



SIGMA-ALDRICH

Material Safety Data Sheet

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Section 1 - Product and Company Information

Product Name	Amaranth	
Product Number	A1016	
Brand	Sigma Chemical	
Company	Sigma-Aldrich	
Address	3050 Spruce Street	
City, State, Zip, Country	SAINT LOUIS, MO 63103 US	
Technical Phone:	800-325-5832	Emergency Phone: 314-776-6555
Fax:	800-325-5052	

Section 2 - Composition/Information on Ingredient

<u>Substance Name</u>	<u>CAS #</u>	<u>SARA 313</u>	<u>EC no</u>	<u>Annex I Index Number</u>
AMARANTH	915-67-3	No	213-022-2	

Formula C20H11N2Na3O10S3
Synonyms Acetacid Red 2BR, Acid Amaranth, Acid Amaranth I, Acid Amaranth N, Acid Leather Red I 2BW, Acid Leather Rubine S, Acid Red 27, Acilan Red SE, Aizen Amaranth, Amacid Amaranth, Amaranth (Czech), Amaranth, Amaranth A, Amaranth B, Amaranth BPC, Amaranthe, Amarathe USP (biological stain), Amaranth Extra, Amaranth Lake, Amaranth S, Amaranth S Specially Pure, Amaranth WD, Azo Red R, Azo Rubine SF, Azo Rubine S.FQ, Azorubin S, Azo Ruby S, Bordeaux, Bordeaux S, Bordeaux S Extra Conc, A Export, Bordeaux S Extra PureA, Calcoacid Amaranth, Canacert Amaranth, Certicol Amaranth S, Cerven kyselá 27 (Czech), Cerven potravinarska 9 (Czech), C.I. 184, C.I. 16185, C.I. Acid Red 27, C.I. Acid Red 27, trisodium salt, C.I. Food Red 9, Cilefa Rubine 2B, Daishiki Amaranth, D and CRed 2, Dolkwal Amaranth, Dye FDC Red 2, Dye Red Raspberry, E 123, Edicol Amaranth, Edicol Supra Amaranth A, EEC No. 123, Eurocert Amaranth, Fast Red, FD and C Red No. 2, FD&C Red No. 2 Aluminium Lake, Food Red 2, Food Red 9, Fruit Red A Geigy, HD Amaranth B, HD Amaranth Supra, Hexacert Red No. 2, Hexacol Amaranth B Extra, Hidacid Amaranth, Hispacid Red AM, 2Hydroxy-1,1'-azonaphthalene-3,6,4'-trisulfonic acid trisodium salt, 3-Hydroxy-4-((4-sulfo-1-naphthalenyl)azo)-2,7-naphthalenedisulfonic acid trisodium salt, 3-Hydroxy-4-((4-sulpho-1-naphthalenyl)azo)-2,7-naphthalenedisulphonic acid, trisodium salt, Java Amaranth, Kayaku Amaranth, Kayaku Food Colour Red No. 2, Kca Foodcol Amaranth A, Kition Rubine S, Lissamine Amaranth AC, L-Rot 3 (German), Maple Amaranth, Naphthol Red LZS, Naphthol Red SI, Naphthol Red S Specially Pure, Naphtholrot S (German), Neklacid Red A, Rakuto Amaranth, Raspberry red for jellies, 1302 Red, 1508 Red, Red dye No. 2, Red No. 2, Saai Amaranth, S-Azo Rubine, Schultz Nr. 212 (German), Shikiso Amaranth, Solar Red O, 1-(4-Sulfo-1-naphthylazo)-2-naphthol-3,6-disulfonic acid trisodium salt, 1-(4-Sulpho-1-naphthylazo)-2-naphthol-3,6-disulphonic acid, trisodium salt, Takaoka Amaranth, Tetracid Red A, Toyo Amaranth, Trisodium salt of 1-(4-sulfo-1-naphthylazo)-2-naphthol-3,6-disulfonic acid, Trisodium salt of 1-(4-sulpho-1-naphthylazo)-2-naphthol-3,6-disulphonic acid, Usacert Red No. 2, Victoria Rubine O, Victoria Rubine O for food, Whortleberry Red, Wool Bordeaux 6RK, Wool Red 40F

Section 3 - Hazards Identification

Emergency Overview

Irritant.
Irritating to eyes, respiratory system and skin.

