

SAFETY DATA SHEET

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

1.1. Product identifier Topanol CA
Synonyms: 1,1,3 – Tris (2-methyl-4-hydroxy-5-t-butyl phenyl) butane
Chemical Abstracts Registry No: 1843-03-4
REACH Registration Number: 01-2119955265-33-0001 (Topanol)

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

Antioxidant; Stabilizer

1.3. Details of the supplier of the safety data sheet

Vertellus Specialties UK Ltd.
Seal Sands Road, Seal Sands
Middlesbrough, TS2 1UB
England
+44 1642-546546

e-mail Address: sds@vertellus.com

1.4. Emergency telephone number **Vertellus:** +44 1642-546546
CHEMTREC (USA): +1-800-424-9300 (collect calls accepted)
CHEMTREC (International): +1-703-527-3887 (collect calls accepted)
NRCC (China): +86 532 83889090

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture (According to Regulation (EC) No 1272/2008, 29 CFR 1910.1200 and the Globally Harmonized System)

Skin Sensitization Category 1B
Reproductive Toxicity Category 2
Skin Irritation Category 2
Specific Target Organ Systemic Toxicity Repeated Exposure Category 2

2.2. Label elements

Hazard Symbols (Pictogram):



Signal Word: Warning

Hazard Precautions: H315 - Causes skin irritation.
H361d - Suspected of damaging the unborn child.
H373 - May cause damage to organs through prolonged or repeated exposure.
H317 - May cause an allergic skin reaction.

Prevention Precautionary Statements: P201 - Obtain special instructions before use.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P281 - Use personal protective equipment as required.

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First Aid Precautionary Statements: P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P308+P313 - IF exposed or concerned: Get medical advice/attention.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P362 - Take off contaminated clothing and wash before reuse.
P363 - Wash contaminated clothing before reuse.

2.3. Other hazards

Other Hazards: WARNING! MAY FORM COMBUSTIBLE DUST CONCENTRATIONS IN AIR (DURING PROCESSING).

SECTION 3: Composition/information on ingredients

3.1. Substances or 3.2. Mixtures

Ingredient	CAS Number	Concentration (weight %)	EC Number	CLP Inventory/ Annex VI	EU CLP Classification (1272/2008)
1,1,3-Tris(2-methyl-4-hydroxy-5-t-butylphenyl)butane	1843-03-4	> 87.5	217-420-7	Not listed.	Skin Sens. 1; H317
Toluene	108-88-3	< 12.5	203-625-9	601-021-00-3	Flam Liq 2, H225 Asp Tox 1, H304 STOT SE 3, H336 Repr. 2; H361d Skin Irrit. 2; H315 STOT RE 2; H373

NOTE: See Section 8 for exposure limit data for these ingredients. See Section 15 for trade secret information (where applicable). See Section 16 for the full text of the R-phrases above.

SECTION 4: First aid measures

4.1. Description of first aid measures

Skin Contact: Immediately flush with water for 15 minutes. Wash the contaminated skin with soap and water. If irritation develops, call a physician.

Eye Contact: Flush eyes with water for at least 15 minutes; if irritation occurs seek medical attention.

Inhalation: If exposed to excessive levels remove to fresh air and get medical attention if cough or other symptoms develop. If breathing has stopped, give artificial respiration.

Ingestion: If swallowed, contact physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Acute: May cause sensitization or irritation by skin contact.

Delayed Effects: None known.

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

Note to Physician: No specific indications. Treatment should be based on the judgment of the physician in response to the reactions of the patient.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Appropriate Extinguishing Media: Water spray, Carbon dioxide, Dry chemical

5.2. Special hazards arising from the substance or mixture

Hazardous Products of Combustion: Carbon monoxide, carbon dioxide

Potential for Dust Explosion: Topanol presents a significant dust explosion hazard unless properly handled: Topanol CA was tested for dust explosion characteristics and the following results were obtained:
- minimum ignition energy: < 3 mJ
- Minimum ignition temperature of dust cloud: 360 - 380 °C

Maximum Explosion Pressure: 9.2 bar

Maximum Rate of Pressure Rise: 1172 bar/s

Kst: 318 bar.m/s [St class : 3]

Limiting Oxygen Concentration: 8%

Minimum Explosible Concentration: 25 g/m³

Charge Relaxation time: ~120hrs

Powder Volume Resistivity: 3.6 x10¹⁵ Ohm.m (@<10% RH)

Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.

