

# SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0  
Creation Date: July 15, 2019  
Revision Date: July 15, 2019

## SECTION 1: Identification

### 1.1 GHS Product identifier

**Product name** 4-dimethylaminoazobenzene

### 1.2 Other means of identification

**Product number** -  
**Other names** Dimethyl yellow; Solvent Yellow 2; Benzenamine, N,N-dimethyl-4-(phenylazo)-

### 1.3 Recommended use of the chemical and restrictions on use

**Identified uses** Industrial and scientific research use.  
**Uses advised against** no data available

### 1.4 Supplier's details

**Company** Shanghai Yansheng Internet Technology Co., Ltd  
**Address** 513, A3 / F, green space future center, Fengxian District, Shanghai, 201400, China  
**Telephone** +86-4000-6969-66

### 1.5 Emergency phone number

**Emergency phone number** +86-4000-6969-66  
**Service hours** Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Acute toxicity - Category 3, Oral  
Carcinogenicity, Category 2

### 2.2 GHS label elements, including precautionary statements

**Pictogram(s)**



**Signal word** Danger  
**Hazard statement(s)** H301 Toxic if swallowed  
H351 Suspected of causing cancer

**Precautionary statement(s)**

**Prevention** P264 Wash ... thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P203 Obtain, read and follow all safety instructions before use.

<b>Response</b>	P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/... P301+P316 IF SWALLOWED: Get emergency medical help immediately. P321 Specific treatment (see ... on this label). P330 Rinse mouth. P318 IF exposed or concerned, get medical advice.
<b>Storage</b>	P405 Store locked up.
<b>Disposal</b>	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

## 2.3 Other hazards which do not result in classification

no data available

---

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
4-dimethylaminoazobenzene	4-dimethylaminoazobenzene	60-11-7	200-455-7	100%

---

## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

#### If inhaled

Fresh air, rest.

#### Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

#### Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

#### Following ingestion

Give one or two glasses of water to drink.

### 4.2 Most important symptoms/effects, acute and delayed

Exposure Routes: inhalation, skin absorption, ingestion, skin and/or eye contact  
Symptoms: Enlarged liver; liver, kidney disturbance; contact dermatitis; cough, wheezing, dyspnea (breathing difficulty); bloody sputum; bronchial secretions; frequent urination, hematuria (blood in the urine), dysuria; [potential occupational carcinogen] Target Organs: Skin, respiratory system, liver, kidneys, bladder (NIOSH, 2016)

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

#### Absorption, Distribution and Excretion

More than half of bound dye in all liver-cell fractions is assoc with sol proteins; of this, 80% is bound to fraction which accounts for only 15% of sol proteins.

---

## SECTION 5: Fire-fighting measures

### 5.1 Suitable extinguishing media

Fires involving this material can be controlled with a dry chemical, carbon dioxide or Halon extinguisher. (NTP, 1992)

### 5.2 Specific hazards arising from the chemical

Flash point data for this chemical are not available. It is probably combustible. (NTP, 1992)

### 5.3 Special protective actions for fire-fighters

In case of fire in the surroundings, use appropriate extinguishing media.

---

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting.

### 6.2 Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting.

### 6.3 Methods and materials for containment and cleaning up

PRECAUTIONS FOR "CARCINOGENS": A high-efficiency particulate arrestor (HEPA) or charcoal filters can be used to minimize amt of carcinogen in exhausted air ventilated safety cabinets, lab hoods, glove boxes or animal rooms. Filter housing that is designed so that used filters can be transferred into plastic bags without contaminating maintenance staff is avail commercially. Filters should be placed in plastic bags immediately after removal. The plastic bag should be sealed immediately. The sealed bag should be labelled properly. Waste liquids ... should be placed or collected in proper containers for disposal. The lid should be secured & the bottles properly labelled. Once filled, bottles should be placed in plastic bags, so that outer surface ... is not contaminated. The plastic bag should also be sealed & labelled. ... Broken glassware ... should be decontaminated by solvent extraction, by chemical destruction, or in specially designed incinerators. Chemical Carcinogens

---

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### 7.2 Conditions for safe storage, including any incompatibilities

PRECAUTIONS FOR "CARCINOGENS": Storage site should be as close as practical to lab in which carcinogens are to be used, so that only small quantities required for ... expt need to be carried. Carcinogens should be kept in only one section of cupboard, an explosion-proof refrigerator or freezer (depending on chemicophysical properties ...) that bears appropriate label. An inventory ... should be kept, showing quantity of carcinogen & date it was acquired. Facilities for dispensing ... should be contiguous to storage area. Chemical Carcinogens

---

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure limit values

<b>Component</b>	4-dimethylaminoazobenzene
<b>CAS No.</b>	60-11-7
	NIOSH usually recommends that occupational exposures to carcinogens be limited to the lowest feasible concn. NIOSH considers 4-dimethylaminoazobenzene to be a potential occupational carcinogen.

#### Biological limit values

no data available

## 8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

## 8.3 Individual protection measures, such as personal protective equipment (PPE)

### Eye/face protection

Wear safety goggles or eye protection in combination with breathing protection.

### Skin protection

Protective gloves. Protective clothing.

### Respiratory protection

Use ventilation, local exhaust or breathing protection.

