liquids	Category 2
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## Label elements

Hazard pictograms	
Signal word	<b>Danger</b>

## Hazard statements

H225	Highly flammable liquid and vapour
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## Precautionary statements

## ◆ Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.

P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

## ◆ Response

P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
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## ◆ Storage

P403+P235	Store in a well-ventilated place. Keep cool.
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## ◆ Disposal

P501	Dispose of contents/container in accordance with local/regional/national/ international regulations.
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## | Other hazards

	Not applicable
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## 3 Composition/information on ingredients

Component	Cas No.	EC No.	Index No.	Hazard classification according to CLP	Concentration (weight percent, %)
Diammonio(ethyl)[4-[[4-[ethyl(3-sulphonatobenzyl)amino]phenyl](2-sulphonatophenyl)methylene]cyclohexa-2,5-dien-1-ylidene](3-sulphonatobenzyl)ammonium	2650-18-2	220-168-0	-	Not Classified	8~10
Rosin, oligomers	65997-05-9	500-163-2	-	Not Classified	35~45
1,2-Propanediol	57-55-6	200-338-0	-	Not Classified	8
Glycerol	56-81-5	200-289-5	-	Not Classified	18
1-methoxypropan-2-ol	107-98-2	203-539-1	603-064-00-3	Flammable Liquids, Category 3, H226; Specific Target Organ Toxicity (Single Exposure), Category 3, H336	14
Ethanol	64-17-5	200-578-6	603-002-00-5	Flammable Liquids, Category 2, H225	5~17

## 4 First aid measures

## | Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

## | Most important symptoms and effects, both acute and delayed

1	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
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## | Indication of any immediate medical attention and special treatment needed

1	Treat symptomatically.
2	Symptoms may be delayed.

## 5 Firefighting measures

## | Extinguishing media

Suitable extinguishing media	Small Fire: Dry chemical, CO2, water spray or alcohol-resistant foam; Large Fire: Water spray, fog or alcohol-resistant foam.
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**Unsuitable extinguishing media**

Do not use a solid water stream as it may scatter or spread fire.

**Specific hazards arising from the substance or mixture**

1	Will form explosive mixtures with air.
2	Fire exposed containers may vent contents through pressure relief valves thereby increasing fire intensity and/ or vapour concentration.
3	Vapours may travel to source of ignition and flash back.
4	Liquid and vapour are flammable.
5	Development of hazardous combustion gases or vapor possible in the event of fire.
6	May expansion or decompose explosively when heated or involved in fire.

**Advice for firefighters**

1	As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

**6 Accidental release measures****Personal precautions, protective equipment and emergency procedures**

1	Avoid breathing vapours and contacting with skin and eye.
2	Beware of vapours accumulating to form explosive concentrations.
3	Vapours can accumulate in low areas.
4	Emergency personnel wear positive pressure self-contained breathing apparatus. Wear protective and anti-static clothing. Wear chemical impermeable gloves.
5	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
6	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
7	Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

**Environmental precautions**

1	Prevent further leakage or spillage if safe to do so.
2	Discharge into the environment must be avoided.

**Methods and materials for containment and cleaning up**

1	Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
2	Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.
3	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

**7 Handling and storage****Precautions for handling**

## ◆ Protective measures

1	Handling is performed in a well ventilated place.
2	Wear suitable protective equipment.
3	Avoid contact with skin and eyes.

## ◆ Measures to prevent fire

1	Use only non-sparking tools.
2	To prevent fire caused by electrostatic discharge steam, equipment on all metal parts should be grounded.
3	Use explosion proof equipment.
4	Keep away from heat/sparks/open flames/ hot surfaces.

## ◆ Measures to prevent aerosol and dust generation

1	Not applicable.
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◆ Advice on general occupational hygiene

1	Wash hands and face after using of the substances.
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2	Replace the contaminated clothing immediately.
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Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed .
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2	Keep containers in a dry, cool and well-ventilated place.
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3	Keep away from heat/sparks/open flames/hot surfaces.
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4	Store away from incompatible materials and foodstuff containers.
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Specific end uses

1	In addition to use mentioned in the first parts, unforeseen other specific end uses.
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## 8 Exposure controls/personal protection

