

Material Safety Data Sheet

DBC

1 . Product and company identification

Common name	: DBC
Material uses	: Not available.
Supplier/Manufacturer	: San Leandro Color 555 Est 14 th Street San Leandro, CA USA, 94577
In case of emergency	: CHEMTREC, U.S. : (800) 424-9300 International: (703) 527-3887
MSDS authored by:	: Kemika XXI Inc. + 1-450-435-7475 11/15/2006

2 . Hazards identification

Physical state	: Liquid. (Aerosol.)
Odor	: Solvent. (Strong.)
Hazard status	: This material is classified hazardous under OSHA regulations in the United States, the WHMIS Controlled Product Regulation in Canada and the NOM-018-STPS-2000 in Mexico.
Emergency overview	: WARNING ! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. CONTENTS UNDER PRESSURE. CANCER HAZARD. CONTAINS MATERIAL WHICH CAN CAUSE CANCER. BIRTH DEFECT HAZARD. CONTAINS MATERIAL WHICH CAN CAUSE BIRTH DEFECT. CAUSES SEVERE EYE IRRITATION. CAUSES RESPIRATORY TRACT AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: BLOOD, KIDNEYS, LUNGS, LIVER, MUCOUS MEMBRANES, PERIPHERAL NERVOUS SYSTEM, GASTROINTESTINAL TRACT, RESPIRATORY TRACT, SKIN, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA. MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR IF SWALLOWED. Do not ingest. Avoid prolonged contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Risk of cancer depends on duration and level of exposure. Avoid exposure during pregnancy.
Routes of entry	: Dermal contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects	
Eyes	: Severely irritating to eyes.
Skin	: May be harmful if absorbed through skin. Irritating to skin. May cause sensitization by skin contact.
Inhalation	: Irritating to respiratory system.
Ingestion	: May be harmful if swallowed.
Potential chronic health effects	: Carcinogenic effects Classified A4 (Not classifiable for humans or animals.) by ACGIH, 3 (Not classifiable for humans.) by IARC [Toluene]. Classified A4 (Not classifiable for humans or animals.) by ACGIH [n-Butyl acetate]. Classified 2B (Possible for humans.) by IARC [Titanium dioxide]. Classified None. by NIOSH [Titanium dioxide]. Classified A4 (Not classifiable for humans or animals.) by ACGIH [Titanium dioxide]. Classified A4 (Not classifiable for humans or animals.) by ACGIH, 3 (Not classifiable for humans.) by IARC [Xylene]. Classified None. by OSHA [Isopropyl alcohol]. Classified A4 (Not classifiable for humans or animals.) by ACGIH, 3 (Not classifiable for humans.) by IARC [Isopropyl

alcohol]. Classified A4 (Not classifiable for humans or animals.) by ACGIH, 3 (Not classifiable for humans.) by IARC [Toluene]. Classified A3 (Proven for animals.) by ACGIH [Petroleum Ether]. Classified 2 (Suspected for humans.) by European Union [Petroleum Ether]. Classified A3 (Proven for animals.) by ACGIH, 2B (Possible for humans.) by IARC [Ethylbenzene]. Classified None. by NIOSH [Ethylbenzene]. Classified + (Proven.) by NIOSH [Carbon Black]. Classified 2B (Possible for humans.) by IARC [Carbon Black]. Classified A4 (Not classifiable for humans or animals.) by ACGIH [Carbon Black]. Classified A3 (Proven for animals.) by ACGIH [2-Butoxyethyl acetate]. Classified 2B (Possible for humans.) by IARC, 3 (Possible for humans.) by European Union [Antimony trioxide]. Classified A2 (Suspected for humans.) by ACGIH [Antimony trioxide]. Classified 3 (Not classifiable for humans.) by IARC [2-Ethylhexyl acrylate]. Classified 3 (Not classifiable for humans.) by IARC [Silica, amorphous].
 Mutagenic effects: Classified None. for humans [Isopropyl alcohol].
 Teratogenic effects: Not available.

Medical conditions aggravated by over-exposure

: Repeated skin exposure can produce local skin destruction or dermatitis. Repeated or prolonged exposure to the substance can produce lung damage. Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to the substance can produce target organ damage.