Refer to European standards: EN1127-1, EN14491, EN14797, EN14373, and EN15089 for safe handling of and controlling explosive atmospheres in the workplace.

Special Flammability Hazards: This product is an organic solid. As such, in its finely divided form, this product has the potential to present a dust explosion hazard under certain conditions. Please review the dust explosion data enclosed in this section. Handle this product in a manner that prevents dust generation and accumulation, and refer to National Fire Protection Association (NFPA) Standard 654 for further information on prevention of dust explosions.

5.3. Advice for firefighters

Basic Fire Fighting Guidance: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuation Procedures: Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Special Instructions: See Section 8 for personal protective equipment recommendations. Remove all contaminated clothing to prevent further absorption. Decontaminate affected personnel using the first aid procedures in Section 4. Leather shoes that have been saturated must be discarded. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Nonsparking tools should be used.

6.2. Environmental precautions

Prevent releases to soils, drains, sewers and waterways.

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6.3. Methods and material for containment and cleaning up

Remove all ignition sources. Wear protective equipment during clean-up. Ventilate the area of spill or leak. After collection of material, flush area with water. Avoid generation of dust clouds during clean-up. Carefully scoop up and place into appropriate disposal container. Dispose of contents & container in accordance with local, regional, national or international regulations.

6.4. Reference to other sections

Refer to section 8 for information on selecting personal protective equipment. Refer to section 13 for information on spilled product, absorbent and clean up material disposal instructions.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for Unique Hazards: Not applicable.

Special Handling Equipment: Not applicable.

7.2. Conditions for safe storage, including any incompatibilities

Storage Precautions & Recommendations: This product should be stored at ambient temperature in a dry, well-ventilated location. Keep away from heat, sparks, and flame. Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.

Dangerous Incompatibility Reactions: No data available.

Incompatibilities with Materials of Construction: None known

7.3. Specific end use(s)

If a chemical safety assessment has been completed an exposure scenario is attached as an annex to this Safety Data Sheet. Refer to this annex for the specific exposure scenario control parameters for uses identified in subsection 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Country	Occupational Exposure Limit
United States (OSHA)	Inhalable dust: 15 mg/m ³ . Respirable dust: 5 mg/m ³
Austria, France, Sweden	Inhalable dust: 10 mg/m ³ . Respirable dust: 5 mg/m ³
Belgium, Spain, Switzerland	Inhalable dust: 10 mg/m ³ . Respirable dust: 3 mg/m ³ .
Ireland, United Kingdom	Inhalable dust: 10 mg/m ³ . Respirable dust: 4 mg/m ³
Denmark, Singapore	Inhalable dust: 10 mg/m ³ .
Hungary	Inhalable dust: 10 mg/m ³ . Respirable dust: 6 mg/m ³
Germany	Inhalable dust: 10 mg/m ³ . Respirable dust: 1.25 mg/m ³
Air Monitoring Method:	Gravimetric analysis for total particulate and respirable fraction (<10 microns).

8.2. Exposure controls

Also see the annex to this SDS (if applicable) for specific exposure scenario controls.