Control parameters

◆ Occupational Exposure limit values

Component	Country/Region	Limit value - Eight hours		Limit value - Short term	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Propane-1,2-diol, particulates 57-55-6	United Kingdom	-	10	-	-
	United Kingdom	150	474	-	-
	New Zealand	150	474	-	-
	Latvia	-	7	-	-
	Ireland	-	10	-	-
	Ireland	150	470	-	-
	Canada - Ontario	-	10	-	-
	Canada - Ontario	50	155	-	-
	Australia	-	10	-	-
	Australia	150	474	-	-
Glycerol, mist 56-81-5	USA - OSHA	-	15	-	-
	South Korea	-	10	-	-
	Ireland	-	10	-	-
	Germany (DFG)	-	50	-	100
	Belgium	-	10	-	-
	Australia	-	10	-	-
1-Methoxypropan-2-ol 107-98-2	USA - NIOSH	100	360	150	540
	South Korea	100	360	150	540
	Ireland	100	375	150	568
	Germany (AGS)	100	370	200	740
	Denmark	50	185	100	370
	Australia	100	369	150	553
Ethanol 64-17-5	USA - OSHA	1000	1900	-	-
	South Korea	1000	1900	-	-
	Ireland	-	-	1000	-
	Germany (AGS)	500	960	1000	1920
	Denmark	1000	1900	2000	3800
	Australia	1000	1880	-	-

◆ Biological limit values

<b>Biological limit values</b>	No information available
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◆ Monitoring methods

1	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2	GBZ/T 160.1~GBZ/T 160.81-2004 Determination of toxic substances in workplace air (Series standard) .

◆ Derived No effect level(DNEL)

Component	Route of exposure	DNEL for Workers			
		Acute effects(local)	Acute effects(systemic)	Chronic effects(local)	Chronic effects(systemic)
Diammonio(ethyl)[4-[[4-[ethyl(3-sulphonatobenzyl)amino]phenyl](2-sulphonatophenyl)methylene]cyclohexa-2,5-dien-1-ylidene](3-sulphonatobenzyl)ammonium 2650-18-2	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Rosin, oligomers 65997-05-9	Inhalation	No data available	No data available	No data available	117 mg/m <sup>3</sup>
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
1,2-Propanediol 57-55-6	Inhalation	No data available	No data available	10 mg/m <sup>3</sup>	168 mg/m <sup>3</sup>
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Glycerol 56-81-5	Inhalation	No data available	No data available	56 mg/m <sup>3</sup>	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
1-methoxypropan-2-ol 107-98-2	Inhalation	No data available	No data available	No data available	369 mg/m <sup>3</sup>
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Ethanol 64-17-5	Inhalation	No data available	No data available	No data available	950 mg/m <sup>3</sup>
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available


◆ Predicted No Effect Concentration (PNEC)

<b>Predicted No Effect Concentration (PNEC)</b>	No information available
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## Engineering controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Use explosion-proof electrical/ventilating/lighting/equipment.
4	Set up emergency exit and necessary risk-elimination area.

## Personal protection equipment

<b>General requirement</b>	
<b>Eye protection</b>	Tightly fitting safety goggles (approved by EN 166(EU) or NIOSH (US).
<b>Hand protection</b>	Wear protective gloves (such as butyl rubber) , passing the tests according to EN 374(EU), US F739 or AS/NZS 2161.1 standard.
<b>Respiratory protection</b>	If exposure limits are exceeded or if irritation or other symptoms are experienced, use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges.
<b>Skin and body protection</b>	Wear fire/flame resistant/retardant clothing and antistatic boots.

## 9 Physical and chemical properties

Appearance	Blue
Odor	No information available
Odor threshold	No information available
pH	No information available
Melting point/freezing point(°C)	No information available
Initial boiling point and boiling range(°C)	No information available
Flash point(Closed cup, °C)	No information available
Evaporation rate	No information available
Flammability	No information available
Upper/lower explosive limits[% (v/v)]	Upper limit: No information available; Lower limit: No information available
Vapor pressure	No information available
Vapor density(Air=1)	No information available
Relative density(Water=1)	No information available
Solubility(mg/L)	Partly miscible with water (Rosin, oligomers)
n-octanol/water partition coefficient	No information available
Auto-ignition temperature(°C)	No information available
Decomposition temperature(°C)	No information available
Viscosity (mm <sup>2</sup> /s)	No information available
Explosive properties	No information available
Oxidizing properties	No information available

## 10 Stability and reactivity

### Stability and reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	In contact with oxidants causes severe reactions, and may cause a fire or explosion.
Conditions to avoid	Incompatible materials, heat, flame and spark.
Incompatible materials	Oxidants, alkali metals, alkaline earth metals and aluminum.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11 Toxicological information

### Acute toxicity

Component	Cas No.	LD <sub>50</sub> (oral)	LD <sub>50</sub> (dermal)	LC <sub>50</sub> (inhalation, 4h)
1,2-Propanediol	57-55-6	20000mg/kg(Rat)	20800mg/kg(Rabbit)	No information available
Glycerol	56-81-5	12600mg/kg(Rat)	> 10000mg/kg(Rabbit)	No information available
1-methoxypropan-2-ol	107-98-2	11700mg/kg(Mouse)	13000mg/kg(Rabbit)	No information available
Ethanol	64-17-5	7060mg/kg(Rat)	No information available	39mg/L(Mouse)