See toxicological information (section 11)

3 . Composition/information on ingredients

United States

Name	CAS number	%
Difluoroethane	75-37-6	30 - 60
Toluene	108-88-3	30 - 60
n-Butyl acetate	123-86-4	10 - 30
Titanium dioxide	13463-67-7	5 - 10
2-Methoxy-1-methylethyl acetate	108-65-6	5 - 10
Xylene	1330-20-7	5 - 10
Isopropyl alcohol	67-63-0	5 - 10
Aluminum	7429-90-5	5 - 10
Methyl ethyl ketone	78-93-3	1 - 5
4-Methylpentan-2-One	108-10-1	1 - 5
Toluene	108-88-3	1 - 5
n-Butyl Alcohol	71-36-3	1 - 5
Graphite synthetic	7782-42-5	1 - 5
Ethylbenzene	100-41-4	0.5 - 1
Carbon Black	1333-86-4	0.5 - 1
Antimony trioxide	1309-64-4	0.1 - 0.5

Canada

Name	CAS number	%
Difluoroethane	75-37-6	30 - 60
Toluene	108-88-3	30 - 60
n-Butyl acetate	123-86-4	10 - 30
Titanium dioxide	13463-67-7	5 - 10
2-Methoxy-1-methylethyl acetate	108-65-6	5 - 10
Xylene	1330-20-7	5 - 10
Isopropyl alcohol	67-63-0	5 - 10
Aluminum	7429-90-5	5 - 10
Methyl ethyl ketone	78-93-3	1 - 5
4-Methylpentan-2-One	108-10-1	1 - 5
Toluene	108-88-3	1 - 5
n-Butyl Alcohol	71-36-3	1 - 5
Graphite synthetic	7782-42-5	1 - 5
Ethylbenzene	100-41-4	0.5 - 1
Carbon Black	1333-86-4	0.5 - 1

1,2,4-Trimethylbenzene	95-63-6	0.5 - 1
Antimony trioxide	1309-64-4	0.1 - 0.5

Mexico

Classification

Name	UN number	IDLH	H	F	R	Special	CAS number	%
Difluoroethane	UN1030	-	1	4	0		75-37-6	30 - 60
Toluene	UN1294	500 ppm	2	3	0		108-88-3	30 - 60
n-Butyl acetate	UN1123	1700 ppm	1	3	0		123-86-4	10 - 30
2-Methoxy-1-methylethyl acetate	UN1993	-	1	1	0		108-65-6	5 - 10
Xylene	UN1307	900 ppm	2	3	0		1330-20-7	5 - 10
Isopropyl alcohol	UN1219	2000 ppm	1	2	0		67-63-0	5 - 10
Methyl ethyl ketone	UN1193	3000 ppm	1	3	0		78-93-3	1 - 5
4-Methylpentan-2-One	UN1245	500 ppm	2	3	1		108-10-1	1 - 5
Toluene	UN1294	500 ppm	2	3	0		108-88-3	1 - 5
n-Butyl Alcohol	UN1120	1400 ppm	2	2	0		71-36-3	1 - 5
Graphite synthetic	Not regulated.	1250 mg/m ³	1	1	0		7782-42-5	1 - 5
Titanium dioxide	Not regulated.	5000 mg/m ³	0	0	0		13463-67-7	5 - 10
Aluminum	UN1309	-	0	2	0		7429-90-5	5 - 10

4. First aid measures

- Eye contact** : Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 20 minutes. Get medical attention immediately.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 20 minutes. Get medical attention immediately.
- Inhalation** : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
- Ingestion** : Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- Notes to physician** : No specific antidote. Medical staff must contact Poison Control Center.

5. Fire-fighting measures

- Flammability of the product** : Flammable.
- Products of combustion** : These products are carbon oxides, halogenated compounds, hydrogen fluoride. Some metallic oxides.
- Extinguishing media**
- Suitable** : Use dry chemical, carbon dioxide, water spray (fog) or foam.
- Not suitable** : Do not use water jet.
- Special exposure hazards** : Flammable liquid and vapor. Vapor may cause flash fire. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

- Personal precautions** : Immediately contact emergency personnel. Eliminate all ignition sources. Keep unnecessary personnel away. Use suitable protective equipment. Do not touch or walk through spilled material.
- Environmental precautions** : Avoid dispersal of spilled material, runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : If emergency personnel are unavailable, contain spilled material. For small spills, add absorbent (soil may be used in the absence of other suitable materials) and use a non-sparking or explosion-proof means to transfer material to a sealable, appropriate container for disposal. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

7 . Handling and storage

- Handling** : Do not ingest. Avoid contact with eyes, skin and clothing. Keep container closed. Use only with adequate ventilation. Avoid breathing vapor or mist. Keep away from heat, sparks and flame. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Wash thoroughly after handling.
- Storage** : Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

8 . Exposure controls/personal protection

United States

Product name

Difluoroethane

Toluene

n-Butyl acetate

Titanium dioxide

Exposure limits

AIHA WEEL (United States, 1/2004).

