

Material Safety Data Sheet

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

Product name: TINUVIN 328K

Product code: 10008112

Supplier: Carestream Health, Inc., 150 Verona Street, Rochester, New York 14608; Carestream Health Canada Company, 6 Monogram Place, Suite 200, Toronto, Ontario, M9R 0A1

For Emergency Health Information call, (800) 424-9300

For other information contact 800-328-2910.

Synonyms: None.

2. Hazards identification

WARNING!

MAY CAUSE BLOOD DISORDERS BASED ON ANIMAL DATA

MAY CAUSE LIVER DAMAGE BASED ON ANIMAL DATA

MAY CAUSE KIDNEY DAMAGE BASED ON ANIMAL DATA

HARMFUL IF INHALED, ABSORBED THROUGH SKIN, OR SWALLOWED

POWDERED MATERIAL MAY FORM EXPLOSIVE DUST-AIR MIXTURES

CAN DECOMPOSE AT ELEVATED TEMPERATURES

HMIS II Hazard Ratings:

Health - 2*, Flammability - 1, Reactivity (Stability) - 0

NFPA Hazard Ratings:

Health - 2, Flammability - 1, Instability - 0

NOTE: HMIS II and NFPA hazard indexes involve data review and interpretation that may vary among companies. They are intended only for rapid, general identification of the magnitude of the potential hazards. An asterisk (*), in the HMIS II health field, designates potential chronic or target organ hazards. To adequately address safe handling, ALL information in this MSDS must be considered.

3. Composition/information on ingredients

| Weight % | Components (CAS-No.) |
|----------|---|
| 100 | 2-(2'-hydroxy-3',5'-di-tert-amylphenyl)benzotriazole (25973-55-1) |

4. First aid measures

Inhalation: Move to fresh air. Treat symptomatically. Get medical attention.

Eyes: Any material that contacts the eye should be washed out immediately with water. Get medical attention if symptoms occur.

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Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash contaminated clothing before re-use. Destroy or thoroughly clean contaminated shoes.

Ingestion: Only induce vomiting at the instruction of medical personnel. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

5. Fire-fighting measures

Extinguishing Media: water spray, carbon dioxide (CO₂), dry chemical.

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing. Fire or excessive heat may produce hazardous decomposition products. Use water spray to cool unopened containers.

Hazardous Combustion Products: Carbon oxides, nitrogen oxides (NO_x)

Unusual Fire and Explosion Hazards: Fire or high temperatures may cause decomposition. Dust may form explosive mixture in air.

6. Accidental release measures

Methods for cleaning up: Shovel into suitable container for disposal. Avoid dust formation. Clean surface thoroughly to remove residual contamination.

7. Handling and storage

Personal precautions: Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Ensure adequate ventilation. Wash thoroughly after handling.

Prevention of Fire and Explosion: Keep away from heat and sources of ignition. Exercise caution if heating, especially in a closed container. Dust may form explosive mixture in air. Minimize dust generation and accumulation. Ensure adequate ventilation. Refer to NFPA Pamphlet No. 654, "Prevention of Fire and Dust Explosions in the Chemical, Dye, Pharmaceutical, and Plastics Industries." Keep from contact with oxidizing materials.

Storage: Keep container tightly closed. Keep away from incompatible substances (see Incompatibility section.)

8. Exposure controls / personal protection

Occupational exposure controls

| Chemical Name | Regulatory List | Value Type | Value |
|--|-----------------|------------------------------|------------------------|
| 2-(2'-hydroxy-3',5'-di-tert-amylphenyl)benzotriazole | EK HPG | Time Weighted Average (TWA): | 0.03 mg/m ³ |

Ventilation: Good general ventilation should be used. Ventilation should be sufficient so that applicable

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occupational exposure limits are not exceeded. Ventilation rates should be matched to conditions. Supplementary local exhaust ventilation, closed systems, or respiratory protection may be needed in special circumstances.

Respiratory protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved respirator must be worn. Respirator type: N95 Particulate Filter. If respirators are used, a program should be instituted to assure compliance with OSHA Standard 29 CFR 1910.134.

Eye protection: Wear safety glasses with side shields (or goggles).

Skin and body protection: Wear impervious gloves and protective clothing appropriate for the risk of exposure.