### Thermal hazards

no data available

---

## SECTION 9: Physical and chemical properties and safety characteristics

Physical state	PHYSICAL DESCRIPTION: Yellow crystalline leaflets or an orange powder. (NTP, 1992)
Colour	YELLOW CRYSTALLINE LEAFLETS
Odour	no data available
Melting point/freezing point	295°C(dec.)(lit.)
Boiling point or initial boiling point and boiling range	193°C(lit.)
Flammability	Not combustible.
Lower and upper explosion limit/flammability limit	no data available
Flash point	170°C(lit.)
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	less than 1 mg/mL at 72° F (NTP, 1992)
Partition coefficient n-octanol/water	log Kow= 4.58
Vapour pressure	3e-07 mm Hg (est.) (NIOSH, 2016)
Density and/or relative density	1.027g/cm <sup>3</sup>
Relative vapour density	7.78 (NTP, 1992) (Relative to Air)
Particle characteristics	no data available

---

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

NIOSH considers 4-dimethylaminoazobenzene to be a potential occupational carcinogen. Decomposes on heating. This produces nitrogen oxides.

### 10.2 Chemical stability

no data available

### 10.3 Possibility of hazardous reactions

4-DIMETHYLAMINOAZOBENZENE can detonate, particularly if sensitized by the presence of metal salts or strong acids. May form toxic gases with acids, aldehydes, amides, carbamates, cyanides, inorganic fluorides, halogenated organics, isocyanates, ketones, metals, nitrides, peroxides, phenols, epoxides, acyl halides, and strong oxidizing or reducing agents. May form flammable gases with alkali metals. May react explosively with strong oxidizing agents, metal salts, peroxides, and sulfides. May react explosively with strong oxidizing agents, metal salts, peroxides, and sulfides.

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

STABILITY: This chemical is sensitive to heat and light. Solutions of this chemical in water, DMSO, 95% ethanol or acetone should be stable for 24 hours under normal lab conditions. REACTIVITY: This chemical is incompatible with strong oxidizing agents and strong acids. (NTP, 1992)

### 10.6 Hazardous decomposition products

no data available

---

## SECTION 11: Toxicological information

#### Acute toxicity

- Oral: no data available
- Inhalation: no data available
- Dermal: no data available

#### Skin corrosion/irritation

no data available

#### Serious eye damage/irritation

no data available

#### Respiratory or skin sensitization

no data available

#### Germ cell mutagenicity

no data available

#### Carcinogenicity

The Human Health Assessment Group in EPA's Office of Health and Environmental Assessment has evaluated dimethylaminoazobenzene for carcinogenicity. According to their analysis, the weight-of-evidence for dimethylaminoazobenzene is group B2, which is based on no evidence in humans and sufficient evidence in animals. As a group B2 chemical, dimethylaminoazobenzene is considered to be probably carcinogenic to humans.

#### Reproductive toxicity

No information is available on the reproductive or developmental effects of 4-dimethylaminoazobenzene in humans. Animal studies have reported birth defects in the offspring of mice exposed to 4-dimethylaminoazobenzene.

#### STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract.

#### STOT-repeated exposure

Repeated or prolonged contact with skin may cause dermatitis. This substance is possibly carcinogenic to humans.

#### Aspiration hazard

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

---

## SECTION 12: Ecological information

### 12.1 Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

### 12.2 Persistence and degradability

Recovery of 0.29 ppm N,N-dimethyl-p-(phenylazo)aniline incubated with an original culture of settled domestic wastewater after 7 days was at trace levels and it was not detected following 1st, 2nd, and 3rd subcultures after 7 days each(1).

### 12.3 Bioaccumulative potential

Using a reported log octanol/water partition coefficient of 4.58(1), an estimated BCF of 1780 was calculated(2, SRC). Based on this estimated BCF, N,N-dimethyl-p-(phenylazo)aniline should bioconcentrate in aquatic organisms(SRC).

### 12.4 Mobility in soil

Using a reported log octanol/water partition coefficient of 4.58(1), an estimated Koc of 7390 was calculated(2, SRC). Based on this estimated Koc, N,N-dimethyl-p-(phenylazo)aniline should adsorb to soils and sediment. Since N,N-dimethyl-p-(phenylazo)aniline has a pKa of 3.226 at 25 deg C(3), and it exists partially as a cation, the extent of its adsorption to soils and sediments may be affected by the pH of the medium.

### 12.5 Other adverse effects

no data available

---

## SECTION 13: Disposal considerations

### 13.1 Disposal methods

#### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

---

## SECTION 14: Transport information

### 14.1 UN Number

ADR/RID: UN2811 (For reference only, please check.)

IMDG: UN2811 (For reference only, please check.)

IATA: UN2811 (For reference only, please check.)

### 14.2 UN Proper Shipping Name

ADR/RID: TOXIC SOLID, ORGANIC, N.O.S. (For reference only, please check.)

IMDG: TOXIC SOLID, ORGANIC, N.O.S. (For reference only, please check.)

IATA: TOXIC SOLID, ORGANIC, N.O.S. (For reference only, please check.)

### 14.3 Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)

IMDG: 6.1 (For reference only, please check.)

IATA: 6.1 (For reference only, please check.)

#### 14.4 Packing group, if applicable

ADR/RID: I (For reference only, please check.)

IMDG: I (For reference only, please check.)

IATA: I (For reference only, please check.)

#### 14.5 Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

#### 14.6 Special precautions for user

no data available

#### 14.7 Transport in bulk according to IMO instruments

no data available

---

### SECTION 15: Regulatory information

#### 15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
4-dimethylaminoazobenzene	4-dimethylaminoazobenzene	60-11-7	200-455-7
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

---

### SECTION 16: Other information

#### Information on revision

Creation Date July 15, 2019

Revision Date July 15, 2019

#### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

#### References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, 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>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

**Any questions regarding this SDS, Please send your inquiry to [sds@xixisys.com](mailto:sds@xixisys.com)**

---

*Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.*