

1. Identification

Product identifier:

Trade name: Chiguard® 228

Substance name: N,N',N'',N'''-tetrakis(4,6-bis(butyl-(N-methyl-2,2,6,6-tetramethylpiperidin-4-yl)amino)triazin-2-yl)-4,7-diazadecane-1,10-diamine

CAS No.: 106990-43-6

Other means of identification:

Not available

Recommended use of the chemical and restrictions on use

Recommended use of the substance or mixture: Hindered Amine Light Stabilizer (HALS)

Restrictions on use: There are no known uses of this chemical that are specifically advised against.

Manufacturer/supplier:

Chitec Technology Co., Ltd.

Address: 16F, No.51, Sec.2, Keelung Rd., Taipei City 110, Taiwan, R.O.C.

Tel: +886-2-2700-6678

Fax: +886-2-2700-6608

Emergency telephone number:

+886-2-2700-6678

[USA only]: 1-800-424-9300 (CHEMTREC, 24 hours)

Note: This CHEMTREC number is strictly for emergencies, and not for technical assistance.

2. Hazard(s) Identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200/GHS:

Skin Sensitization, category 1

Hazardous to the aquatic environment Aquatic Chronic 2

Label elements in accordance with paragraph (d) of §1910.1200/GHS:

GHS pictogram(s):



Signal word:

Warning

Hazard statement(s):

May cause an allergic skin reaction.

Toxic to aquatic life with long lasting effects.

Precautionary statement(s):

Avoid breathing dust/fume/gas/mist/vapors/spray

Contaminated work clothing should not be allowed out of the workplace.

Wear protective gloves/protective clothing/eye protection/face protection.

Avoid release to the environment.

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

Specific treatment.

Take off contaminated clothing and wash it before reuse.

Collect spillage.

Dispose of contents/container to local/regional/national/international regulations.

Any hazards not otherwise classified that have been identified during the classification process:

N/A

3. Composition/information on ingredients

Chemical name:

N,N',N'',N'''-tetrakis(4,6-bis(butyl-(N-methyl-2,2,6,6-tetramethylpiperidin-4-yl)amino)triazin-2-yl)-4,7-diazadecane-1,10-diamine

CAS number: 106990-43-6

EC number: 401-990-0

Purity % (w/w): 90% min.

Impurity: There are no ingredients present, which, within the current knowledge of the manufacturer and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section

Impurities contribute to the classification of the substance: N/A

4. First-aid measures

In case of inhalation:

Remove to fresh air and summon medical help if respiratory irritation develops or if breathing becomes difficult.

In case of skin contact:

Wipe away excess material with dry towel and then wash affected areas with plenty of water for several minutes. Get medical attention immediately if irritation occurs.

In case of eye contact:

Immediately wash affected eyes for several minutes under running water with eyelids held open. Get medical attention immediately if irritation occurs.

In case of ingestion:

Wash out mouth with water and then drink plenty of water, and summon physician. Do not give anything by mouth to an unconscious or convulsing person.

Most important symptoms/effects, acute and delayed:

Skin: No information available.

Indication of immediate medical attention and special treatment needed:

Persons with pre-existing skin, eye, or respiratory disease may be at increased risk.

Attending physician should treat exposed patients symptomatically.

5. Fire-fighting and measures

Extinguishing media

Suitable extinguishing media: Foam, dry chemical powder and water fog.

*Note: Prevent fire extinguishing water from contaminating surface water or the ground water system.

Unsuitable extinguishing media: Water jet.

Specific hazards arising from the chemical:

Thermal decomposition and burning will produce toxic fume, carbon monoxide, carbon dioxide and nitrogen oxides.

Special protective equipment and precautions for firefighters:

Wear full protective clothing. Wear self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment, and emergency procedures:

No action shall be taken involving any personal risk or without suitable training. Remove all sources of ignition. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Avoid dust formation. Avoid inhalation of vapors/dust. Avoid contact with eyes, skin and clothing. Put on appropriate personal protective equipment.