Recommended Decontamination Facilities: Safety shower, eye wash, washing facilities as appropriate to condition of use.

9. Physical and Chemical Properties

Physical form: solid

Colour: light yellow

Odour: odourless

Specific gravity: No data available

Vapour pressure: No data available

Vapor density (air = 1): No data available

Volatile fraction by weight: No data available

Boiling point/range: 427.0 °C (800.6 °F)

Melting point/range: 80.0 °C (176.0 °F)

Water solubility: insoluble

pH: not applicable

Flash point: 241.6 °C (467.0 °F) (micro Cleveland open cup)

10. Stability and reactivity

Stability: Stable under normal conditions. Safe handling temperatures are dependent on specific conditions of use and are typically substantially below the onset temperature. Consult your technical safety experts.

Exotherm onset temperature: 461 °C by DSC.

Incompatibility: Strong oxidizing agents.

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Hazardous decomposition products: None under normal conditions of use.

Hazardous Polymerization: Hazardous polymerisation does not occur.

11. Toxicological information

Effects of Exposure

General advice: Based on animal data, may cause adverse effects on the following organs/systems: blood, liver, kidney, testes, uterus, prostate.

Inhalation: Harmful if inhaled.

Eyes: No specific hazard known. May cause transient irritation.

Skin: Harmful if absorbed through skin.

Ingestion: Harmful if swallowed.

Acute Toxicity Data:

- Oral LD50 (rat): > 7,750 mg/kg
- Dermal LD50: > 1,100 mg/kg
- Skin irritation: none
- Skin Sensitization: negative

Definitions for the following section(s): LOEL =lowest-observed-effect level, LOAEL = lowest-observed-adverse-effect, NOAEL = no observed-adverse-effect level, NOEL =no-observed-effect level.

Repeated dose toxicity:

- Oral (90 days,): NOEL; 45 mg/kg/day (target organ effects: liver)
- Oral (28-day, rat): NOEL; 0.5 mg/kg/day (target organ effects: liver)
- Oral (90 days, rat): NOEL; < 100 mg/kg/day (target organ effects: liver)

12. Ecological information

Data for this material were used to estimate its environmental impact.

Potential Toxicity:

Fish LC50: > 100 mg/l

Daphnid EC50: > 100 mg/l

Waste treatment organisms EC50: > 100 mg/l

Organics Readily Degradable: Not readily biodegradable.

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13. Disposal considerations

Discharge, treatment, or disposal is subject to national, state, provincial, or municipal laws. Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

Not regulated for all modes of transportation.

For more transportation information, go to: <http://ship.carestreamhealth.com>.

15. Regulatory information

U.S. California Prop. 65: none

Carcinogenicity Classification (components present at 0.1% or more):

International Agency for Research on Cancer (IARC): none

American Conference of Governmental Industrial Hygienists (ACGIH): none

U.S. National Toxicology Program (NTP): none

U.S. Occupational Safety and Health Administration (OSHA): none

Chemical(s) subject to the reporting requirements of U.S. Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372:
none

16. Other information

US/Canadian Label Statements:

WARNING!

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POWDERED MATERIAL MAY FORM EXPLOSIVE DUST-AIR MIXTURES

CAN DECOMPOSE AT ELEVATED TEMPERATURES

Avoid breathing dust.

Avoid contact with eyes, skin, and clothing.

Minimize dust generation and accumulation.

Ensure adequate ventilation.

Wash thoroughly after handling.

FIRST AID: If swallowed, only induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. If inhaled, move to fresh air. Treat symptomatically. Get medical attention. In case of skin contact, immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash contaminated clothing before re-use. Destroy or thoroughly clean contaminated shoes.

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Keep out of reach of children.

Do not handle or use until safety precautions in Material Safety Data Sheet (MSDS) have been read and understood.

Additional hazard precautions for containers greater than 1 gallon of liquid or 5 pounds of solid:

Since emptied containers retain product residue, follow label warnings even after container is emptied.

IN CASE OF FIRE: Use water spray, carbon dioxide (CO₂), dry chemical. Use water spray to cool unopened containers.

The information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment. The information relating to the working solution is for guidance purposes only, and is based on correct mixing and use of the product according to instructions.

R-3, S-2, F-1, C-2T