### Carcinogenicity

ID	CAS No.	Component	IARC	NTP
1	2650-18-2	Diammonio(ethyl)[4-[[4-[ethyl(3-sulphonatobenzyl)amino]phenyl](2-sulphonatophenyl)methylene]cyclohexa-2,5-dien-1-ylidene](3-sulphonatobenzyl)ammonium	Not Listed	Not Listed
2	65997-05-9	Rosin, oligomers	Not Listed	Not Listed
3	57-55-6	1,2-Propanediol	Not Listed	Not Listed
4	56-81-5	Glycerol	Not Listed	Not Listed
5	107-98-2	1-methoxypropan-2-ol	Not Listed	Not Listed

6	64-17-5	Ethanol	Category 1	Not Listed
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## Others

Permanent Marker Ink (Blue)	
Skin corrosion/irritation	No information available
Serious eye damage/irritation	No information available
Skin sensitization	No information available
Respiratory sensitization	No information available
Reproductive toxicity	No information available
STOT-single exposure	No information available
STOT-repeated exposure	No information available
Aspiration hazard	No information available
Germ cell mutagenicity	No information available
Reproductive toxicity(additional)	No information available

## 12 Ecological information

### Acute aquatic toxicity

Component	Cas No.	Fish	Crustaceans	Algae
1,2-Propanediol	57-55-6	LC <sub>50</sub> : 39800mg/L (96h)(Fish)	EC <sub>50</sub> : >1000mg/L (48h)(Crustaceans)	ErC <sub>50</sub> : >1000mg/L (72h)(Algae)
Glycerol	56-81-5	LC <sub>50</sub> : 68100mg/L (96h)(Fish)	No information available	No information available
Ethanol	64-17-5	LC <sub>50</sub> : 11000mg/L (96h)(Fish)	EC <sub>50</sub> : 9950mg/L (48h)(Crustaceans)	No information available

### Chronic aquatic toxicity

Component	Cas No.	Fish	Crustaceans	Algae
1,2-Propanediol	57-55-6	NOEC: >100mg/L(Fish)	NOEC: 1000mg/L(Crustaceans)	NOEC: 1000mg/L(Algae)
Glycerol	56-81-5	No information available	No information available	No information available
Ethanol	64-17-5	No information available	No information available	No information available

### Persistence and degradability

Component	Cas No.	Persistence (water/soil)	Persistence (air)
丙二醇甲醚	107-98-2	Low(Half-life = 56 days)	Low(Half-life = 1.7 days)
酸性兰 9	2650-18-2	High	High
1,2-丙二醇	57-55-6	Low	Low
乙醇	64-17-5	Low(Half-life = 2.17 days)	Low(Half-life = 5.08 days)

### Bioaccumulative potential

Component	Cas No.	Bioaccumulative potential	Remarks
丙二醇甲醚	107-98-2	Low	BCF=2
酸性兰 9	2650-18-2	Low	Log Kow=2.0459
1,2-丙二醇	57-55-6	Low	BCF=1
乙醇	64-17-5	Low	Log Kow=-0.31

### Mobility in soil

Component	Cas No.	Mobility in soil	Soil Organic Carbon-Water Partitioning Coefficient (Koc)
丙二醇甲醚	107-98-2	High	1
酸性兰 9	2650-18-2	Low	10000000000
1,2-丙二醇	57-55-6	High	1
乙醇	64-17-5	High	1

### Results of PBT and vPvB assessment

Component	Cas No.	Results of PBT and vPvB assessment (according to (EC) No 2015/830)
酸性兰 9	2650-18-2	not PBT/vPvB
聚合松香	65997-05-9	not PBT/vPvB
1,2-丙二醇	57-55-6	not PBT/vPvB
甘油	56-81-5	not PBT/vPvB
丙二醇甲醚	107-98-2	not PBT/vPvB
乙醇	64-17-5	not PBT/vPvB

## 13 Disposal considerations

### Disposal considerations

Waste chemicals	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.
Contaminated packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section waste chemicals and contaminated packaging.

## 14 Transport information

### Label and Mark

Transporting Label	
Marine pollutant	None

### IMDG-CODE

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S.
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	II
Special provisions	274
Limited quantities	1L
Excepted quantities	E2
Marine pollutant (Yes or no)	No
EmS No.	F-E,S-E

### ICAO/IATA-DG

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S.
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	II
Excepted quantities	E2
Passenger and Cargo Aircraft Limited Quantity Packing Instructions	Y341
Passenger and Cargo Aircraft Limited Quantity Maximum net	1 L

Quantity per Package Passenger and Cargo Aircraft Packing Instructions	353
Passenger and Cargo Aircraft Maximum net Quantity per Package	5 L
Cargo Aircraft Packing Instructions	364
Cargo Aircraft Maximum net Quantity per Package	60 L
Special provisions	A3
ERG code	3H