TWA: 1000 ppm 8 hour(s). Form: All forms

ACGIH TLV (United States, 1/2005). Skin

TWA: 188 mg/m³ 8 hour(s). Form: All forms.

TWA: 50 ppm 8 hour(s). Form: All forms.

NIOSH REL (United States, 12/2001).

STEL: 560 mg/m³ 15 minute(s). Form: All forms.

STEL: 150 ppm 15 minute(s). Form: All forms.

TWA: 375 mg/m³ 10 hour(s). Form: All forms.

TWA: 100 ppm 10 hour(s). Form: All forms.

OSHA PEL Z2 (United States, 8/1997).

AMP: 500 ppm 10 minute(s). Form: All forms.

TWA: 200 ppm 8 hour(s). Form: All forms.

ACGIH TLV (United States, 1/2005).

STEL: 200 ppm 15 minute(s). Form: All forms.

TWA: 150 ppm 8 hour(s). Form: All forms.

NIOSH REL (United States, 12/2001).

STEL: 950 mg/m³ 15 minute(s). Form: All forms.

STEL: 200 ppm 15 minute(s). Form: All forms.

TWA: 710 mg/m³ 10 hour(s). Form: All forms.

TWA: 150 ppm 10 hour(s). Form: All forms.

OSHA PEL (United States, 8/1997).

TWA: 710 mg/m³ 8 hour(s). Form: All forms.

TWA: 150 ppm 8 hour(s). Form: All forms.

ACGIH TLV (United States, 1/2005).

TWA: 10 mg/m³ 8 hour(s). Form: All forms.

OSHA PEL (United States, 8/1997).

TWA: 15 mg/m³ 8 hour(s). Form: Total dust

2-Methoxy-1-methylethyl acetate

AIHA WEEL (United States, 1/2004).

TWA: 100 ppm 8 hour(s). Form: All forms.

TWA: 50 ppm 8 hour(s). Form: All forms

Xylene

ACGIH TLV (United States, 1/2005).

STEL: 651 mg/m³ 15 minute(s). Form: All forms.

STEL: 150 ppm 15 minute(s). Form: All forms.

TWA: 434 mg/m³ 8 hour(s). Form: All forms.

TWA: 100 ppm 8 hour(s). Form: All forms.

OSHA PEL (United States, 8/1997).

TWA: 435 mg/m³ 8 hour(s). Form: All forms.

TWA: 100 ppm 8 hour(s). Form: All forms.

Isopropyl alcohol

ACGIH TLV (United States, 1/2005).

STEL: 400 ppm 15 minute(s). Form: All forms.

TWA: 200 ppm 8 hour(s). Form: All forms.

NIOSH REL (United States, 12/2001).

STEL: 1225 mg/m³ 15 minute(s). Form: All forms.

STEL: 500 ppm 15 minute(s). Form: All forms.

TWA: 980 mg/m³ 10 hour(s). Form: All forms.

TWA: 400 ppm 10 hour(s). Form: All forms.

OSHA PEL (United States, 8/1997).

TWA: 980 mg/m³ 8 hour(s). Form: All forms.

TWA: 400 ppm 8 hour(s). Form: All forms.

Aluminum

ACGIH TLV (United States, 1/2005).

TWA: 5 mg/m³ 8 hour(s). Form: All forms.

TWA: 10 mg/m³ 8 hour(s). Form: Dust

NIOSH REL (United States, 12/2001).

TWA: 5 mg/m³ 10 hour(s). Form: All forms.

TWA: 5 mg/m³ 10 hour(s). Form: Respirable fraction

TWA: 10 mg/m³ 10 hour(s). Form: Total

OSHA PEL (United States, 8/1997).

TWA: 5 mg/m³ 8 hour(s). Form: Respirable fraction

TWA: 15 mg/m³ 8 hour(s). Form: Total dust

Methyl ethyl ketone

ACGIH TLV (United States, 1/2005).

STEL: 885 mg/m³ 15 minute(s). Form: All forms.

STEL: 300 ppm 15 minute(s). Form: All forms.

TWA: 590 mg/m³ 8 hour(s). Form: All forms.

TWA: 200 ppm 8 hour(s). Form: All forms.

NIOSH REL (United States, 12/2001).

STEL: 885 mg/m³ 15 minute(s). Form: All forms.

STEL: 300 ppm 15 minute(s). Form: All forms.

TWA: 590 mg/m³ 10 hour(s). Form: All forms.

