

上海纳诺微新材料科技有限公司

Shanghai NNW New Materials Technology Co., Ltd.

Safety Data Sheet

Highlighter ink

Version: 1.1

Creation Date: 2022/10/13

Revision Date: 2022/10/13

Color: red

Country of Destination: EU

*Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

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

1.1 Product identifier

Product Name	Highlighter ink (red)
Synonyms	—
CAS NO.	—
ECNO.	—
Chemical Formula	—

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

Relevant identified uses	To write
Uses advised against	—

1.3 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, CHINA
Post code	200335
Telephone number	021-64476059
Fax number	021-64476096
Email	sales@nnwchina.com

1.4 Emergency phone number

Emergency phone number	+8613311812200
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SECTION 2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation(EC) No 1272/2008	The product is not classified according to the CLP regulation.
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2.2 Label elements

Hazard pictogram(s)	Not Applicable
Signal word	Not Applicable
Hazard statements	Not Applicable

2.3 Precautionary statements

Prevention	Not Applicable
Response	Not Applicable
Storage	Not Applicable
Disposal	Not Applicable

2.4 Other hazard

None of the ingredients ($\geq 0.1\%$) is identified as having endocrine disrupting properties according to Regulation (EU) 2017/2100.

SECTION 3 Composition/information on ingredients

3.1 Mixtures

➤ **Description:** Mixture of substances listed.

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC)No 1272/2008 [CLP] and amendments	Nanoform Particle Characteristics	SCL/M-Factor/ATF
1.56-81-5 2.200-289-5 3.Not Available 4.Not Available	15.0	Glycerol	Not Classified	Not Applicable	Not Applicable
1.2611-82-7 2.220-036-2 3.Not Available 4.Not Available	1.0-2.0	Acid Red 18	Not Classified	Not Applicable	Not Applicable
1.35773-43-4 2.252-722-2 3.Not Available 4.Not Available	0.5-2.5	3-(5-chlorobenzoxazol-2-yl)-7-(diethylamino)-2-benzopyrone	Not Classified	Not Applicable	Not Applicable
1.7732-18-5 2.231-791-2 3.Not Available 4.Not Available	80.5-83.5	Water, distilled, conductivity or of similar purity	Not Classified	Not Applicable	Not Applicable

SECTION 4 First aid measures

4.1 Description of first aid measures

General advice	Seek medical attention if necessary. Show this Safety Data Sheet (SDS) to the physician present.
Eye contact	Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
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.

4.2 Most important symptoms and effects, both acute and delayed

No known symptoms or effects, acute or delayed.

4.3 Indication of any immediate medical attention and special treatment needed

No special immediate medical attention or special treatment needed.

SECTION 5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	Use extinguishing media suitable for surrounding area.
Unsuitable extinguishing media	Water with full jet.

5.2 Special hazards arising from the substrate or mixture

May form irritant vapor in air under fire.

5.3 Advice for firefighters

1	Wear fully protective suit and mouth respiratory protective device.
2	Prevent fire extinguishing water from contaminating surface water or the ground water system.

3	Fight fire from a safe distance, with adequate cover.
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SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

6.2 Environmental precautions

1	Do not allow to enter sewers/ surface or ground water.
2	Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

1	Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
2	Dispose contaminated material as waste according to item 13.

6.4 Reference to other sections

1	See section 7 for information on safe handling.
2	See section 8 for information on personal protection equipment.
3	See section 13 for disposal in formation.

SECTION 7 Handling and storage

7.1 Precautions for handling

➤ Protective measure

1	Ensure good ventilation/exhaustion at the workplace.
2	Keep receptacles tightly sealed.
3	Keep away from heat and direct sunlight.
4	Avoid contact with skin and eyes.

➤ Information about fire - and explosion protection

Normal measures for preventive fire protection

7.2 Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms	Store in a cool location.Keep containers tightly closed .
Information about storage in one common storage facility	Store away from food stuff containers.Separated from strong oxidants and strong acids.
Further information about storage conditions	Store in cool, dry conditions in well sealed receptacles.

7.3 Specific end use(s)

See section 1.2

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
Glycerol	Inhalation 220 mg/m³ (Local, Chronic) Inhalation 132 mg/m³ (Local, Chronic) *	0.885mg/L (Water (Fresh)) 0.088 mg/L (Water - Intermittent release) 8.85 mg/L (Water (Marine)) 3.3 mg/kg sediment dw (Sediment (Fresh Water)) 0.33 mg/kg sediment dw (Sediment (Marine)) 1000 mg/L (STP) 0.141mg/kg soil dw (Soil)

Acid Red 18	Inhalation 24.7 mg/m ³ (Systemic, Chronic) Dermal 7 mg/kg bw/day (Systemic, Chronic) Inhalation 3.7 mg/m ³ (Systemic, Chronic)* Dermal 2.5 mg/kg bw/day (Systemic, Chronic)* Oral 2.5 mg/kg bw/day (Systemic, Chronic)*	0.1 mg/L (Water (Fresh)) 1 mg/L (Water - Intermittent release) 0.01 mg/L (Water (Marine)) 10 mg/L (STP) 0.392 mg/kg sediment dw (Sediment (Fresh Water)) 0.0392 mg/kg sediment dw (Sediment (Marine)) 0.0197 mg/kg soil dw (Soil)
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* Values for General Population

