

Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier

3M[™] Scotch-Weld[™] Structural Core Splice Adhesive Film AF 3028

Product Identification Numbers

ID Number	UPC	ID Number	UPC
62-3028-0305-1	000-21200-96250-9	62-3028-0655-9	00-21200-20624-5
62-3028-0805-0	00-21200-76295-6	62-3028-1305-0	00-21200-20625-2
62-3028-1355-5	00-21200-76076-1	62-3028-1715-0	00-21200-64948-6
62-3028-3505-3	00-21200-64553-2	62-3028-3506-1	00-21200-82678-8
62-3028-4705-8	00-21200-82632-0	87-2500-0386-7	00048011986234
87-3300-0001-6			

7010309765, 7010365979, 7100006478, 7010399451

1.2. Recommended use and restrictions on use

Recommended use

Structural Adhesive Film, Industrial use

1.3. Supplier's details	
MANUFACTURER:	3M
DIVISION:	Automotive and Aerospace Solutions Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification Respiratory Sensitizer: Category 1.

Skin Sensitizer: Category 1.

2.2. Label elements Signal word Danger **Symbols** Health Hazard |

Pictograms



Hazard Statements May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

Precautionary Statements

Prevention:

Avoid breathing dust/fume/gas/mist/vapors/spray. In case of inadequate ventilation wear respiratory protection. Wear protective gloves. Contaminated work clothing must not be allowed out of the workplace.

Response:

IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Disposal:

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

46% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Epoxy Resin 1	28064-14-4	40 - 70 Trade Secret *
Epoxy Resin 2	25068-38-6	10 - 30 Trade Secret *
Epoxy Resin 3	29690-82-2	10 - 30 Trade Secret *
Synthetic Elastomer	Trade Secret*	5 - 10
Glass Bubbles	65997-17-3	3 - 7
Amorphous Silica	112945-52-5	1 - 5
Clay	68953-58-2	1 - 5
Dicyandiamide	461-58-5	1 - 5
para-Chlorophenol-Dimethylurea	150-68-5	1 - 5 Trade Secret *
Azobiscarboxamide	123-77-3	< 1 Trade Secret *

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:

No need for first aid is anticipated.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

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

Allergic respiratory reaction (difficulty breathing, wheezing, cough, and tightness of chest). Allergic skin reaction (redness, swelling, blistering, and itching).

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

Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture

Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
Aldehydes	During Combustion
Chlorine	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Chloride	During Combustion
Hydrogen Cyanide	During Combustion
Ammonia	During Combustion
Oxides of Nitrogen	During Combustion

5.3. Special protective actions for fire-fighters

Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Ventilate the area with fresh air. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible in accordance with

applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

For industrial/occupational use only. Not for consumer sale or use. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get in eves, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage including any incompatibilities

Store away from heat. Store away from amines.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
para-Chlorophenol-Dimethylurea	150-68-5	Manufacturer	TWA(Inhalable aerosol)(8	
		determined	hours):1 mg/m3	
Glass Bubbles	65997-17-3	Manufacturer	TWA(as non-fibrous,	
		determined	respirable)(8 hours):3	
			mg/m3;TWA(as non-fibrous,	
			inhalable fraction)(8 hours):10	
			mg/m3	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Curing enclosures must be exhausted to outdoors or to a suitable emission control device.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Safety Glasses with side shields

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity. Gloves made from the following material(s) are recommended: Polymer laminate

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	
Physical state	Solid
Color	Off-White
Specific Physical Form:	Film
Odor	Odorless
Odor threshold	No Data Available
рН	Not Applicable
Melting point	No Data Available
Boiling Point	Not Applicable
Flash Point	No flash point
Evaporation rate	Not Applicable
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	Not Applicable
Flammable Limits(UEL)	Not Applicable
Vapor Pressure	Not Applicable
Vapor Density	Not Applicable
Density	No Data Available
Specific Gravity	No Data Available
Solubility in Water	Nil
Solubility- non-water	No Data Available
Partition coefficient: n-octanol/ water	Not Applicable
Autoignition temperature	Not Applicable
Decomposition temperature	No Data Available
Viscosity	Not Applicable
Volatile Organic Compounds	Not Applicable
Percent volatile	0 % weight
VOC Less H2O & Exempt Solvents	Not Applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization may occur.

10.4. Conditions to avoid

Heat

Avoid curing large quantities of material to prevent a premature reaction (exotherm) with production of intense heat and smoke.

Condition

10.5. Incompatible materials

Amines

10.6. Hazardous decomposition products

Substance

None known.

