

Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier

3MTM 8955UV Black Piezo InkJet Ink

Product Identification Numbers

75-0302-6692-0

1.2. Recommended use and restrictions on use

Recommended use

Ink, For use with Durst 163TS and 163TS-HS

1.3. Supplier's details

MANUFACTURER: 3M

DIVISION: Traffic Safety and Security 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

Serious Eye Damage/Irritation: Category 2A. Skin Corrosion/Irritation: Category 2.

Skin Sensitizer: Category 1.

Reproductive Toxicity: Category 1B.

Carcinogenicity: Category 2.

Specific Target Organ Toxicity (repeated exposure): Category 2.

2.2. Label elements

Signal word

Danger

Symbols

Exclamation mark | Health Hazard |

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Pictograms



Hazard Statements

Causes serious eye irritation.

Causes skin irritation.

May cause an allergic skin reaction.

May damage fertility or the unborn child.

Suspected of causing cancer.

May cause damage to organs through prolonged or repeated exposure:

kidney/urinary tract |

skin |

Precautionary Statements

Prevention:

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust/fume/gas/mist/vapors/spray.

Wear eye/face protection.

Wear protective gloves.

Wash thoroughly after handling.

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

Response:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

If eye irritation persists: Get medical advice/attention. IF ON SKIN: Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

IF exposed or concerned: Get medical advice/attention.

Storage:

Store locked up.

Disposal:

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

2.3. Hazards not otherwise classified

None.

10% of the mixture consists of ingredients of unknown acute oral toxicity.

30% of the mixture consists of ingredients of unknown acute dermal toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Isobornyl acrylate	5888-33-5	10 - 30 Trade Secret *
Isooctyl acrylate	29590-42-9	10 - 30 Trade Secret *

Tetrahydrofurfuryl acrylate	2399-48-6	10 - 30 Trade Secret *
Amine modified acrylate oligomer	Trade Secret*	7 - 13
Urethane acrylate oligomer	Trade Secret*	7 - 13
1,6-Hexanediol diacrylate	13048-33-4	1 - 10 Trade Secret *
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	75980-60-8	1 - 10 Trade Secret *
Benzophenone	119-61-9	1 - 10 Trade Secret *
Carbon black	1333-86-4	1 - 10 Trade Secret *
TS Polymer	Trade Secret*	0.5 - 2.0

^{*}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:

Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

If Swallowed:

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

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

See Section 11.1. Information on toxicological effects.

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

SubstanceConditionCarbon monoxideDuring CombustionCarbon dioxideDuring Combustion

5.3. Special protective actions for fire-fighters

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. 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. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up

Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

For industrial or professional use only. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, 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. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities

Store away from oxidizing agents.

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
Benzophenone	119-61-9	AIHA	TWA:0.5 mg/m3	
1,6-Hexanediol diacrylate	13048-33-4	AIHA	TWA:1 mg/m3(0.11 ppm)	Dermal Sensitizer
Carbon black	1333-86-4	ACGIH	TWA(inhalable fraction):3	A3: Confirmed animal
			mg/m3	carcin.
Carbon black	1333-86-4	CMRG	TWA:0.5 mg/m3	
Carbon black	1333-86-4	OSHA	TWA:3.5 mg/m3	
Tetrahydrofurfuryl acrylate	2399-48-6	Manufacturer	TWA:0.1 ppm(0.64	
		determined	mg/m3);STEL:0.3 ppm(1.91	
			mg/m3)	
Isooctyl acrylate	29590-42-9	Manufacturer	TWA:5 ppm	
		determined		
Isooctyl acrylate	29590-42-9	AIHA	TWA:37.5 mg/m3(5 ppm)	

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

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TWA: Time-Weighted-Average STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

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:

Indirect Vented Goggles

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.

Gloves made from the following material(s) are recommended: Butyl Rubber

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 – Butyl rubber

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

General Physical Form:LiquidSpecific Physical Form:Liquid

Odor, Color, Grade: Acrylate odor, black color, liquid

Odor thresholdNo Data AvailablepHNot ApplicableMelting pointNot ApplicableBoiling Point> 200 °F

Flash Point > 200 °F [Test Method: Closed Cup]

Evaporation rateNo Data AvailableFlammability (solid, gas)Not ApplicableFlammable Limits(LEL)No Data AvailableFlammable Limits(UEL)No Data AvailableVapor Pressure< 10 mmHg [@ 20 °C]</th>Vapor Density> 1 [Ref Std: AIR=1]

Density 1.04 g/ml

1.04 [*Ref Std:* WATER=1] **Specific Gravity**

Solubility in Water Negligible Solubility- non-water No Data Available

Partition coefficient: n-octanol/ water No Data Available No Data Available **Autoignition temperature** No Data Available **Decomposition temperature**

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. (Upon depletion of inhibitor or exposure to heat)

10.4. Conditions to avoid

Light

10.5. Incompatible materials

Strong oxidizing agents

10.6. Hazardous decomposition products

Substance

None known.