8.1.1 Occupational Exposure Limits (OEL)

➤ Ingredient data

Ingredient	Source	TWA	STEL	Peak
Glycerol, mist	AGS (Germany)	200 mg/m ³ ¹¹	400mg/m ³ ^{11/21}	Not data available
	DFG(Germany)	200 mg/m ³ ¹¹	400mg/m ³ ^{11/21}	Not data available
	MAK(Germany)	200l mg/m ³	Not data available	I(2)
	VLEP (France)	10 mg/m ³	Not data available	Not data available
	WELs(UK)	10 mg/m ³	Not data available	Not data available

Remarks: 1..Inhalable fraction 2. 15 minutes average value



➤ Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
Glycerol	45mg/m ³	180mg/m ³	1100mg/m ³

8.2 Engineering controls

General protective and hygienic measures	The usual precautionary measures are to be adhered to when handling chemicals.
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8.3 Personal protection equipment

General requirement	 
Eye protection	Tightly fitting safety goggles (approved by EN166(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	No special requirements.
Skin and body protection	No special requirements.
Other protection	No special equipment needed when handling small quantities.

SECTION 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Red	Viscosity	Dynamic	Not Available
Physical state	Liquid		Kinematic:	Not Available
Odour	Odourless	Vapour density (Air = 1)		Not determined
Odour threshold	Not determined	Density/Relative density		Not determined
pH (as supplied)	Not determined	Decomposition temperature		Not determined
Melting point/freezing point(°C)	Not determined	Particle Size		Not determined
Flash point(Closed cup,°C)	Not determined	Vapour pressure (kPa)		Not determined
Flammability	Not flammable liquid	Relative vapor density		Not determined
Evaporation rate	Not determined	Partition coefficient n-octanol/ water		Not determined
Upper Explosive Limit (%)	Not determined	Auto-ignition temperature(°C)		Not determined
Lower Explosive Limit (%)	Not determined	Explosive properties		Product does not present anexplosion hazard
Self-igniting	Not determined	Oxidising properties		Not determined

Taste	Not determined	Surface Tension (dyn/cm or mN/m)	Not determined
Volatile Component (%vol)	Not determined	Gas group	Not determined
pH as a solution (1%)	Not determined	VOC g/L	Not determined

9.2 Other information

No further relevant information available

SECTION 10 Stability and reactivity

10.1 Stability and reactivity

Reactivity	No decomposition if used according to specifications.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	No dangerous reactions known.
Conditions to avoid	No further relevant information available.
Incompatible materials	No further relevant information available.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11 Toxicological information

11.1 Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Not normally a hazard due to non-volatile nature of product.
Ingestion	The material has not been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Highlighter ink	TOXICITY Not data available	IRRITATION Not data available
Glycerol	TOXICITY Oral (rat) LD50: > 11500 mg/kg Inhalation(rat) LC50: > 5.85mg/l 4h Dermal (guinea pig) LD50: 45 ml/kg	IRRITATION Skin (rabbit):non-irritating(Draize) Eye (rabbit):non-irritating (Draize)
Acid Red 18	TOXICITY Oral (rat) LD50:>8000 mg/kg	IRRITATION Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)
3-(5-chlorobenzoxazol-2-yl)-4-7-(diethylamino)-2-5-Benzopyrone	TOXICITY Oral (rat) LD50:>5000 mg/kg	IRRITATION No data available

11.2 Carcinogenicity

Component	Cas No.	IARC	NTP
Glycerol	56-81-5	Not Listed	Not Listed
Acid Red 18	2611-82-7	Not Listed	Not Listed
3-(5-chlorobenzoxazol-2-yl)-7-(diethylamino)-2-benzopyrone	35773-43-4	Not Listed	Not Listed
Water	7732-18-5	Not Listed	Not Listed

11.2.1 Endocrine Disruption Properties

None of the ingredients ($\geq 0.1\%$) is considered to have endocrine-disrupting properties with respect to humans, as none of them meet the criteria set out in section A of Regulation (EU) No 2017/2100.

11.3 Primary irritant effect

Carcinogenicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Respiratory sensitization	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

SECTION 12 Ecological information

12.1 Toxicity

Highlighter ink	Endpoint	Test Duration (hr)	Species	Value
	Not data available	Not data available	Not data available	Not data available
Glycerol	Endpoint	Test Duration (hr)	Species	Value
	LC50	96h	Fish	54000 mg/l
	EC50	24h	Aquatic invertebrates	10000 mg/l
	NOEC	168h	Aquatic invertebrates	800 mg/l
	EC50	192h	Aquatic algae and cyanobacteria	2900 mg/l
Acid Red 18	Endpoint	Test Duration (hr)	Species	Value
	LC50	96h	Fish	1000 mg/l
	EC50	48h	Aquatic invertebrates	100 mg/l
	NOEC	168h	Aquatic plants other than algae	100 mg/l
	BCF	672h	Fish	≤ 0.55 l/kg (conc. 474mg/l)
	BCF	672h	Fish	≤ 5.6 l/kg (conc. 47.4mg/l)