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Allergic Respiratory Reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest.

Skin Contact:

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye Contact:

Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:

Physical Blockage: Signs/symptoms may include cramping, abdominal pain, and constipation.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Inhalation- Dust/Mist(4 hr)		No data available; calculated ATE >12.5 mg/l

	×		
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Epoxy Resin 1	Dermal	Rabbit	LD50 > 6,000 mg/kg
Epoxy Resin 1	Inhalation-	Rat	LC50 > 1.7 mg/l
	Dust/Mist		
	(4 hours)		
Epoxy Resin 1	Ingestion	Rat	LD50 > 4,000 mg/kg
Epoxy Resin 2	Dermal	Rat	LD50 > 1,600 mg/kg
Epoxy Resin 2	Ingestion	Rat	LD50 > 1,000 mg/kg
Epoxy Resin 3	Ingestion	Not	LD50 > 2,000 mg/kg
		available	
Epoxy Resin 3	Dermal	Rabbit	LD50 > 3,000 mg/kg
Glass Bubbles	Dermal		LD50 estimated to be > 5,000 mg/kg
Glass Bubbles	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Synthetic Elastomer	Dermal	Rabbit	LD50 > 15,000 mg/kg
Synthetic Elastomer	Ingestion	Rat	LD50 > 30,000 mg/kg
Dicyandiamide	Dermal	Rabbit	LD50 > 10,000 mg/kg
Dicyandiamide	Ingestion	Rat	LD50 > 30,000 mg/kg
Amorphous Silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Amorphous Silica	Inhalation-	Rat	LC50 > 0.691 mg/l
-	Dust/Mist		
	(4 hours)		
Amorphous Silica	Ingestion	Rat	LD50 > 5,110 mg/kg
Clay	Dermal		LD50 estimated to be > 5,000 mg/kg
Clay	Inhalation-	Rat	LC50 > 12.6 mg/l
	Dust/Mist		
	(4 hours)		
Clay	Ingestion	Rat	LD50 > 5,000 mg/kg
para-Chlorophenol-Dimethylurea	Dermal	Rabbit	LD50 > 2,500 mg/kg
para-Chlorophenol-Dimethylurea	Ingestion	Rat	LD50 1,480 mg/kg
Azobiscarboxamide	Dermal	Rat	LD50 > 2,000 mg/kg
Azobiscarboxamide	Inhalation-	Rat	LC50 > 6.1 mg/l
	Dust/Mist		-
	(4 hours)		
Azobiscarboxamide	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Epoxy Resin 1	Rabbit	Minimal irritation
Epoxy Resin 2	Rabbit	Mild irritant
Epoxy Resin 3	Professio	Mild irritant
	nal	
	judgeme	
	nt	
Glass Bubbles	Professio	No significant irritation
	nal	
	judgeme	
	nt	
Synthetic Elastomer	Professio	No significant irritation
	nal	
	judgeme	
	nt	
Dicyandiamide	Human	Minimal irritation
	and	
	animal	
Amorphous Silica	Rabbit	No significant irritation
Clay	Rat	No significant irritation
para-Chlorophenol-Dimethylurea	similar	Mild irritant
	compoun	
	ds	
Azobiscarboxamide	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Epoxy Resin 1	Rabbit	Mild irritant
	Rabbit	Moderate irritant
Epoxy Resin 2		
Epoxy Resin 3	Professio	Moderate irritant
	nal	
	judgeme	
	nt	
Glass Bubbles	Professio	No significant irritation
	nal	
	judgeme	
	nt	
Synthetic Elastomer	Professio	No significant irritation
	nal	
	judgeme	
	nt	
Dicyandiamide	Professio	Mild irritant
	nal	
	judgeme	
	nt	
Amorphous Silica	Rabbit	No significant irritation
Clay	Rabbit	No significant irritation
para-Chlorophenol-Dimethylurea	similar	Moderate irritant
· · ·	compoun	
	ds	
Azobiscarboxamide	Rabbit	No significant irritation

Skin Sensitization

Name	Species	Value
Epoxy Resin 1	Human	Sensitizing
	and	
	animal	
Epoxy Resin 2	Human	Sensitizing
	and	
	animal	
Epoxy Resin 3	similar	Not classified
	compoun	
	ds	
Dicyandiamide	Guinea	Not classified
	pig	
Amorphous Silica	Human	Not classified
	and	
	animal	
Azobiscarboxamide	Human	Not classified

Respiratory Sensitization

Name	Species	Value
Epoxy Resin 2	Human	Not classified
Azobiscarboxamide	Human	Sensitizing