## UN-ADR

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S.
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	II
Special provisions	274 601 640C or 274 601 640D
Limited quantities	1 L
Excepted quantities	E2
Packing instructions	P001 or P001 IBC02 R001
Special packing provisions	-
Mixed packing provisions	MP19
Protable tanks and bulk containers instructions	T7
Protable tanks and bulk containers special provisions	TP1 TP8 TP28
ADR tank code	L1.5BN or LGBF
ADR tank special provisions	-
Vehicle for tank carriage	FL
Transport category(Tunnel restriction code)	2 (D/E)
Special provisions for carriage(Packages)	-
Special provisions for carriage(Bulk)	-
Special provisions for carriage(Loadung,unloading and handling)	-
Special provisions for carriage(Operation)	S2 S20
Hazard identification No.	33
Notes	When vapour pressure at 50°C more than 110kPa,special provisions:274 601 640C;packing instructions:P001;ADR tank code:L1.5BN;When vapour pressure at 50°C not more than 110 kPa,special provisions:274 601 640D;packing instructions:P001 IBC02 R001;ADR tank code:LGBF

## 15 Regulatory information

### International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS
Diammonio(ethyl)[4-[[4-[ethyl(3-sulphonatobenzyl)amino]phenyl](2-sulphonatophenyl)methylene]cyclohexa-2,5-dien-1-ylidene](3-sulphonatobenzyl)ammonium	√	√	√	√	√	√	√	√
Rosin, oligomers	√	√	√	√	√	√	√	√
1,2-Propanediol	√	√	√	√	√	√	√	√
Glycerol	√	√	√	√	√	√	√	√
1-methoxypropan-2-ol	√	√	√	√	√	√	√	√
Ethanol	√	√	√	√	√	√	√	√

- 【EINECS】** European Inventory of Existing Commercial Chemical Substances  
**【TSCA】** United States Toxic Substances Control Act Inventory  
**【DSL】** Canadian Domestic Substances List  
**【IECSC】** China Inventory of Existing Chemical Substances  
**【NZIoC】** New Zealand Inventory of Chemicals  
**【PICCS】** Philippines Inventory of Chemicals and Chemical Substances  
**【KECI】** Existing and Evaluated Chemical Substances  
**【AICS】** Australia Inventory of Chemical Substances

## European chemical inventory

Component	A	B	C	D	E	F	G
Diammonio(ethyl)[4-[[4-[ethyl(3-sulphonatobenzyl)amino]phenyl](2-sulphonatophenyl)methylene]cyclohexa-2,5-dien-1-ylidene](3-sulphonatobenzyl)ammonium	×	×	×	√	×	×	×
Rosin, oligomers	×	×	×	√	√	×	×
1,2-Propanediol	×	×	×	√	√	×	×
Glycerol	×	×	×	√	√	×	×
1-methoxypropan-2-ol	×	×	√	√	√	×	×
Ethanol	×	×	√	√	√	×	×

- 【A】** Candidate list of Substances of Very High Concern for authorization under EU REACH regulation  
**【B】** Substances requiring authorisation under EU REACH regulation  
**【C】** Substances restricted under EU REACH  
**【D】** Pre-registered substances under EU REACH  
**【E】** Registered substances under EU REACH  
**【F】** Substance Evaluation – CoRAP under EU REACH  
**【G】** List of priority substances under EU water policy (Directive 2455/2001/EC)

## 16 Others

### Information on revision

Creation Date	2020/03/24
Revision Date	2020/03/24
Reason for revision	-

### Reference

- 【1】** IPCS:The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>.  
**【2】** IARC, website: <http://www.iarc.fr/>  
**【3】** OECD: The Global Portal to Information on Chemical Substances, website: [http://www.echemportal.org/echemportal/index?pageID=0 & request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0 & request_locale=en).  
**【4】** CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>.  
**【5】** NLM:ChemDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>.  
**【6】** EPA: Integrated Risk Information System, website: <http://cfpub.epa.gov/iris/>.  
**【7】** U.S. Department of Transportation:ERG, website: <http://www.phmsa.dot.gov/hazmat/library/erg>.  
**【8】** Germany GESTIS-database on hazard substance, website: <http://gestis-en.itrust.de/>.

### Abbreviations and acronyms

CAS-Chemical Abstracts Service	CMR-Carcinogens, mutagens or substances toxic to reproduction
PC-STEL-Short term exposure limit	PC-TWA-Time Weighted Average
DNEL-Derived No Effect Level	IARC-International Agency for Research on Cancer
RPE-Respiratory Protective Equipment	PNEC-Predicted No Effect Concentration
LC50-Lethal Concentration 50%	LD50-Lethal Dose 50%
NOEC-No Observed Effect Concentration	EC50-Effective Concentration 50%
PBT-Persistent, Bioaccumulative, Toxic	POW-Partition coefficient Octanol:Water
BCF-Bioconcentration factor (BCF)	vPvB-very Persistent, very Bioaccumulative