HMIS Rating

Health: 2 Flammability: 0 Reactivity: 0

NFPA Rating

Health: 2 Flammability: 0 Reactivity: 0

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure

In case of contact, immediately wash skin with soap and copious amounts of water.

Eye Exposure

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A

Extinguishing Media

Suitable

Water spray, Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting

Protective Equipment

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)

Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure(s) of Personal Precaution(s)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling

User Exposure

Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage
Suitable
Keep tightly closed.

Section 8 - Exposure Controls / PPE

Engineering Controls
Use only in a chemical fume hood. Safety shower and eye bath. Mechanical exhaust required.

Personal Protective Equipment

Respiratory

Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.

Hand

Compatible chemical-resistant gloves.

Eye

Chemical safety goggles.

General Hygiene Measures
Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance

Physical State
Solid

Molecular Weight 604.47 AMU

pH N/A
BP/BP Range N/A
MP/MP Range N/A
Freezing Point N/A
Vapor Pressure N/A
Vapor Density N/A
Saturated Vapor Conc. N/A
SG/Density N/A
Bulk Density N/A
Odor Threshold N/A
Volatile% N/A
VOC Content N/A
Water Content N/A
Solvent Content N/A
Evaporation Rate N/A
Viscosity N/A
Partition Coefficient N/A
Decomposition Temp. N/A
Flash Point °F N/A
Flash Point °C N/A

Explosion Limits N/A

Flammability N/A
Autoignition Temp N/A

Solubility N/A

N/A = not available

Section 10 - Stability and Reactivity

Stability

Stable

Stable.

Materials to Avoid

Strong oxidizing agents

Hazardous Decomposition Products

Hazardous Decomposition Products

Carbon monoxide, Carbon dioxide, Nitrogen oxides, Sulfur oxides

Hazardous Polymerization

Hazardous Polymerization

Will not occur.

Section 11 - Toxicological Information

Route of Exposure

Skin Contact

Causes skin irritation.

Skin Absorption

May be harmful if absorbed through the skin.

Eye Contact

Causes eye irritation.

Inhalation

Material is irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion

May be harmful if swallowed.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS Number: QJ6550000

Toxicity Data

Intraperitoneal - Rat: 1 GM/KG (LD50)

Intravenous - Rat: 1 GM/KG (LD50)

Intraperitoneal - Mouse: 1 GM/KG (LD50)

Remarks: Behavioral: Somnolence (general depressed activity).

Chronic Exposure - Carcinogen

Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

Rat - Oral: 680 GM/KG 14W I

Result: Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Gastrointestinal: Tumors. Blood: Lymphomas including Hodgkin's disease.

Rat - Oral: 1200 GM/KG 78W C

Result: Tumorigenic: Carcinogenic by RTECS criteria. Blood: Lymphomas including Hodgkin's disease.

Rat - Oral: 1643 GM/KG 78W C

Result: Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Gastrointestinal: Tumors.

IARC Carcinogen ListRating
Group 3**Chronic Exposure - Teratogen**

<u>Species</u>	<u>Dose</u>	<u>Route of Application</u>	<u>Exposure Time</u> (MULTIGENERATION S)
Rat	65 MG/KG	Oral	
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.			
Mouse	4550 UL/KG	Oral	(4W MALE/4W PRE-2W POST)
Result: Effects on Embryo or Fetus: Other effects to embryo.			
Hamster	100 MG/KG	Intravenous	(8D PREG)
Result: Specific Developmental Abnormalities: Musculoskeletal system.			