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Other Engineering Controls:	All operations should be conducted in well-ventilated conditions. Local exhaust ventilation should be provided. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).
Personal Protective Equipment:	Neoprene, nitrile, or PVC-coated gloves. Safety glasses or chemical goggles. 08PPA550
Respirator Caution:	Observe OSHA regulations for respirator use (29 CFR 1910.134). Air-purifying respirators must not be used in oxygen-deficient atmospheres.
Thermal Hazards:	Not applicable.
Environmental Exposure Controls:	The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance, State & Odor (ambient temperature):	White to off-white powder with possible toluene odor.		
Molecular Formula:	Mixture	Molecular Weight:	Mixture
Vapor Pressure:	No data available.	Evaporation Rate:	No data available.
Specific Gravity or Density:	0.5 g/mL @ 20°C	Vapor Density (air = 1):	Not established
Boiling Point:	(approx) 265 °C	Freezing / Melting Point:	184 °C
Solubility in Water:	Insoluble in water.	Octanol / Water Coefficient:	12.7 @ 25°C
pH:	No data available	Odor Threshold:	No data available.
Viscosity:	No data available	Autoignition Temperature:	Not self-ignitable
Flash Point and Method:	No data available.	Flammable Limits:	No data available.
Flammability (solid, gas):	Not a flammable solid.	Decomposition Temperature:	No data available.
Explosive Properties:	Not explosive	Oxidizing Properties:	Not an oxidizer

SECTION 10: Stability and reactivity

<u>10.1. Reactivity</u>	Not classified as dangerously reactive.
<u>10.2. Chemical stability</u>	Stable
<u>10.3. Possibility of hazardous reactions</u>	Will not occur.
<u>10.4. Conditions to avoid</u>	Electrostatic discharge Formation of dust clouds

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<u>10.5. Incompatible materials</u>	None known
<u>10.6. Hazardous decomposition products</u>	Oxides of carbon

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute Oral LD ₅₀ :	> 5000 mg/kg (rat) > 5000 mg/kg (guinea pig) > 3000 mg/kg (dog) 636 mg/kg (rat)	1,1,3-Tris(2-methyl-4-hydroxy-5-t-butylphenyl)butane Toluene
Acute Dermal LD ₅₀ :	> 7940 mg/kg (rabbit) 8390 mg/kg (rabbit)	1,1,3-Tris(2-methyl-4-hydroxy-5-t-butylphenyl)butane Toluene
Acute Inhalation LC ₅₀ :	Inhalation LC ₅₀ (4h) (rat) 12.5 mg/L	Toluene
Skin Irritation:	Slightly irritating to skin.	
Eye Irritation:	Non-irritating to eyes.	
Skin Sensitization:	Positive for skin sensitization potential in Local Lymph Node Assay (OECD 429).	
Mutagenicity:	Not mutagenic : Negative to Ames test	
Reproductive / Developmental Toxicity:	Suspected of damaging fertility or the unborn child (toluene)	
Carcinogenicity:	This material is not listed by IARC, NTP or OSHA as a carcinogen. No test data is available that indicates this material is a carcinogen.	
Target Organs:	Central nervous system	
Aspiration Hazard:	Not applicable.	
Primary Route(s) of Exposure:	Skin contact and absorption, eye contact, and inhalation. Ingestion is not likely to be a primary route of exposure.	
Most important symptoms and effects, both acute and delayed	May cause sensitization or irritation by skin contact. Delayed Effects: None known.	
Additive or Synergistic effects:	None known.	

SECTION 12: Ecological information

<u>12.1. Toxicity</u>	NOEC (40d) (onchorhynchus kisutch) = 1.4 mg/L	Toluene
	LC50 (96h) (onchorhynchus kisutch) = 5.5 mg/L	Toluene
	EC50 (48h) (daphnia dubia) = 3.78 mg/L	Toluene
	NOEC (7d) (daphnia dubia) = 0.74 mg/L	Toluene
	EC50 (3h) (chlorella vulgaris) = 134 mg/L	Toluene
	Aquatic NOAC 100 mg/L 96 hr Brachydanio rerio , (Scheerbaum 1995)	Topanol
	Aquatic NOEC >1000 mg/L 48 hr Daphnia Magna, (Migchielson 2012)	Topanol
	Aquatic NOEC >1000 mg/L(72hr) Scenedesmus subspicatus , (Scheerbaum, 1995)	Topanol
	<u>12.2. Persistence and degradability</u>	Topanol: OECD 301B (modified Sturm test): 12% degradation in 28 days; not ready biodegradable. (Noack 1995b)