IMDG-International Maritime Dangerous Goods	ICAO/IATA-International Civil Aviation Organization/International Air Transportation Association
UN-The United Nations	ACGIH-American Conference of Governmental Industrial Hygienists
NFPA-National Fire Protection Association	OECD-Organization for Economic Co-operation and Development

## Disclaimer

This Safety Data Sheet (SDS) was prepared according to REACH Regulation. The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

## Safety Data Sheet

## Permanent Marker Ink (Red)

Version: V1.0.0.1

Creation Date: 2020/03/24

Revision Date: 2020/03/24

\*Prepared according to EU regulation No. 2015/830

## 1 Identification of the substance/mixture and of the company/undertaking

## Product identifier

Product Name	Permanent Marker Ink (Red)
Cat No.	
CAS NO.	-
EC NO.	-
Molecular Formula	-

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

Relevant identified uses	Please consult manufacturer.
Uses advised against	Please consult manufacturer.

## Details of the supplier of the Safety Data Sheet

Name of the company	Shanghai NNW New Materials Technology Co., Ltd.
Address of the company	ROOM 402, Building17, Lane 268, Lingxin Road, Changning District Shanghai 200335, CHINA
Post code	200335
Telephone number	021-64476059
Fax number	021-64476096
E-mail address	tech@nnwchina.com

## Emergency phone number

Emergency phone number	13311812200
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## 2 Hazards identification

## CLP classification according to Regulation (EC) No. 1272/2008

Flammable Liquids	Category 2
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## Label elements

Hazard pictograms	
Signal word	<b>Danger</b>

## Hazard statements

H225	Highly flammable liquid and vapour
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## Precautionary statements

## ◆ Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.

P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

#### ◆ Response

P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
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#### ◆ Storage

P403+P235	Store in a well-ventilated place. Keep cool.
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#### ◆ Disposal

P501	Dispose of contents/container in accordance with local/regional/national/ international regulations.
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#### Other hazards

	Not applicable
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### 3 Composition/information on ingredients

Component	Cas No.	EC No.	Index No.	Hazard classification according to CLP	Concentration (weight percent, %)
Solvent Red 122	12227-55-3	602-483-9	-	Not Classified	8~10
Rosin, oligomers	65997-05-9	500-163-2	-	Not Classified	35~45
1,2-Propanediol	57-55-6	200-338-0	-	Not Classified	8
Glycerol	56-81-5	200-289-5	-	Not Classified	18
1-methoxypropan-2-ol	107-98-2	203-539-1	603-064-00-3	Flammable Liquids, Category 3, H226; Specific Target Organ Toxicity (Single Exposure), Category 3, H336	14
Ethanol	64-17-5	200-578-6	603-002-00-5	Flammable Liquids, Category 2, H225	5~17

### 4 First aid measures

#### Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

#### Most important symptoms and effects, both acute and delayed

1	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
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#### Indication of any immediate medical attention and special treatment needed

1	Treat symptomatically.
2	Symptoms may be delayed.

### 5 Firefighting measures

#### Extinguishing media

Suitable extinguishing media	Small Fire: Dry chemical, CO <sub>2</sub> , water spray or alcohol-resistant foam; Large Fire: Water spray, fog or alcohol-resistant foam.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter or spread fire.

#### Specific hazards arising from the substance or mixture

1	Will form explosive mixtures with air.
2	Fire exposed containers may vent contents through pressure relief valves thereby increasing fire intensity and/ or vapour concentration.
3	Vapours may travel to source of ignition and flash back.
4	Liquid and vapour are flammable.
5	Development of hazardous combustion gases or vapor possible in the event of fire.
6	May expansion or decompose explosively when heated or involved in fire.

### Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

## 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

1	Avoid breathing vapours and contacting with skin and eye.
2	Beware of vapours accumulating to form explosive concentrations.
3	Vapours can accumulate in low areas.
4	Emergency personnel wear positive pressure self-contained breathing apparatus. Wear protective and anti-static clothing. Wear chemical impermeable gloves.
5	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
6	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
7	Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

### Environmental precautions

1	Prevent further leakage or spillage if safe to do so.
2	Discharge into the environment must be avoided.

### Methods and materials for containment and cleaning up

1	Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
2	Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.
3	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

## 7 Handling and storage

### Precautions for handling

#### ◆ Protective measures

1	Handling is performed in a well ventilated place.
2	Wear suitable protective equipment.
3	Avoid contact with skin and eyes.

#### ◆ Measures to prevent fire

1	Use only non-sparking tools.
2	To prevent fire caused by electrostatic discharge steam, equipment on all metal parts should be grounded.
3	Use explosion proof equipment.
4	Keep away from heat/sparks/open flames/ hot surfaces.