Methods and materials for containment and cleaning up:

Remove unnecessary people. Avoid raising dust. Pick up with inert absorbent material (e.g. sand, earth etc.). Place into approved waste containers. Wear suitable protective equipment. Should not be released into the environment. Collect the spilled product into suitable containers which must be tightly sealed and properly labeled. Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

7. Handling and storage

Precautions for safe handling:

In accordance with good industrial practice, handle with care and avoid unnecessary personal contact. Keep away from ignition sources. Avoid contact with eyes and prolonged or repeated skin contact. Avoid continuous or repetitive breathing of dust.

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection. Closed containers should only be opened in well-ventilated areas

Personal hygiene:

Wear appropriate personal protective equipment. As a general rule, not to eat, drink and smoke in work areas; to wash hands thoroughly after handling and; to remove contaminated clothing and protective equipment before entering eating areas.

Conditions for safe storage, including any incompatibilities:

Sensitive to visible light and any exposure to sunlight should be avoided. Keep container tightly sealed when not in use and during transport. Store in a cool place. Store in the original container securely closed in a dry and well-ventilated place. Prevent contamination with foreign materials. Keep ignition sources away - Do not smoke. Store containers and drums upright; do not drag or slide; and move in a carefully supervised manner with a suitable hand truck.

Condition and materials to avoid:

Direct sunlight, excessive light, moisture, oxidizing conditions, excessively high temperatures, sparks and open flame, dusting conditions.

8. Exposure controls and personal protection

OSHA permissible exposure limit (PEL):

There are no currently occupational exposure limit values established for this substance.

ACGIH Threshold Limit Value (TLV):

There are no currently threshold limit values established for this substance.

Other exposure limit recommended:

Not available.

Appropriate engineering controls:

Normal ventilation for standard manufacturing procedures is generally adequate.

Local exhaust should be used when large amounts are released.

Mechanical ventilation should be used in low or enclosed places.

Individual protection measures:

Eye and face protection: Safety goggle is recommended.

Skin protection: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hand protection: For prolonged or repeated contact use protective gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory protection: Suitable dust mask is recommended where dust arises from use. Use NIOSH-certified (or equivalent) respirators.

Body protection: Protective work clothing, closed footwear.

9. Physical / chemical properties

Appearance	:	Light yellow crystalline powder
Odor	:	Faint
Odor threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	115-150 °C
Boiling point/ boiling range	:	No data available
Flash point	:	No data available
Evaporation rate	:	No data available
Flammability	:	No data available
Upper/lower flammability or explosive limits	:	No data available
Vapor pressure	:	< 10 Pa @ 25 °C (first vapor pressure); 4.0 x 10 ⁻¹¹ Pa @ 20 °C 9.6 x 10 ⁻¹¹ Pa @ 25 °C (extrapolated values)
Vapor density	:	No data available
Density	:	1.03 g/cm ³
Solubility	:	< 10 mg/L @ 20 °C (slightly soluble in water)
Partition coefficient - n-octanol/water	:	Log Pow = 4.5 @ pH 7.0 Log Pow = - 0.065 @ pH 6.0 Log Pow = - 0.94 @ pH 5.2
Auto flammability	:	> 130 °C; No self ignition up to the melting point.
Decomposition temperature	:	ca. 300 °C
Viscosity	:	No data available
Volatiles	:	0.5% max.

10. Stability and reactivity

Reactivity:	No specific information
Chemical stability:	Stable under ordinary conditions of use and storage. Heat will contribute to instability.
Possibility of hazardous reactions:	No specific information
Conditions to avoid:	Avoid heat, flames, sparks and other sources of ignition. Avoid electro-static discharges. Avoid contact with incompatible materials.
Incompatible materials:	Strong acid, strong base and strong oxidizing agents. Sensitive to visible light.
Hazardous decomposition products:	Thermal decomposition and burning will produce toxic fume, carbon monoxide, carbon dioxide and nitrogen oxides.