TWA: 200 ppm 10 hour(s). Form: All forms.

OSHA PEL (United States, 8/1997).

TWA: 590 mg/m³ 8 hour(s). Form: All forms.

TWA: 200 ppm 8 hour(s). Form: All forms.

4-Methylpentan-2-One

ACGIH TLV (United States, 1/2005).

STEL: 307 mg/m³ 15 minute(s). Form: All forms.

STEL: 75 ppm 15 minute(s). Form: All forms.

TWA: 205 mg/m³ 8 hour(s). Form: All forms.

TWA: 50 ppm 8 hour(s). Form: All forms.

NIOSH REL (United States, 12/2001).

STEL: 300 mg/m³ 15 minute(s). Form: All forms

STEL: 75 ppm 15 minute(s). Form: All forms

TWA: 205 mg/m³ 10 hour(s). Form: All forms

TWA: 50 ppm 10 hour(s). Form: All forms

OSHA PEL (United States, 8/1997).

TWA: 410 mg/m³ 8 hour(s). Form: All forms

TWA: 100 ppm 8 hour(s). Form: All forms

Toluene

ACGIH TLV (United States, 1/2005). Skin

TWA: 188 mg/m³ 8 hour(s). Form: All forms.

TWA: 50 ppm 8 hour(s). Form: All forms.

n-Butyl Alcohol	<p>NIOSH REL (United States, 12/2001). STEL: 560 mg/m³ 15 minute(s). Form: All forms. STEL: 150 ppm 15 minute(s). Form: All forms. TWA: 375 mg/m³ 10 hour(s). Form: All forms. TWA: 100 ppm 10 hour(s). Form: All forms.</p> <p>OSHA PEL Z2 (United States, 8/1997). AMP: 500 ppm 10 minute(s). Form: All forms. TWA: 200 ppm 8 hour(s). Form: All forms.</p> <p>ACGIH TLV (United States, 1/2005). TWA: 20 ppm 8 hour(s). Form: All forms.</p> <p>NIOSH REL (United States, 12/2001). Skin CEIL: 150 mg/m³ Form: All forms. CEIL: 50 ppm Form: All forms.</p> <p>OSHA PEL (United States, 8/1997). TWA: 300 mg/m³ 8 hour(s). Form: All forms. TWA: 100 ppm 8 hour(s). Form: All forms.</p>
Graphite synthetic	<p>ACGIH TLV (United States, 1/2005). TWA: 2 mg/m³ 8 hour(s). Form: Dust</p> <p>NIOSH REL (United States, 12/2001). TWA: 2.5 mg/m³ 10 hour(s). Form: Respirable fraction</p>
Ethylbenzene	<p>OSHA PEL 1989 (United States, 3/1989). TWA: 2.5 mg/m³ 8 hour(s). Form: Respirable dust</p> <p>ACGIH TLV (United States, 1/2005). STEL: 125 ppm 15 minute(s). Form: All forms. TWA: 100 ppm 8 hour(s). Form: All forms.</p> <p>NIOSH REL (United States, 12/2001). STEL: 545 mg/m³ 15 minute(s). Form: All forms. STEL: 125 ppm 15 minute(s). Form: All forms. TWA: 435 mg/m³ 10 hour(s). Form: All forms. TWA: 100 ppm 10 hour(s). Form: All forms.</p> <p>OSHA PEL (United States, 8/1997). TWA: 435 mg/m³ 8 hour(s). Form: All forms. TWA: 100 ppm 8 hour(s). Form: All forms.</p>
Carbon Black	<p>ACGIH TLV (United States, 1/2005). TWA: 3.5 mg/m³ 8 hour(s). Form: All forms.</p> <p>NIOSH REL (United States, 12/2001). TWA: 3.5 mg/m³ 10 hour(s). Form: All forms.</p>
Antimony trioxide	<p>OSHA PEL (United States, 8/1997). TWA: 3.5 mg/m³ 8 hour(s). Form: All forms.</p> <p>ACGIH TLV (United States, 1/2005). TWA: 0.5 mg/m³ 8 hour(s). Form: All forms.</p> <p>OSHA PEL (United States, 8/1997). TWA: 0.5 mg/m³ 8 hour(s). Form: All forms.</p>