#### ◆ Measures to prevent aerosol and dust generation

1	Not applicable.
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#### ◆ Advice on general occupational hygiene

1	Wash hands and face after using of the substances.
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2	Replace the contaminated clothing immediately.
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### Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed .
2	Keep containers in a dry, cool and well-ventilated place.
3	Keep away from heat/sparks/open flames/hot surfaces.
4	Store away from incompatible materials and foodstuff containers.

### Specific end uses

1	In addition to use mentioned in the first parts, unforeseen other specific end uses.
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## 8 Exposure controls/personal protection

### Control parameters

#### ◆ Occupational Exposure limit values

Component	Country/Region	Limit value - Eight hours		Limit value - Short term	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Propane-1,2-diol, particulates 57-55-6	United Kingdom	-	10	-	-
	United Kingdom	150	474	-	-
	New Zealand	150	474	-	-
	Latvia	-	7	-	-
	Ireland	-	10	-	-
	Ireland	150	470	-	-
	Canada - Ontario	-	10	-	-
	Canada - Ontario	50	155	-	-
	Australia	-	10	-	-
	Australia	150	474	-	-
Glycerol, mist 56-81-5	USA - OSHA	-	15	-	-
	South Korea	-	10	-	-
	Ireland	-	10	-	-
	Germany (DFG)	-	50	-	100
	Belgium	-	10	-	-
	Australia	-	10	-	-
1-Methoxypropan-2-ol 107-98-2	USA - NIOSH	100	360	150	540
	South Korea	100	360	150	540
	Ireland	100	375	150	568
	Germany (AGS)	100	370	200	740
	Denmark	50	185	100	370
	Australia	100	369	150	553
Ethanol 64-17-5	USA - OSHA	1000	1900	-	-
	South Korea	1000	1900	-	-
	Ireland	-	-	1000	-
	Germany (AGS)	500	960	1000	1920
	Denmark	1000	1900	2000	3800
	Australia	1000	1880	-	-

#### ◆ Biological limit values

Biological limit values	No information available
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#### ◆ Monitoring methods

1	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2	GBZ/T 160.1-GBZ/T 160.81-2004 Determination of toxic substances in workplace air (Series standard) .

◆ Derived No effect level(DNEL)

Component	Route of exposure	DNEL for Workers			
		Acute effects(local)	Acute effects(systemic)	Chronic effects(local)	Chronic effects(systemic)
Solvent Red 122 12227-55-3	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Rosin, oligomers 65997-05-9	Inhalation	No data available	No data available	No data available	117 mg/m <sup>3</sup>
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
1,2-Propanediol 57-55-6	Inhalation	No data available	No data available	10 mg/m <sup>3</sup>	168 mg/m <sup>3</sup>
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Glycerol 56-81-5	Inhalation	No data available	No data available	56 mg/m <sup>3</sup>	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
1-methoxypropan-2-ol 107-98-2	Inhalation	No data available	No data available	No data available	369 mg/m <sup>3</sup>
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Ethanol 64-17-5	Inhalation	No data available	No data available	No data available	950 mg/m <sup>3</sup>
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available


◆ Predicted No Effect Concentration (PNEC)

Predicted No Effect Concentration (PNEC)	No information available
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### Engineering controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Use explosion-proof electrical/ventilating/lighting/equipment.
4	Set up emergency exit and necessary risk-elimination area.

### Personal protection equipment

General requirement	
Eye protection	Tightly fitting safety goggles (approved by EN 166(EU) or NIOSH (US)).
Hand protection	Wear protective gloves (such as butyl rubber) , passing the tests according to EN 374(EU), US F739 or AS/NZS 2161.1 standard.
Respiratory protection	If exposure limits are exceeded or if irritation or other symptoms are experienced, use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges.
Skin and body protection	Wear fire/flame resistant/retardant clothing and antistatic boots.

## 9 Physical and chemical properties

Appearance	red
Odor	No information available
Odor threshold	No information available
pH	No information available

Melting point/freezing point(°C)	No information available
Initial boiling point and boiling range(°C)	No information available
Flash point(Closed cup,°C)	No information available
Evaporation rate	No information available
Flammability	No information available
Upper/lower explosive limits[% (v/v)]	Upper limit: No information available; Lower limit: No information available
Vapor pressure	No information available
Vapor density(Air = 1)	No information available
Relative density(Water=1)	No information available
Solubility(mg/L)	Partly miscible with water (Rosin, oligomers)
n-octanol/water partition coefficient	No information available
Auto-ignition temperature(°C)	No information available
Decomposition temperature(°C)	No information available
Viscosity (mm <sup>2</sup> /s)	No information available
Explosive properties	No information available
Oxidizing properties	No information available

## 10 Stability and reactivity

### Stability and reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	In contact with oxidants causes severe reactions, and may cause a fire or explosion.
Conditions to avoid	Incompatible materials, heat, flame and spark.
Incompatible materials	Oxidants, alkali metals, alkaline earth metals and aluminum
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11 Toxicological information

