



Safety Data Sheet

according to Regulation (EC) 1907/2006 (REACH)

Revision date: 2018-10-18

Supersedes: 2017-12-11

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier:

Product trade name: GOOD-RITE* 3114 FF Antioxidant
Company product number: 3114FF
REACH registration number: Not registered
Substance name: 1,3,5-Tris(3,5-di-tert-butyl-4-hydroxybenzyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione
Substance identification number: EC 248-597-9
Other means of identification: Not Available

1.2. Relevant identified uses of the substance or mixture and uses advised against:

Uses: Antioxidant for polymeric materials.
Uses advised against: None identified

1.3. Details of the supplier of the safety data sheet:

Manufacturer/Supplier: Emerald Performance Materials, LLC
1499 SE Tech Center Place, Suite 300
Vancouver, WA 98683
United States
Telephone: +1-360-954-7100
FAX: +1-360-954-7201
For further information about this SDS: Email: product.compliance@emeraldmaterials.com

1.4. Emergency telephone number:

ChemTel (24 hours): 1-800-255-3924 (USA); +1-813-248-0585 (outside USA);
1-300-954-583 (Australia); 000-800-100-4086 (India).

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture:

Product classification according to Regulation (EC) 1272/2008 (CLP) as amended:

Not classified as hazardous under any GHS hazard class according to Regulation (EC) 1272/2008 (CLP).

2.2. Label elements:

Product labeling according to Regulation (EC) 1272/2008 (CLP) as amended:

Hazard pictogram(s): Not Applicable
Signal word: Not Applicable
Hazard statements: Not Applicable
Precautionary statements: Not Applicable
Supplemental information: No Additional Information

2.3. Other hazards:

PBT/vPvB criteria: Not Available
Other hazards: May form explosible dust-air mixture if dispersed.

See Section 11 for toxicological information.

SECTION 3: Composition/information on ingredients

3.1. Substance:

No Hazardous Components found under applicable regulations.

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

SECTION 4: First aid measures

4.1. Description of first aid measures:

General: If irritation or other symptoms occur or persist from any route of exposure, remove the affected individual from the area: see a physician/get medical attention.

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

Skin contact: Wash the affected area thoroughly with plenty of soap and water. Get medical attention if symptoms occur.

Inhalation: If affected, remove to fresh air. Get medical attention if symptoms occur.

Ingestion: Get medical attention if symptoms occur.

Protection of first aid responders: Wear proper personal protective clothing and equipment.

4.2. Most important symptoms and effects, both acute and delayed:

Irritation. Pre-existing skin problems may be aggravated by prolonged or repeated contact. Persons with sensitive airways (e.g., asthmatics) may react to airborne dust or vapors. See section 11 for additional information.

4.3. Indication of any immediate medical attention and special treatment needed:

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media:

Suitable: Use water spray, dry chemical, or foam. Carbon dioxide may be ineffective on larger fires due to a lack of cooling capacity which may result in reignition.

Unsuitable: Avoid hose streams or any method which will create dust clouds.

5.2. Special hazards arising from the substance or mixture:

Unusual fire/explosion hazards: Concentrated dust/air combinations may produce explosive conditions. As with all organic dusts, fine particles suspended in air in critical proportions and in the presence of an ignition source may ignite and/or explode. Dust may be sensitive to ignition by electrostatic discharge, electrical arcs, sparks, welding torches, cigarettes, open flame, or other significant heat sources. As a precaution, implement standard safety measures for handling finely divided organic powders. See Section 7 for suggested measures.

Hazardous combustion products: Irritating or toxic substances will be emitted upon burning, combustion or decomposition. See section 10 (10.6 Hazardous decomposition products) for additional information.

5.3. Advice for firefighters:

Avoid hose streams or any method which will create dust clouds. Wear self-contained breathing apparatus (SCBA) equipped with a full facepiece and operated in a pressure-demand mode (or other positive pressure mode) and approved protective clothing. Personnel without suitable respiratory protection must leave the area to prevent significant exposure to hazardous gases from combustion, burning or decomposition. In an enclosed or poorly ventilated area, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations.

See section 9 for additional information.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures:

See Section 8 for recommendations on the use of personal protective equipment. If spilled in an enclosed area, ventilate. Avoid raising powdered material due to explosion hazard. Use spark-proof and explosion-proof equipment. If inhalation of dust cannot be avoided, wear an approved particulate respirator.

6.2. Environmental precautions:

Do not flush product into public sewer, water systems or surface waters.