Canada

Product name	Exposure limits
Toluene	<p>ACGIH TLV (United States, 1/2005). Skin TWA: 188 mg/m³ 8 hour(s). Form: All forms. TWA: 50 ppm 8 hour(s). Form: All forms.</p>
n-Butyl acetate	<p>ACGIH TLV (United States, 1/2005). STEL: 200 ppm 15 minute(s). Form: All forms. TWA: 150 ppm 8 hour(s). Form: All forms.</p>
Titanium dioxide	<p>ACGIH TLV (United States, 1/2005). TWA: 10 mg/m³ 8 hour(s). Form: All forms.</p>
Xylene	<p>ACGIH TLV (United States, 1/2005). STEL: 651 mg/m³ 15 minute(s). Form: All forms. STEL: 150 ppm 15 minute(s). Form: All forms. TWA: 434 mg/m³ 8 hour(s). Form: All forms. TWA: 100 ppm 8 hour(s). Form: All forms.</p>

Isopropyl alcohol	ACGIH TLV (United States, 1/2005). STEL: 400 ppm 15 minute(s). Form: All forms. TWA: 200 ppm 8 hour(s). Form: All forms.
Aluminum	ACGIH TLV (United States, 1/2005). TWA: 5 mg/m ³ 8 hour(s). Form: All forms. TWA: 10 mg/m ³ 8 hour(s). Form: Dust
Methyl ethyl ketone	ACGIH TLV (United States, 1/2005). STEL: 885 mg/m ³ 15 minute(s). Form: All forms. STEL: 300 ppm 15 minute(s). Form: All forms. TWA: 590 mg/m ³ 8 hour(s). Form: All forms. TWA: 200 ppm 8 hour(s). Form: All forms.
4-Methylpentan-2-One	ACGIH TLV (United States, 1/2005). STEL: 307 mg/m ³ 15 minute(s). Form: All forms. STEL: 75 ppm 15 minute(s). Form: All forms. TWA: 205 mg/m ³ 8 hour(s). Form: All forms. TWA: 50 ppm 8 hour(s). Form: All forms.
Toluene	ACGIH TLV (United States, 1/2005). Skin TWA: 188 mg/m ³ 8 hour(s). Form: All forms. TWA: 50 ppm 8 hour(s). Form: All forms.
n-Butyl Alcohol	ACGIH TLV (United States, 1/2005). TWA: 20 ppm 8 hour(s). Form: All forms.
Graphite synthetic	ACGIH TLV (United States, 1/2005). TWA: 2 mg/m ³ 8 hour(s). Form: Dust
Ethylbenzene	ACGIH TLV (United States, 1/2005). STEL: 125 ppm 15 minute(s). Form: All forms. TWA: 100 ppm 8 hour(s). Form: All forms.
Carbon Black	ACGIH TLV (United States, 1/2005). TWA: 3.5 mg/m ³ 8 hour(s). Form: All forms.
1,2,4-Trimethylbenzene	ACGIH TLV (United States, 1/2005). TWA: 123 mg/m ³ 8 hour(s). Form: All forms. TWA: 25 ppm 8 hour(s). Form: All forms.
Antimony trioxide	ACGIH TLV (United States, 1/2005). TWA: 0.5 mg/m ³ 8 hour(s). Form: All forms.

Mexico

Product name	Exposure limits
Toluene	NOM-010-STPS (Mexico, 9/2000). Skin CPT: 188 mg/m ³ 8 hour(s). Form: All forms. CPT: 50 ppm 8 hour(s). Form: All forms.
n-Butyl acetate	NOM-010-STPS (Mexico, 9/2000). CCT: 950 mg/m ³ 15 minute(s). Form: All forms. CCT: 200 ppm 15 minute(s). Form: All forms. CPT: 710 mg/m ³ 8 hour(s). Form: All forms. CPT: 150 ppm 8 hour(s). Form: All forms.
Titanium dioxide	NOM-010-STPS (Mexico, 9/2000). CCT: 20 mg/m ³ 15 minute(s). Form: All forms. CPT: 10 mg/m ³ 8 hour(s). Form: All forms.
Xylene	NOM-010-STPS (Mexico, 9/2000). CCT: 655 mg/m ³ 15 minute(s). Form: All forms. CCT: 150 ppm 15 minute(s). Form: All forms. CPT: 435 mg/m ³ 8 hour(s). Form: All forms. CPT: 100 ppm 8 hour(s). Form: All forms.
Isopropyl alcohol	NOM-010-STPS (Mexico, 9/2000). Skin CCT: 1225 mg/m ³ 15 minute(s). Form: All forms. CCT: 500 ppm 15 minute(s). Form: All forms. CPT: 980 mg/m ³ 8 hour(s). Form: All forms. CPT: 400 ppm 8 hour(s). Form: All forms.
Aluminum	NOM-010-STPS (Mexico, 9/2000). CPT: 5 mg/m ³ 8 hour(s). Form: All forms.