Germ Cell Mutagenicity

Name	Route	Value
Epoxy Resin 1	In Vitro	Some positive data exist, but the data are not sufficient for classification
Epoxy Resin 2	In vivo	Not mutagenic
Epoxy Resin 2	In Vitro	Some positive data exist, but the data are not sufficient for classification
Epoxy Resin 3	In Vitro	Not mutagenic
Glass Bubbles	In Vitro	Some positive data exist, but the data are not sufficient for classification
Dicyandiamide	In Vitro	Not mutagenic
Amorphous Silica	In Vitro	Not mutagenic

para-Chlorophenol-Dimethylurea	In Vitro	Some positive data exist, but the data are not
		sufficient for classification
para-Chlorophenol-Dimethylurea	In vivo	Some positive data exist, but the data are not
		sufficient for classification
Azobiscarboxamide	In vivo	Not mutagenic
Azobiscarboxamide	In Vitro	Some positive data exist, but the data are not
		sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Epoxy Resin 2	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Glass Bubbles	Inhalation	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
Dicyandiamide	Ingestion	Rat	Not carcinogenic
Amorphous Silica	Not Specified	Mouse	Some positive data exist, but the data are not sufficient for classification
para-Chlorophenol-Dimethylurea	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Epoxy Resin 2	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
Epoxy Resin 2	Ingestion	Not classified for male reproduction	Rat	NOAEL 750 mg/kg/day	2 generation
Epoxy Resin 2	Dermal	Not classified for development	Rabbit	NOAEL 300 mg/kg/day	during organogenesi s
Epoxy Resin 2	Ingestion	Not classified for development	Rat	NOAEL 750 mg/kg/day	2 generation
Dicyandiamide	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
Dicyandiamide	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	44 days
Dicyandiamide	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating & during gestation
Amorphous Silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Amorphous Silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Amorphous Silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organogenesi s
para-Chlorophenol-Dimethylurea	Ingestion	Not classified for development	Mouse	LOAEL 215 mg/kg/day	during gestation
Azobiscarboxamide	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
Azobiscarboxamide	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	1 generation
Azobiscarboxamide	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	1 generation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name		Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
------	--	-------	-----------------	-------	---------	-------------	----------------------

Epoxy Resin 3	Inhalation	respiratory irritation	Some positive data exist, but the	similar	NOAEL Not	
			data are not sufficient for	health	Available	
			classification	hazards		
para-Chlorophenol-	Inhalation	respiratory irritation	Some positive data exist, but the	similar	NOAEL Not	
Dimethylurea			data are not sufficient for	compoun	available	
			classification	ds		
para-Chlorophenol-	Ingestion	methemoglobinemi	Some positive data exist, but the	Rat	NOAEL Not	not applicable
Dimethylurea		a	data are not sufficient for		available	
			classification			

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Epoxy Resin 2	Dermal	liver	Not classified	Rat	NOAEL 1,000 mg/kg/day	2 years
Epoxy Resin 2	Dermal	nervous system	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
Epoxy Resin 2	Ingestion	auditory system heart endocrine system hematopoietic system liver eyes kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Glass Bubbles	Inhalation	respiratory system	Not classified	Human	NOAEL not available	occupational exposure
Dicyandiamide	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 6,822 mg/kg/day	13 weeks
Amorphous Silica	Inhalation	respiratory system silicosis	Not classified	Human	NOAEL Not available	occupational exposure
para-Chlorophenol- Dimethylurea	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Mouse	LOAEL 800 mg/kg/day	103 weeks
para-Chlorophenol- Dimethylurea	Ingestion	kidney and/or bladder	Not classified	Rat	LOAEL 65 mg/kg/day	103 weeks
para-Chlorophenol- Dimethylurea	Ingestion	immune system	Not classified	Rat	LOAEL 520 mg/kg/day	13 weeks
Azobiscarboxamide	Inhalation	respiratory system heart endocrine system gastrointestinal tract bone, teeth, nails, and/or hair blood liver immune system nervous system kidney and/or bladder	Not classified	Rat	NOAEL 0.2 mg/l	90 days
Azobiscarboxamide	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 500 mg/kg/day	90 days

Aspiration Hazard

For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

EPCRA 311/312 Hazard Classifications:

Physical	Hazards
Not appl	icable

Health Hazards

Respiratory or Skin Sensitization

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

Ingredient	<u>C.A.S. No</u>	<u>% by Wt</u>
para-Chlorophenol-Dimethylurea	150-68-5	Trade Secret 1 - 5

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 2 Flammability: 1 Instability: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

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