6.3. Methods and material for containment and cleaning up:

Contain spill. Wear proper personal protective clothing and equipment. Using care to avoid dust generation, vacuum or sweep into a closed container for reuse or disposal. Use approved industrial vacuum cleaner for removal. Avoid causing dust. Place into labeled, closed container; store in safe location to await disposal. Change contaminated clothing and launder before reuse.

6.4. References to other sections:

See Section 8 for recommendations on the use of personal protection and Section 13 for waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling:

As with any chemical product, use good laboratory/workplace procedures. Wash thoroughly after handling this product. Always wash up before eating, smoking or using the facilities. Use under well-ventilated conditions. Avoid eye and skin contact. Avoid drinking, tasting, swallowing or ingesting this product. Avoid routine inhalation of dust of any kind. Exercise care when emptying containers, sweeping, mixing or doing other tasks which can create dust. Wash contaminated clothing before reuse. Provide eyewash fountains and safety showers in the work area. As a precaution to control dust explosion potential, implement the following safety measures: Eliminate ignition sources (e.g., sparks, static buildup, excessive heat, etc.). In general, dust of organic materials is a static charge generator which may be ignited by electrostatic discharge, electrical arcs, sparks, welding torches, cigarettes, open flame, or other significant heat sources. Use spark-proof tools and equipment. Bond, ground and properly vent conveyors, dust control devices and other transfer equipment. Prohibit flow of polymer, powder or dust through non-conductive ducts, vacuum hoses or pipes, etc.; only use grounded, electrically conductive transfer lines when pneumatically conveying product. Good housekeeping and controlling of dusts are necessary for safe handling of product. Prevent accumulation of dust (e.g., well-ventilated conditions, promptly vacuuming spills, cleaning overhead horizontal surfaces, etc.).

7.2. Conditions for safe storage, including any incompatibilities:

Store cool and dry, under well-ventilated conditions. Store this material away from incompatible substances (see section 10). Do not store in open, unlabeled or mislabeled containers. Keep container closed when not in use.

7.3. Specific end use(s):

No Additional Information

SECTION 8: Exposure controls / personal protection

8.1. Control parameters:

Occupational exposure limits (OEL): No applicable exposure limits.

PNOS: ACGIH has recommended the following exposure limits for Particulates (insoluble or poorly soluble) not otherwise specified (PNOS): 10 mg/m³ TWA (inhalable particles), 3 mg/m³ TWA (respirable particles). Belgium: 3 mg/m³ TWA (alveolar fraction); 10 mg/m³ TWA (inhalable fraction). Germany MAK Values for dust: 1.5 mg/m³ MAK (respirable fraction); 4 mg/m³ MAK (inhalable fraction). Portugal: 10 mg/m³ TWA (inhalable fraction); 3 mg/m³ TWA (respirable fraction). Spain: 10 mg/m³ VLA-ED (inhalable fraction); 3 mg/m³ VLA-ED (respirable fraction).

Derived No Effect Levels (DNELs) : Not Available

Predicted No Effect Concentration (PNECs): Not Available

8.2. Exposure controls:

Appropriate engineering controls: Always provide effective general and, when necessary, local exhaust ventilation to draw dust away from workers to prevent routine inhalation. Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the SDS. Eliminate ignition sources (e.g., sparks, static buildup, excessive heat, etc.). Prohibit flow of powder or dust through non-conductive ducts, vacuum hoses, or pipes, etc. Bond, ground, and properly vent conveyors, dust control devices and other transfer equipment.

Individual protection measures, such as personal protective equipment:

Eye/face protection: Wear eye protection.

Hand protection: Avoid skin contact when mixing or handling the material by wearing impervious and chemical resistant gloves. In case of prolonged immersion or frequently repeated contact, gloves with breakthrough times greater than 240 minutes (protection class 5 or greater) are recommended. For brief contact or splash applications, gloves with breakthrough times of 10 minutes or greater are recommended (protection class 1 or greater). The protective gloves to be used must comply with the specifications of the EC directive 89/686/EEC and the resultant standard EN 374. Suitability and durability of a glove is dependent on usage (e.g. frequency and duration of contact, other chemicals which may be handled, chemical resistance of glove material and dexterity). Always seek advice of the glove supplier as to the most suitable glove material.

Skin and body protection: Use good laboratory/workplace procedures including personal protective clothing: labcoat, safety glasses and protective gloves.

Respiratory protection: Respiratory protection is not needed with proper ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. If inhalation of dust cannot be avoided, wear an approved particulate respirator.

Further information: Eyewash fountains and safety showers are recommended in the work area.