### Acute toxicity

Component	Cas No.	LD <sub>50</sub> (oral)	LD <sub>50</sub> (dermal)	LC <sub>50</sub> (inhalation, 4h)
1,2-Propanediol	57-55-6	20000mg/kg(Rat)	20800mg/kg(Rabbit)	No information available
Glycerol	56-81-5	12600mg/kg(Rat)	> 10000mg/kg(Rabbit)	No information available
1-methoxypropan-2-ol	107-98-2	11700mg/kg(Mouse)	13000mg/kg(Rabbit)	No information available
Ethanol	64-17-5	7060mg/kg(Rat)	No information available	39mg/L(Mouse)

### Carcinogenicity

ID	CAS No.	Component	IARC	NIP
1	12227-55-3	Solvent Red 122	Not Listed	Not Listed
2	65997-05-9	Rosin, oligomers	Not Listed	Not Listed
3	57-55-6	1,2-Propanediol	Not Listed	Not Listed
4	56-81-5	Glycerol	Not Listed	Not Listed
5	107-98-2	1-methoxypropan-2-ol	Not Listed	Not Listed
6	64-17-5	Ethanol	Category 1	Not Listed

### Others

Permanent Marker Ink (Red)	
Skin corrosion/irritation	No information available
Serious eye damage/irritation	No information available

Skin sensitization	No information available
Respiratory sensitization	No information available
Reproductive toxicity	No information available
STOT-single exposure	No information available
STOT-repeated exposure	No information available
Aspiration hazard	No information available
Germ cell mutagenicity	No information available
Reproductive toxicity(additional)	No information available

## 12 Ecological information

### Acute aquatic toxicity

Component	Cas No.	Fish	Crustaceans	Algae
1,2-Propanediol	57-55-6	LC 50: 39800mg/L (96h)(Fish)	EC 50: >1000mg/L (48h)(Crustaceans)	ErC 50: >1000mg/L (72h)(Algae)
Glycerol	56-81-5	LC 50: 68100mg/L (96h)(Fish)	No information available	No information available
Ethanol	64-17-5	LC 50: 11000mg/L (96h)(Fish)	EC 50: 9950mg/L (48h)(Crustaceans)	No information available

### Chronic aquatic toxicity

Component	Cas No.	Fish	Crustaceans	Algae
1,2-Propanediol	57-55-6	NOEC: >100mg/L(Fish)	NOEC: 1000mg/L(Crustaceans)	NOEC: 1000mg/L(Algae)
Glycerol	56-81-5	No information available	No information available	No information available
Ethanol	64-17-5	No information available	No information available	No information available

### Persistence and degradability

Component	Cas No.	Persistence (water/soil)	Persistence (air)
丙二醇甲醚	107-98-2	Low(Half-life = 56 days)	Low(Half-life = 1.7 days)
1,2-丙二醇	57-55-6	Low	Low
乙醇	64-17-5	Low(Half-life = 2.17 days)	Low(Half-life = 5.08 days)

### Bioaccumulative potential

Component	Cas No.	Bioaccumulative potential	Remarks
丙二醇甲醚	107-98-2	Low	BCF=2
1,2-丙二醇	57-55-6	Low	BCF=1
乙醇	64-17-5	Low	Log Kow=-0.31

### Mobility in soil

Component	Cas No.	Mobility in soil	Soil Organic Carbon-Water Partitioning Coefficient (Koc)
丙二醇甲醚	107-98-2	High	1
1,2-丙二醇	57-55-6	High	1
乙醇	64-17-5	High	1

### Results of PBT and vPvB assessment

Component	Cas No.	Results of PBT and vPvB assessment ( according to (EC) No 2015/830)
溶剂红122	12227-55-3	not PBT/vPvB
聚合松香	65997-05-9	not PBT/vPvB
1,2-丙二醇	57-55-6	not PBT/vPvB
甘油	56-81-5	not PBT/vPvB
丙二醇甲醚	107-98-2	not PBT/vPvB
乙醇	64-17-5	not PBT/vPvB

## 13 Disposal considerations

### Disposal considerations

Waste chemicals	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.
Contaminated packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section waste chemicals and contaminated packaging.