11. Toxicological information

Information on the likely routes of exposure:

Primary routes of exposure: Inhalation: eye contact; skin contact/absorption.

Relatively unlikely route of exposure: ingestion.

Symptoms related to the physical, chemical and toxicological characteristics:

Skin: No information available.

Delayed and immediate effects and also chronic effects from short and long term exposure:

Short term exposure: Potential immediate effects: No information available.

Potential delayed effects: No information available.

Long term exposure: Potential immediate effects: No information available.

Potential delayed effects: No information available.

Potential chronic health effects: No information available.

Numerical measures of toxicity

Acute toxicity:

Acute Oral toxicity: LD₅₀ > 5,000 mg/kg bw (rat);

Acute Inhalation toxicity: No data available.

Acute Dermal toxicity: LD₅₀ > 2,000 mg/kg bw (rat);

Skin corrosion/irritation:

Skin irritation (rabbit): Not-irritating.

Serious eye damage/irritation:

Eye Irritation (rabbit): Not-irritating.

Respiratory or skin sensitization:

Skin sensitization (Guinea Pigs): Sensitizing.

CMR effects (Carcinogenicity, Mutagenicity and Toxicity for Reproduction):

Carcinogenicity: No data available.

Mutagenicity: No data available.

Toxicity for Reproduction: No data available.

STOT-single exposure and repeated exposure:

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

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12. Ecological information

Ecotoxicity:

Short-term toxicity to fish: LC₅₀ > 119 mg/L/96h

Short-term toxicity to aquatic invertebrates: EC₅₀ = 7.3 mg/L/24h

Long-term toxicity to aquatic invertebrates: EC₅₀ = 12 mg/L/21d
Toxicity to aquatic algae and cyanobacteria: EC₅₀ = 16 mg/L/72h
Toxicity to microorganisms: IC₅₀ > 1000 mg/L/3h

Persistence and degradability:

Not readily biodegradable

Bioaccumulative potential:

No information available

Mobility in the soil:

No information available

Other adverse effects:

No information available

13. Disposal considerations

Waste from residues/unused products:

Residual chemical should be disposed by incineration or by other modes or disposal in compliance with local/regional/national/international regulations.

Waste treatment methods:

The generation of waste should be avoided or minimized wherever possible. Disposal of this substance or product containing this chemical, solutions and any by-products must be dumped or incinerated in accordance with local/regional/national/international regulations.

Contaminated packaging:

Contaminated packaging material should be treated equivalent to residual chemical. Clean packaging material should be subjected to waste management schemes (recovery recycling, reuse) according to local/regional/national/international regulations.

Hazardous waste: No information available

Recommendation: No information available

14. Transport information

UN number:	UN 3077		
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (N,N',N'',N'''-tetrakis(4,6-bis(butyl-(N-methyl-2,2,6,6-tetramethylpiperidin-4-yl)amino)triazin-2-yl)-4,7-diazadecane-1,10-diamine)		
Transport hazard class:	DOT (49 CFR 172)	IATA	IMDG
	9	9	9
Packing group:	III		
Marine pollutant (Yes/No):	Yes		
Transportation in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Product is not supplied in bulk.		
Special precautions:	See Section 7 - Conditions for safe storage, including any incompatibilities:		

15. Regulatory information

Chiguard® 228 is listed on the following inventories:

Australia: AIIIC

Canada: DSL

China: IECSC

Europe: ELINCS

Japan: ENCS

Korea: ECL

New Zealand: NZIoC

Philippines: PICCS

USA: TSCA

Taiwan: TCSI

RCRA status: Not a hazardous waste under RCRA (40 CFR 261).

CERCLA status: Not listed.

SARA/TITLE III - TOXIC CHEMICALS LIST: This product does not contain a toxic chemical for routine annual toxic chemical release reporting under sec. 313 (40 CFR 372).

16. Other information

Last Revision Date: See bottom of each page under 'Revised Date'

Shelf life: 2 years minimum in sealed containers protected from light and air.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.