Condition

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.

May cause additional health effects (see below).

Skin Contact:

Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain.

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

May cause additional health effects (see below).

Eve Contact:

Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Ingestion:

May be harmful if swallowed.

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May cause additional health effects (see below).

Additional Health Effects:

Prolonged or repeated exposure may cause target organ effects:

Kidney/Bladder Effects: Signs/symptoms may include changes in urine production, abdominal or lower back pain, increased protein in urine, increased blood urea nitrogen (BUN), blood in urine, and painful urination.

Dermal Effects: Signs/symptoms may include redness, itching, acne, or bumps on the skin.

Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Carcinogenicity:

Contains a chemical or chemicals which can cause cancer.

Ingredient	CAS No.	Class Description	Regulation
Benzophenone	119-61-9	Grp. 2B: Possible human carc.	International Agency for Research on Cancer
Carbon black	1333-86-4	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

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	Ingestion		No data available; calculated ATE 2,000 - 5,000 mg/kg
Tetrahydrofurfuryl acrylate	Ingestion	Rat	LD50 551 mg/kg
Isooctyl acrylate	Dermal	Rabbit	LD50 > 2,000 mg/kg
Isooctyl acrylate	Ingestion	Rat	LD50 > 5,000 mg/kg
Isobornyl acrylate	Dermal	Rabbit	LD50 > 5,000 mg/kg
Isobornyl acrylate	Ingestion	Rat	LD50 4,350 mg/kg
1,6-Hexanediol diacrylate	Dermal	Rabbit	LD50 3,636 mg/kg
1,6-Hexanediol diacrylate	Ingestion	Rat	LD50 > 5,000 mg/kg
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Dermal	Professio nal judgeme nt	LD50 estimated to be > 5,000 mg/kg
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Ingestion	Rat	LD50 > 5,000 mg/kg
Benzophenone	Dermal	Rabbit	LD50 3,535 mg/kg
Benzophenone	Ingestion	Rat	LD50 1,900 mg/kg
Carbon black	Dermal	Rabbit	LD50 > 3,000 mg/kg
Carbon black	Ingestion	Rat	LD50 > 8,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Tetrahydrofurfuryl acrylate	Rabbit	Irritant
Isooctyl acrylate	In vitro	No significant irritation
	data	
Isobornyl acrylate	Rabbit	Minimal irritation
1,6-Hexanediol diacrylate	Rabbit	Irritant
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Rabbit	No significant irritation
Benzophenone	Rabbit	No significant irritation
Carbon black	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Tetrahydrofurfuryl acrylate	Rabbit	Severe irritant
Isooctyl acrylate	similar	Mild irritant
	health	
	hazards	
Isobornyl acrylate	Rabbit	Mild irritant
1,6-Hexanediol diacrylate	Rabbit	Moderate irritant
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Rabbit	No significant irritation
Benzophenone	Rabbit	Mild irritant
Carbon black	Rabbit	No significant irritation

Skin Sensitization

Name	Species	Value
Tetrahydrofurfuryl acrylate	Human	Some positive data exist, but the data are not
	and	sufficient for classification
	animal	
Isooctyl acrylate	Mouse	Sensitizing
Isobornyl acrylate	Mouse	Sensitizing
1,6-Hexanediol diacrylate	Guinea	Sensitizing
	pig	
Benzophenone	Guinea	Not sensitizing
	pig	