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<u>12.3. Bioaccumulative potential</u>	Topanol: By means of EPIWIN QSAR BCFBAF estimations the BCF is determined to be 1.064 L/kg wet-wt (Green, 2012)
<u>12.4. Mobility in soil</u>	No data available.
<u>12.5. Results of PBT and vPvB assessment</u>	This mixture is not a PBT or vPvB.
<u>12.6. Other adverse effects</u>	Ecotoxicological data are for components.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

US EPA Waste Number:	Non-Hazardous
Waste Classification (per US regulations)	The waste may be classified as "special" or hazardous per State regulations.
Waste Disposal:	NOTE: Generator is responsible for proper waste characterization. State hazardous waste regulations may differ substantially from federal regulations. Dispose of this material responsibly, and in accordance with standard practice for disposal of potentially hazardous materials as required by applicable international, national, regional, state or local laws, and environmental protection duty of care principles. Do NOT dump into any sewers, on the ground, or into any body of water. For disposal within the EC, the appropriate classification code according to the European Community List of Wastes should be used. Note that disposal regulations may also apply to empty containers and equipment rinsates.

SECTION 14: Transport information

The following information applies to all shipping modes (DOT/IATA/ICAO/IMDG/ADR/RID/ADN), unless otherwise indicated:

14.1. UN number	Non-Hazardous	14.2. UN proper shipping name	Chemicals, n.o.s. (1,1,3-Tris(2-methyl-4-hydroxy-5-t-butylphenyl)butane)
14.3. Transport hazard class(es)	Not applicable	14.4. Packing group	Not applicable
14.5. Environmental hazards	Not applicable		
14.6. Special precautions for user	Not applicable.		
NA Emergency Guidebook Numbers:	Not applicable	IMDG EMS:	Not applicable;
14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code			Not applicable.

SECTION 15: Regulatory information

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

Chemical Inventory Lists:	Status:		
USA TSCA:	Listed	EINECS:	217-420-7 203-625-9
Canada(DSL/NDSL):	DSL	Japan:	(9-1871) (3)-2 (toluene)
Korea:	KE-24898 (topanol CA-SF)	Australia:	Listed

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China:	KE-33936 (toluene) Listed 16691 (toluene)	Philippines:	Listed
Taiwan:	Listed	New Zealand:	Listed
German Water Hazard Classification:	ID Number 194, hazard class 2 - hazard to waters (<i>1,1,3-Tris(2-methyl-4-hydroxy-5-tert-butylphenyl)butan Toluol</i>)		
SARA 313:	Toluene 1.0 percent de minimis concentration		
Reportable Quantities:	1000 lbs		
State Regulations:	ATTENTION: This product can expose you to Toluene, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov .		

HMIS IV:	HEALTH	2*
	FLAMMABILITY	1
	PHYSICAL HAZARD	0

NFPA:



15.2. Chemical safety assessment

A chemical safety assessment has not been prepared for this mixture of substances.

SECTION 16: Other information

Legend of Abbreviations:

ACGIH = American Conference on Governmental Industrial Hygienists.

CAS = Chemical Abstracts Service.

CFR = Code of Federal Regulations.

DSL/NDL = Domestic Substances List/Non-Domestic Substances List.

EC = European Community.

EINECS = European Inventory of Existing Commercial Chemical Substances.

ELINCS = European List of Notified Chemical Substances.

EU = European Union.

GHS = Globally Harmonized System.

LC = Lethal Concentration.

LD = Lethal Dose.

NFPA = National Fire Protection Association.

NIOSH = National Institute of Occupational Safety and Health.

NTP = National Toxicology Program.

OSHA = Occupational Safety and Health Administration

PEL = Permissible Exposure Limit.

RQ = Reportable Quantity.

SARA = Superfund Amendments and Reauthorization Act of 1986.

TLV = Threshold Limit Value.

WHMIS = Workplace Hazardous Materials Information System.

Important Note: Please note that 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. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. The information contained herein may change without prior notice. THIS SAFETY DATA SHEET SUPERSEDES ALL PREVIOUS EDITIONS.

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