Environmental exposure controls: See Sections 6 and 12.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties:**

Form:	Flake	pH:	Not Available
Appearance:	White	Relative density:	1.03 @ 20°C
Odour:	Negligible	Partition coefficient (n-octanol/water):	log Pow >6
Odour threshold:	Not Available	% Volatile by weight:	<0.5%
Solubility in water:	< 1 ppm @ 20°C	VOC:	<0.5%
Evaporation rate:	Not Available	Boiling point °C:	Not Available
Vapour pressure:	5 x 10 (-15) mm Hg @ 25°C	Boiling point °F:	Not Available
Vapour density:	Not Available	Flash point:	289 °C (552 °F) Cleveland Open Cup
Viscosity:	Not Available	Autoignition temperature:	360°C (680°F)
Melting point/Freezing point:	219.5-225.5°C (427-438°F)	Flammability (solid, gas):	Not flammable (may form combustible dust concentrations in air)
Oxidising properties:	Not oxidizing	Flammability or explosive limits:	LFL/LEL: Not Available
Explosive properties:	Not explosive		UFL/UEL: Not Available
Decomposition temperature:	Not Available		

9.2. Other information:

Amounts specified are typical and do not represent a specification.

Dust combustibility data: The following characteristics apply to powder and are expected to apply to dust from pastilles, flakes or pellets if these forms are reduced to a powder:

- Minimum explosive concentration: 0.030 oz/ft³ (30 g/m³)
- Minimum ignition energy (dust cloud): 0.10 joules (at 0.300 oz/ft³ dust cloud); >1 millijoules - <3 millijoules (external data, no dust cloud concentration reported)
- Maximum rate of pressure rise: 16,200 psi/sec @ 0.10 oz/ft³

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- Maximum pressure of explosion: 83 psig @ 2.0 oz/ft³
- Deflagration Index, Kst (estimate): 282 bar m/sec
- Explosion severity ratio: 6.21 (severe)

SECTION 10: Stability and reactivity

10.1. Reactivity:

None known.

10.2. Chemical stability:

This product is stable.

10.3. Possibility of hazardous reactions:

Hazardous polymerization will not occur.

10.4. Conditions to avoid:

Excessive heat and ignition sources. Avoid static discharge. Avoid dust formation.

10.5. Incompatible materials:

Avoid strong acids, bases, and oxidizing agents. Depending on the amount and specific materials involved, contact can result in intense heat, boiling, flame development, explosion or toxic gas generation.

10.6. Hazardous decomposition products:

Carbon monoxide, carbon dioxide, and oxides of nitrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects:

Information on likely routes of exposure:

General: Caution must be exercised through the prudent use of protective equipment and handling procedures to minimize exposure.

Eyes: Solid particles on the eye (powder/dust) may cause pain and be accompanied by irritation.

Skin: May cause skin irritation.

Inhalation: Dust inhalation may cause respiratory irritation.

Ingestion: Ingestion may cause irritation.

Acute toxicity information: Not classified (based on available data, the classification criteria are not met). Oral LD50, Rat: >5000 mg/kg. Dermal LD50, Rabbit: >2000 mg/kg. Inhalation LC50, Rat: >20 mg/L, 1 hour.

Skin corrosion/irritation: Not classified (based on available data, the classification criteria are not met).

Serious eye damage/irritation: Not classified (based on available data, the classification criteria are not met).

Respiratory or skin sensitization: Not classified (based on available data, the classification criteria are not met).

Carcinogenicity: Not classified (based on available data, the classification criteria are not met). Under the conditions of the two year oral study, there was no evidence of carcinogenic activity.

Germ cell mutagenicity: Not classified (based on available data, the classification criteria are not met). This material does not show mutagenic or clastogenic properties.

Reproductive toxicity: Not classified (based on available data, the classification criteria are not met). This material has not been found to be a reproductive toxicant. Developmental toxicity study, rat: NOEL maternal toxicity=1000 mg/kg/day; NOEL teratogenicity=1000 mg/kg/day.

Specific target organ toxicity (STOT) - single exposure: Not classified (based on available data, the classification criteria are

not met).

Specific target organ toxicity (STOT) - repeated exposure: Not classified (based on available data, the classification criteria are not met). Repeated dose study, 3 months, oral, rat: NOEL (no-observable-effect-level)=3000 ppm (201 mg/kg/day) in males and 800 ppm (50 mg/kg/day) in females. There were no treatment-related changes in blood chemistry, organ weights or urinalysis. The females were found to have a statistically significant, but slight, increase in mean circulating blood platelets in the 3000 ppm and 15000 ppm dose groups. Repeated dose study, 28 days, oral, rat: NOAEL (no-observable-adverse-effect-level)=1000 ppm (95 mg/kg/day) in both males and females. Increased food and water consumption in both sexes was observed at the 10000 ppm dose level.