Chronic Exposure - Mutagen

<u>Species</u>	<u>Dose</u>	<u>Route</u>	<u>Mutation test</u>
Mouse	2 GM/KG	Oral	DNA damage
Hamster	1 GM/L	48H	fibroblast Cytogenetic analysis
Hamster	2 GM/L		lung Cytogenetic analysis

Chronic Exposure - Reproductive Hazard

<u>Species</u>	<u>Dose</u>	<u>Route of Application</u>	<u>Exposure Time</u>
Rat	548 MG/KG	Oral	(52W PRE)
Result: Maternal Effects: Menstrual cycle changes or disorders.			
Rat	548 MG/KG	Oral	(52W PRE)
Result: Maternal Effects: Menstrual cycle changes or disorders.			
Rat	547 MG/KG	Oral	(MULTIGENERATION S)
Result: Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated). Effects on Newborn: Live birth index (# fetuses per litter; measured after birth).			
Rat	547 MG/KG	Oral	(MULTIGENERATION S)
Result: Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated). Effects on Newborn: Live birth index (# fetuses per litter; measured after birth).			
Rat	33 MG/KG	Oral	(1-22D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Fertility: Litter size (e.g., # fetuses per litter; measured before birth).			
Rat	33 MG/KG	Oral	(1-22D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Fertility: Litter size (e.g., # fetuses per litter; measured before birth).			
Rat	296 MG/KG	Oral	(MULTIGENERATION S)
Result: Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive) Effects on Newborn: Growth statistics (e.g., reduced weight gain).			
Rat	296 MG/KG	Oral	(MULTIGENERATION S)
Result: Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive) Effects on Newborn: Growth statistics (e.g., reduced weight gain).			
Rat	548 MG/KG	Oral	(52W MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).			
Rat	548 MG/KG	Oral	(52W MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).			
Mouse	3528 UG/KG	Oral	(4W MALE/4W PRE-3W POST)
Result: Effects on Newborn: Behavioral.			
Mouse	3528 UG/KG	Oral	(4W MALE/4W PRE-3W POST)
Result: Effects on Newborn: Behavioral.			
Mouse	4900 UL/KG	Oral	(4W MALE/4W PRE-3W POST)
Result: Effects on Newborn: Live birth index (# fetuses per litter; measured after birth).			

Mouse	4900 UL/KG	Oral	(4W MALE/4W PRE-3W POST)
Result: Effects on Newborn: Live birth index (# fetuses per litter; measured after birth).			
Mouse	12 ML/KG	Oral	(4W MALE/4W PRE-4D POST)
Result: Effects on Newborn: Behavioral.			
Mouse	12 ML/KG	Oral	(4W MALE/4W PRE-4D POST)
Result: Effects on Newborn: Behavioral.			
Mouse	250 MG/KG	Intraperitoneal	(1D MALE)
Result: Effects on Fertility: Male fertility index (e.g., # males impregnating females per # males exposed to fertile nonpregnant females). Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).			
Mouse	250 MG/KG	Intraperitoneal	(1D MALE)
Result: Effects on Fertility: Male fertility index (e.g., # males impregnating females per # males exposed to fertile nonpregnant females). Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).			
Rabbit	16500 UG/KG	Oral	(6-16D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).			
Rabbit	16500 UG/KG	Oral	(6-16D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).			

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations**Appropriate Method of Disposal of Substance or Preparation**

Contact a licensed professional waste disposal service to dispose of this material.
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information**DOT****Proper Shipping Name:** None**Non-Hazardous for Transport** This substance is considered to be nonhazardous for transport.**IATA****Non-Hazardous for Air Transport** Non-hazardous for air transport.**Section 15 - Regulatory Information****EU Additional Classification****Symbol of Danger:** Xi**Indication of Danger**

Irritant.

Risk Statements R: 36/37/38

Irritating to eyes, respiratory system and skin.

Safety Statements S: 36/37/39

Wear suitable protective clothing, gloves, and eye/face protection.

US Classification and Label Text**Indication of Danger**

Irritant.

Risk Statements

Irritating to eyes, respiratory system and skin.

Safety Statements

Wear suitable protective clothing, gloves, and eye/face protection.

United States Regulatory Information

SARA Listed: No

TSCA Inventory Item: Yes

Canada Regulatory Information

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

Warranty

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. SigmaAldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice packing slip for additional terms and conditions of sale. Copyright 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.