Methyl ethyl ketone	CPT: 5 mg/m ³ 8 hour(s). Form: Powder NOM-010-STPS (Mexico, 9/2000). CCT: 885 mg/m ³ 15 minute(s). Form: All forms. CCT: 300 ppm 15 minute(s). Form: All forms. CPT: 590 mg/m ³ 8 hour(s). Form: All forms. CPT: 200 ppm 8 hour(s). Form: All forms.
4-Methylpentan-2-One	NOM-010-STPS (Mexico, 9/2000). CCT: 307 mg/m ³ 15 minute(s). Form: All forms CCT: 75 ppm 15 minute(s). Form: All forms CPT: 205 mg/m ³ 8 hour(s). Form: All forms CPT: 50 ppm 8 hour(s). Form: All forms
Toluene	NOM-010-STPS (Mexico, 9/2000). Skin CPT: 188 mg/m ³ 8 hour(s). Form: All forms. CPT: 50 ppm 8 hour(s). Form: All forms.
n-Butyl Alcohol	NOM-010-STPS (Mexico, 9/2000). Skin LMPE-P: 150 mg/m ³ Form: All forms. LMPE-P: 50 ppm Form: All forms.
Graphite synthetic	NOM-010-STPS (Mexico, 9/2000). CPT: 2 mg/m ³ 8 hour(s). Form: Powder

Engineering measures : Use only with adequate ventilation. If user operations generate dust, fumes, 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. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Personal protection

- Eyes** : Splash goggles.
- Skin** : Synthetic apron.
- Respiratory** : Vapor respirator.
- Hands** : Nitrile gloves.



HMIS Code/Personal protective equipment : J

Personal protection in case of a large spill : Safety glasses, goggles or face shield. Impervious gloves. Full suit. Boots. Wear NIOSH-approved self-contained breathing apparatus or equivalent and full protective gear.

Hygiene measures : Wash hands, forearms and face thoroughly after handling compounds and before eating, smoking and using the lavatory and at the end of the day. Follow good industrial hygiene practice.

9 . Physical and chemical properties

- Physical state** : Liquid. (Aerosol.)
- Flash point** : Closed cup: -2.78°C (27°F).(Pensky-Martens.)
- Auto-ignition temperature** : The lowest known value is 342.85°C (649.1°F) (n-Butyl Alcohol).
- Flammable limits** : Lower: 1.6%
- Odor** : Solvent. (Strong.)
- Boiling/condensation point** : 77.8 to 213.9°C (172 to 417°F)
- Melting/freezing point** : Weighted average: -84.17°C (-119.5°F)
- Critical temperature** : The lowest known value is 262.6°C (504.7°F) (Methyl ethyl ketone).
- Relative density** : 1.014 (Water = 1)
- Vapor pressure** : <3.1 kPa (<23 mm Hg) (at 20°C)
- Vapor density** : >1 (Air = 1)

- Odor threshold** : Weighted average: 5.65 ppm
- Evaporation rate** : <1 compared with Ether (anhydrous).
- VOC** : 60 (%)
- Solubility** : Soluble in methanol, diethyl ether.
Very slightly soluble in n-octanol.
Insoluble in cold water, hot water.

10 . Stability and reactivity

- Stability and reactivity** : The product is stable.
- Incompatibility with various substances** : Reactive with oxidizing materials, reducing materials, acids and alkalis.
Slightly reactive or incompatible with the following materials: organic materials.
- Hazardous decomposition products** : These products are halogenated compounds, hydrogen fluoride.
- Conditions of reactivity** : Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge.
Highly flammable in the presence of the following materials or conditions: heat.
Flammable in the presence of the following materials or conditions: shocks and mechanical impacts.