Aspiration hazard: Not classified (technical impossibility to obtain the data).

Other toxicity information: No additional information available.

SECTION 12: Ecological information

12.1. Toxicity:

Acute toxicity is not expected at or below the level of water solubility.

12.2. Persistence and degradability:

Not readily biodegradable.

12.3. Bioaccumulative potential:

Not expected to bioaccumulate.

12.4. Mobility in soil:

No specific information available.

12.5. Results of PBT and vPvB assessment:

Not Available

12.6. Other adverse effects:

No additional information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods:

Dispose of unused contents (incineration or landfill) in accordance with national and local regulations. Dispose of container in accordance with national and local regulations. Ensure the use of properly authorized waste management companies, where appropriate.

See Section 8 for recommendations on the use of personal protective equipment.

SECTION 14: Transport information

The information below is provided to assist in documentation. It may supplement the information on the package. The package in your possession may carry a different version of the label depending on the date of manufacture. Depending on inner packaging quantities and packaging instructions, it may be subject to specific regulatory exceptions.

14.1. UN number: N/A

14.2. UN proper shipping name:

Not regulated - See Bill of Lading for Details

14.3. Transport hazard class(es):

U.S. DOT hazard class: N/A

Canada TDG hazard class: N/A

Europe ADR/RID hazard class: N/A

IMDG Code (ocean) hazard class: N/A

ICAO/IATA (air) hazard class: N/A

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A "N/A" listing for the hazard class indicates the product is not regulated for transport by that regulation.

14.4. Packing group: N/A

14.5. Environmental hazards:

Marine pollutant: Not Applicable

Hazardous substance (USA): Not Applicable

14.6. Special precautions for user:

Not Applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code:

Not Applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Europe REACh (EC) 1907/2006: Not all applicable components are registered. Please contact your sales representative for further information regarding REACh compliance. REACh is only relevant to substances either manufactured or imported into the EU. REACh information regarding this product is provided for informational purposes only. Each Legal Entity may have differing REACh obligations, depending on their place in the supply chain. For material manufactured outside of the EU, the importer of record must understand and meet their specific obligations under the regulation.

EU Authorizations and/or restrictions on use: Not Applicable

Other EU information: No Additional Information

National regulations: No Additional Information

Chemical inventories:

<u>Regulation</u>	<u>Status</u>
Australian Inventory of Chemical Substances (AICS):	Y
Canadian Domestic Substances List (DSL):	Y
Canadian Non-Domestic Substances List (NDSL):	N
China Inventory of Existing Chemical Substances (IECSC):	Y
European EC Inventory (EINECS, ELINCS, NLP):	Y
Japan Existing and New Chemical Substances (ENCS):	Y
Japan Industrial Safety and Health Law (ISHL):	Y
Korean Existing and Evaluated Chemical Substances (KECL):	Y
New Zealand Inventory of Chemicals (NZIoC):	Y
Philippines Inventory of Chemicals and Chemical Substances (PICCS):	Y
Taiwan Inventory of Existing Chemicals:	Y
U.S. Toxic Substances Control Act (TSCA):	Y

A "Y" listing indicates all intentionally added components are either listed or are otherwise compliant with the regulation. A "N" listing indicates that for one or more components: 1) there is no listing on the public inventory; 2) no information is available; or 3) the component has not been reviewed. A "Y" for New Zealand may mean that a qualified group standard may exist for the components in this product.

15.2. Chemical safety assessment:

Not Applicable

SECTION 16: Other information

Reason for revision: Changes in Section(s): 1, 15

Evaluation method for classification of mixtures: Not Applicable (substance)

Legend:

* : Trademark owned by Emerald Performance Materials, LLC.

ACGIH: American Conference of Governmental Industrial Hygienists

EU OELV: European Union Occupational Exposure Limit Value

EU IOELV: European Union Indicative Occupational Exposure Limit Value

SDS Name: GOOD-RITE* 3114 FF Antioxidant

N/A: Not Applicable

N/E: None Established

STEL: Short Term Exposure Limit

TWA: Time Weighted Average (exposure for 8-hour workday)

Users Responsibility/Disclaimer of Liability:

The information set forth herein is based on our current knowledge, and is intended to describe the product solely with respect to health, safety and the environment. As such, it must not be interpreted as a guarantee of any specific property of the product. As a result, the customer shall be solely responsible for deciding whether said information is suitable and beneficial.

Safety Data Sheet Preparer:

Product Compliance Department

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United States