## 14 Transport information

### Label and Mark

Transporting Label	
Marine pollutant	None

### IMDG-CODE

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S.
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	II
Special provisions	274
Limited quantities	1L
Excepted quantities	E2
Marine pollutant (Yes or no)	No
EmS No.	F-E,S-E

### ICAO/IATA-DG

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S.
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	II
Excepted quantities	E2
Passenger and Cargo Aircraft Limited Quantity Packing Instructions	Y341
Passenger and Cargo Aircraft Limited Quantity Maximum net Quantity per Package	1 L
Passenger and Cargo Aircraft Packing Instructions	353
Passenger and Cargo Aircraft Maximum net Quantity per Package	5 L
Cargo Aircraft Packing Instructions	364
Cargo Aircraft Maximum net Quantity per Package	60 L
Special provisions	A3
ERG code	3H

## UN-ADR

UN number	1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S.
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	II
Special provisions	274 601 640C or 274 601 640D
Limited quantities	1 L
Excepted quantities	E2
Packing instructions	P001 or P001 IBC02 R001
Special packing provisions	-
Mixed packing provisions	MP19
Protable tanks and bulk containers instructions	T7
Protable tanks and bulk containers special provisions	TP1 TP8 TP28
ADR tank code	L1.5BN or LGBF
ADR tank special provisions	-
Vehicle for tank carriage	FL
Transport category(Tunnel restriction code)	2 (D/E)
Special provisions for carriage(Packages)	-
Special provisions for carriage(Bulk)	-
Special provisions for carriage(Loading,unloading and handling)	-
Special provisions for carriage(Operation)	S2 S20
Hazard identification No.	33
Notes	When vapour pressure at 50°C more than 110kPa,special provisions:274 601 640C;packing instructions:P001;ADR tank code:L1.5BN;When vapour pressure at 50°C not more than 110 kPa,special provisions:274 601 640D;packing instructions:P001 IBC02 R001;ADR tank code:LGBF

## 15 Regulatory information

## International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS
Solvent Red 122	×	×	×	√	√	√	×	√
Rosin, oligomers	√	√	√	√	√	√	√	√
1,2-Propanediol	√	√	√	√	√	√	√	√
Glycerol	√	√	√	√	√	√	√	√
1-methoxypropan-2-ol	√	√	√	√	√	√	√	√
Ethanol	√	√	√	√	√	√	√	√

【EINECS】 European Inventory of Existing Commercial Chemical Substances

【TSCA】 United States Toxic Substances Control Act Inventory

【DSL】 Canadian Domestic Substances List

【IECSC】 China Inventory of Existing Chemical Substances

【NZIoC】 New Zealand Inventory of Chemicals

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances

【KECI】 Existing and Evaluated Chemical Substances

【AICS】 Australia Inventory of Chemical Substances

## European chemical inventory

Component	A	B	C	D	E	F	G
Solvent Red 122	×	×	×	√	×	×	×
Rosin, oligomers	×	×	×	√	√	×	×

1,2-Propanediol	×	×	×	√	√	×	×
Glycerol	×	×	×	√	√	×	×
1-methoxypropan-2-ol	×	×	√	√	√	×	×
Ethanol	×	×	√	√	√	×	×

**[A]** Candidate list of Substances of Very High Concern for authorization under EU REACH regulation

**[B]** Substances requiring authorisation under EU REACH regulation

**[C]** Substances restricted under EU REACH

**[D]** Pre-registered substances under EU REACH

**[E]** Registered substances under EU REACH

**[F]** Substance Evaluation – CoRAP under EU REACH

**[G]** List of priority substances under EU water policy (Directive 2455/2001/EC)

## 16 Others

### Information on revision

Creation Date	2020/03/24
Revision Date	2020/03/24
Reason for revision	-

### Reference

- IPCS:The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>.
- IARC, website: <http://www.iarc.fr/>
- OECD: The Global Portal to Information on Chemical Substances, website: [http://www.echemportal.org/echemportal/index?pageID=0 & request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0 & request_locale=en).
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>.
- NLM:ChemDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>.
- EPA: Integrated Risk Information System, website: <http://cfpub.epa.gov/iris/>.
- U.S. Department of Transportation:ERG, website: <http://www.phmsa.dot.gov/hazmat/library/erg>.
- Germany GESTIS-database on hazard substance, website: <http://gestis-en.itrust.de/>.

### Abbreviations and acronyms

CAS-Chemical Abstracts Service	CMR-Carcinogens, mutagens or substances toxic to reproduction
PC-STEL-Short term exposure limit	PC-TWA-Time Weighted Average
DNEL-Derived No Effect Level	IARC-International Agency for Research on Cancer
RPE-Respiratory Protective Equipment	PNEC-Predicted No Effect Concentration
LC50-Lethal Concentration 50%	LD50-Lethal Dose 50%
NOEC-No Observed Effect Concentration	EC50-Effective Concentration 50%
PBT-Persistent, Bioaccumulative, Toxic	POW-Partition coefficient Octanol:Water
BCF-Bioconcentration factor (BCF)	vPvB-very Persistent, very Bioaccumulative
IMDG-International Maritime Dangerous Goods	ICAO/IATA-International Civil Aviation Organization/International Air Transportation Association
UN-The United Nations	ACGIH-American Conference of Governmental Industrial Hygienists
NFPA-National Fire Protection Association	OECD-Organization for Economic Co-operation and Development

### Disclaimer

This Safety Data Sheet (SDS) was prepared according to REACH Regulation. The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.