11 . Toxicological information

Toxicity data

Product/ingredient name	Test	Result	Route	Species
Toluene	LD50	636 mg/kg	Oral	Rat
	LD50	1221 mg/kg	Dermal	Rabbit
n-Butyl acetate	LD50	10768 mg/kg	Oral	Rat
	LD50	3200 mg/kg	Oral	Rabbit
	LD50	4300 mg/kg	Oral	Mammal
	LD50	>17600 mg/kg	Dermal	Rabbit
	LD50	8532 mg/kg	Oral	Rat
2-Methoxy-1-methylethyl acetate	LD50	8532 mg/kg	Oral	Rat
Xylene	LD50	4300 mg/kg	Oral	Rat
	LD50	2119 mg/kg	Oral	Mouse
	LD50	>1700 mg/kg	Dermal	Rabbit
	LC50	6350 ppm (4 hour(s))	Inhalation	Rat
Isopropyl alcohol	LD50	5045 mg/kg	Oral	Rat
	LD50	6410 mg/kg	Oral	Rabbit
	LD50	3600 mg/kg	Oral	Mouse
	LD50	12800 mg/kg	Dermal	Rabbit
	LC50	16000 ppm (8 hour(s))	Inhalation	Rat
Methyl ethyl ketone	LD50	2737 mg/kg	Oral	Rat
	LD50	4050 mg/kg	Oral	Mouse
	LD50	6480 mg/kg	Dermal	Rabbit
4-Methylpentan-2-One	LD50	2080 mg/kg	Oral	Rat
	LD50	1600 mg/kg	Oral	Guinea pig
	LD50	1900 mg/kg	Oral	Mouse
	LD50	636 mg/kg	Oral	Rat
Toluene	LD50	636 mg/kg	Oral	Rat
	LD50	1221 mg/kg	Dermal	Rabbit
n-Butyl Alcohol	LD50	790 mg/kg	Oral	Rat
	LD50	3484 mg/kg	Oral	Rabbit
	LD50	3400 mg/kg	Dermal	Rabbit
	LD50	3500 mg/kg	Oral	Rat
Ethylbenzene	LD50	3500 mg/kg	Oral	Rat
Carbon Black	LD50	>15400 mg/kg	Oral	Rat
Antimony trioxide	LD50	>34600 mg/kg	Oral	Rat

Acute Effects

- Eyes** : Severely irritating to eyes.

- Skin** : May be harmful if absorbed through skin. Irritating to skin. May cause sensitization by skin contact.
- Inhalation** : Irritating to respiratory system.
- Ingestion** : May be harmful if swallowed.
- Potential chronic health effects** : Carcinogenic effects Classified A4 (Not classifiable for humans or animals.) by ACGIH, 3 (Not classifiable for humans.) by IARC [Toluene]. Classified A4 (Not classifiable for humans or animals.) by ACGIH [n-Butyl acetate]. Classified 2B (Possible for humans.) by IARC [Titanium dioxide]. Classified None. by NIOSH [Titanium dioxide]. Classified A4 (Not classifiable for humans or animals.) by ACGIH [Titanium dioxide]. Classified A4 (Not classifiable for humans or animals.) by ACGIH, 3 (Not classifiable for humans.) by IARC [Xylene]. Classified None. by OSHA [Isopropyl alcohol]. Classified A4 (Not classifiable for humans or animals.) by ACGIH, 3 (Not classifiable for humans.) by IARC [Isopropyl alcohol]. Classified A4 (Not classifiable for humans or animals.) by ACGIH, 3 (Not classifiable for humans.) by IARC [Toluene]. Classified A3 (Proven for animals.) by ACGIH [Petroleum Ether]. Classified 2 (Suspected for humans.) by European Union [Petroleum Ether]. Classified A3 (Proven for animals.) by ACGIH, 2B (Possible for humans.) by IARC [Ethylbenzene]. Classified None. by NIOSH [Ethylbenzene]. Classified + (Proven.) by NIOSH [Carbon Black]. Classified 2B (Possible for humans.) by IARC [Carbon Black]. Classified A4 (Not classifiable for humans or animals.) by ACGIH [Carbon Black]. Classified A3 (Proven for animals.) by ACGIH [2-Butoxyethyl acetate]. Classified 2B (Possible for humans.) by IARC, 3 (Possible for humans.) by European Union [Antimony trioxide]. Classified A2 (Suspected for humans.) by ACGIH [Antimony trioxide]. Classified 3 (Not classifiable for humans.) by IARC [2-Ethylhexyl acrylate]. Classified 3 (Not classifiable for humans.) by IARC [Silica, amorphous].
 Mutagenic effects Classified None. for humans [Isopropyl alcohol].
 Teratogenic effects: Not available.
- Target organs** : Contains material which causes damage to the following organs: blood, kidneys, lungs, liver, mucous membranes, peripheral nervous system, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

Special remarks on chronic effects on humans : Embryotoxic and/or fetotoxic in animals. (Xylene)