12.2 Persistence and degradability

Component	Cas No.	Persistence (water/soil)
Glycerol	56-81-5	Readily biodegradable in water
Acid Red 18	2611-82-7	Not readily biodegradable

12.3 Bioaccumulative potential

Component	Cas No.	Bioaccumulative potential	Remarks
Glycerol	56-81-5	Potential for a low bioaccumulation	Log Kow=-1.75
Acid Red 18	2611-82-7	Potential for a low bioaccumulation	Log Kow=-2.267
3-(5-chlorobenzoxazol-2-yl)-7-(diethylamino)-2-benzopyrone	35773-43-4	Not data available.	Log Kow=4.9

12.4 Mobility in soil

Component	Cas No.	Soil Organic Carbon-Water Partitioning Coefficient (Koc)
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Glycerol	56-81-5	Koc=1
Acid Red 18	2611-82-7	Koc=3.16
3-(5-chlorobenzoxazol-2-yl)-7-(diethylamino)-2-benzopyrone	35773-43-4	Not data available.

12.5 Results of PBT and vPvB assessment

PBT	Not Available
vPvB	Not Available

12.6 Endocrine Disruption Properties

None of the ingredients ($\geq 0.1\%$) is considered to have endocrine-disrupting properties with respect to non-target organisms, as none of them meet the criteria set out in section B of Regulation (EU) No 2017/2100.

12.7 Other adverse effects

No further relevant information available.

SECTION 13 Disposal considerations

13.1 Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. 1. Do not allow wash water from cleaning or process equipment to enter drains. 2. It may be necessary to collect all wash water for treatment before disposal. 3. Recycle wherever possible 4. Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
Waste treatment options	Not Available
Sewage disposal options	Not Available

SECTION 14 Transport information

14.1 UN-Number

ADR/RID/ADN, IMDG, IATA	Not Available
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14.2 UN proper shipping name

ADR/RID/ADN, IMDG	Not Available
IATA	Not Available

14.3 Transport hazard class(es)

ADR/RID/ADN, IMDG, IATA	Not Available
Class	Not Available
Label	Not Available

14.4 Packing group

ADR/RID/ADN, IMDG, IATA	Not Available
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14.5 Environmental hazards

Not Applicable

14.6 Special precautions for user

Warning	Not Available
Hazard identification number (Kemler code)	Not Available
EMS Number:	Not Available

Stowage Category	Not Available
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14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not Applicable

14.8 Transport/Additional information

UN "Model Regulation"	Not Available
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SECTION 15 Regulatory information

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

Directive 2012/18/EU	
Named dangerous substances -ANNEX I	None of the ingredients is listed
Other regulations, limitations and prohibitive regulations	
SVHC CandidateList of REACH Regulation Annex XIV Authorisation	None of the ingredients is listed
REACH Regulation Annex XVII Restriction	None of the ingredients is listed
REACH Regulation Annex XIV Authorization List	None of the ingredients is listed.

15.2 Chemical safety assessment

A Chemical Safe Assessment has not been carried out.

15.3 International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS
Glycerol	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Water	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Acid Red 18	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
3-(5-chlorobenzoxazol-2-yl)-7-(diethylamino)-2-benzopyrone	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed

【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

SECTION 16 Other information

16.1 Information on revision

Creation Date	2022/10/13
Revision Date	2022/10/13
Reason for revision	—

16.2 Abbreviations and acronyms

SCL:Specific Concentration limits

ATE:Acute Toxicity Estimates

Cas:Chemical Abstracts Service

PC—TWA:Permissible Concentration-Time Weighted Average

PC—STEL:Permissible Concentration-Short Term Exposure Limit

IARC:International Agency for Research on Cancer

STEL:Short Term Exposure Limit

TEEL:Temporary Emergency Exposure Limit

ADR:Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG:International Maritime Code for Dangerous Goods

IATA:International Air Transport Association

GHS:Globally Harmonised System of Classification and Labelling of Chemicals

EINECS:European Inventory of Existing Commercial Chemical Substances

NOEC:No Observed Effect Concentration

BCF:BioConcentration Factors

ELINCS:European List of Notified Chemical Substances

DNEL:Derived No-Effect Level (REACH)

PNEC:Predicted No-Effect Concentration (REACH)

LC50:Lethal concentration, 50 percent

LD50:Lethal dose, 50 percent

PBT:Persistent, Bioaccumulative and Toxic

vPvB:very Persistent and very Bioaccumulative

16.3 Further information

The contents and format of this SDS are in accordance with Regulation (EC) No 1907/2006, its amendment Regulation (EU) No 2020/878 and (EC) No 1272/2008.

DISCLAIMER OF LIABILITY:

This Safety Data Sheet (SDS) was prepared according to REACH Regulation The data included was derived from international authoritative data base 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.