Respiratory Sensitization

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

Germ Cell Mutagenicity

Name	Route	Value
Tetrahydrofurfuryl acrylate	In Vitro	Not mutagenic
Isooctyl acrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
Isobornyl acrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
1,6-Hexanediol diacrylate	In Vitro	Some positive data exist, but the data are not sufficient for classification
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	In Vitro	Not mutagenic
Benzophenone	In Vitro	Not mutagenic
Benzophenone	In vivo	Not mutagenic
Carbon black	In Vitro	Not mutagenic
Carbon black	In vivo	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Isooctyl acrylate	Dermal	Mouse	Not carcinogenic
1,6-Hexanediol diacrylate	Dermal	Mouse	Not carcinogenic
Benzophenone	Dermal	Multiple	Not carcinogenic
		animal	

		species	
Benzophenone	Ingestion	Multiple	Carcinogenic
		animal	
		species	
Carbon black	Dermal	Mouse	Not carcinogenic
Carbon black	Ingestion	Mouse	Not carcinogenic
Carbon black	Inhalation	Rat	Carcinogenic

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Isooctyl acrylate	Dermal	Not toxic to female reproduction	Rat	NOAEL 57 mg/kg/day	premating & during gestation
Isooctyl acrylate	Dermal	Not toxic to male reproduction	Rat	NOAEL 57 mg/kg/day	premating & during gestation
Isooctyl acrylate	Dermal	Not toxic to development	Rat	NOAEL 57 mg/kg/day	premating & during gestation
Isooctyl acrylate	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 1,000 mg/kg/day	during organogenesi s
1,6-Hexanediol diacrylate	Not Specified	Not toxic to development	Rat	NOAEL 750 mg/kg/day	during organogenesi s
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	Ingestion	Toxic to male reproduction	Rat	NOAEL 100 mg/kg/day	90 days
Benzophenone	Ingestion	Not toxic to female reproduction	Rat	NOAEL 100 mg/kg/day	2 generation
Benzophenone	Ingestion	Not toxic to male reproduction	Rat	NOAEL 80 mg/kg/day	2 generation
Benzophenone	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Rabbit	NOAEL 25 mg/kg/day	during gestation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Tetrahydrofurfuryl acrylate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Isooctyl acrylate	Inhalation	respiratory irritation	All data are negative	Human	NOAEL Not available	occupational exposure
Isooctyl acrylate	Ingestion	central nervous system depression	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 5,000 mg/kg	
Isobornyl acrylate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	official classifica tion	NOAEL Not available	
1,6-Hexanediol diacrylate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Isooctyl acrylate	Dermal	heart endocrine system hematopoietic system liver	All data are negative	Rat	NOAEL 57 mg/kg/day	premating & during gestation

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Isooctyl acrylate	Ingestion	immune system nervous system kidney and/or bladder respiratory system endocrine system	Some positive data exist, but the	Rat	NOAEL 600	90 days
Isooctyl acrylate	ingestion	liver kidney and/or bladder	data are not sufficient for classification	Kai	mg/kg/day	90 days
Isooctyl acrylate	Ingestion	heart bone, teeth, nails, and/or hair hematopoietic system immune system muscles nervous system eyes respiratory system vascular system	All data are negative	Rat	NOAEL 600 mg/kg/day	90 days
1,6-Hexanediol diacrylate	Dermal	skin	May cause damage to organs though prolonged or repeated exposure	Mouse	LOAEL 70 mg/kg/day	80 weeks
2,4,6- Trimethylbenzoyldiphenyl phosphine oxide	Ingestion	skin blood liver kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,000 mg/kg/day	90 days
2,4,6- Trimethylbenzoyldiphenyl phosphine oxide	Ingestion	nervous system	All data are negative	Rat	NOAEL 1,000 mg/kg/day	90 days
Benzophenone	Ingestion	kidney and/or bladder	May cause damage to organs though prolonged or repeated exposure	Rat	LOAEL 75 mg/kg/day	14 weeks
Benzophenone	Ingestion	heart hematopoietic system liver immune system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 850 mg/kg/day	14 weeks
Benzophenone	Ingestion	endocrine system bone, teeth, nails, and/or hair nervous system eyes respiratory system	All data are negative	Rat	NOAEL 850 mg/kg/day	14 weeks
Carbon black	Inhalation	pneumoconiosis	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure

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.

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Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. 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.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - Yes Immediate Hazard - Yes Delayed Hazard - Yes

This material contains a chemical which requires export notification under TSCA Section 12[b]:

<u>Ingredient (Category if applicable)</u>	<u>C.A.S. No</u>	<u>Regulation</u>	<u>Status</u>
Benzophenone	119-61-9	Toxic Substances Control Act (TSCA) 4	Applicable
		Test Rule Chemicals	

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.

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: 1 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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