

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 |
|------------------------|----------------|

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. |
|---|--|

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 15minutes 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. |
|---|---|

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 information. |

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/m ³ (Local, Chronic) Inhalation 132 mg/m ³ (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) |
|--------------------|---|---|

* 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 2} | Not data available |
| | DFG(Germany) | 200 mg/m ³ ¹¹ | 400mg/m ³ ^{11 2} | 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. |
|---|--|

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 an explosion 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. 47.4mg/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) |
|-----------|---------|--|
|-----------|---------|--|

| | | |
|---|------------|---------------------|
| 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 (≥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 |
|--------------------------------|---------------|

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 |
|--------------------------------|---------------|

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 |
|------------------|---------------|

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 |
|-----------------------|---------------|

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 Candidate List 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.