12 . Ecological information

Ecotoxicity data				
Product/ingredient name	Species	Period	Result	
Toluene	Daphnia magna (EC50)	48 hour(s)	6 mg/l	
	Daphnia magna (EC50)	48 hour(s)	6.56 mg/l	
	Oncorhynchus mykiss (EC50)	48 hour(s)	6.78 mg/l	
	Oncorhynchus mykiss (LC50)	96 hour(s)	5.8 mg/l	
	Oncorhynchus mykiss (LC50)	96 hour(s)	6.78 mg/l	
	Pimephales promelas (LC50)	96 hour(s)	12.6 mg/l	
n-Butyl acetate	Pimephales promelas (EC50)	48 hour(s)	19 mg/l	
	Pimephales promelas (LC50)	96 hour(s)	18 mg/l	
	Lepomis macrochirus (LC50)	96 hour(s)	100 mg/l	
Titanium dioxide	Daphnia magna (EC50)	48 hour(s)	>1000 mg/l	
	Xylene	Oncorhynchus mykiss (LC50)	96 hour(s)	3.3 mg/l
Xylene	Oncorhynchus mykiss (LC50)	96 hour(s)	8.2 mg/l	
	Lepomis macrochirus (LC50)	96 hour(s)	8.6 mg/l	
	Lepomis macrochirus (LC50)	96 hour(s)	12 mg/l	
	Lepomis macrochirus (LC50)	96 hour(s)	13.3 mg/l	
	Pimephales promelas (LC50)	96 hour(s)	13.4 mg/l	
	Isopropyl alcohol	Pimephales promelas (EC50)	48 hour(s)	10000 mg/l
		Lepomis macrochirus (LC50)	96 hour(s)	>1400 mg/l
		Pimephales promelas (LC50)	96 hour(s)	6550 mg/l
		Pimephales promelas (LC50)	96 hour(s)	9640 mg/l
		Pimephales promelas (LC50)	96 hour(s)	10400 mg/l
	Pimephales promelas (LC50)	96 hour(s)	11130 mg/l	

Aluminum	Oncorhynchus mykiss (LC50)	96 hour(s)	0.12 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	0.16 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	0.31 mg/l
Methyl ethyl ketone	Daphnia magna (EC50)	48 hour(s)	5091 mg/l
	Pimephales promelas (LC50)	96 hour(s)	3220 mg/l
4-Methylpentan-2-One	Scenedesmus subspicatus (EC50)	48 hour(s)	980 mg/l
	Scenedesmus subspicatus (EC50)	48 hour(s)	2000 mg/l
	Pimephales promelas (LC50)	96 hour(s)	505 mg/l
	Pimephales promelas (LC50)	96 hour(s)	537 mg/l
	Pimephales promelas (LC50)	96 hour(s)	540 mg/l
Toluene	Daphnia magna (EC50)	48 hour(s)	6 mg/l
	Daphnia magna (EC50)	48 hour(s)	6.56 mg/l
	Oncorhynchus mykiss (EC50)	48 hour(s)	6.78 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	5.8 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	6.78 mg/l
	Pimephales promelas (LC50)	96 hour(s)	12.6 mg/l
n-Butyl Alcohol	Daphnia magna (EC50)	48 hour(s)	1983 mg/l
	Lepomis macrochirus (LC50)	96 hour(s)	100 mg/l
	Pimephales promelas (LC50)	96 hour(s)	1730 mg/l
	Pimephales promelas (LC50)	96 hour(s)	1910 mg/l
	Pimephales promelas (LC50)	96 hour(s)	1940 mg/l
	Pimephales promelas (LC50)	96 hour(s)	1940 mg/l
Ethylbenzene	Daphnia magna (EC50)	48 hour(s)	2.93 mg/l
	Daphnia magna (EC50)	48 hour(s)	2.97 mg/l
	Selenastrum capricornutum (EC50)	48 hour(s)	7.2 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	4.2 mg/l
	Pimephales promelas (LC50)	96 hour(s)	9.09 mg/l
	Poecilia reticulata (LC50)	96 hour(s)	9.6 mg/l
Antimony trioxide	Selenastrum capricornutum (EC50)	48 hour(s)	0.74 mg/l
	Daphnia magna (EC50)	48 hour(s)	423.45 mg/l
	Lepomis macrochirus (LC50)	96 hour(s)	>440 mg/l

Environmental precautions : No known significant effects or critical hazards.

Octanol/water partition coefficient : The product is more soluble in octanol.

Bioconcentration factor : Not available.

Products of degradation : These products are carbon oxides and water, halogenated compounds. Some metallic oxides.

Toxicity of the products of biodegradation : The products of degradation are as toxic as the product itself.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material, runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional and local authority requirements.

14 . Transport information

NAERG : 126

Regulatory information	Proper shipping name	Class	UN number	PG	Label
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UN / IMDG / IATA Classification	AEROSOLS, FLAMMABLE, N.O.S. (each not exceeding 1 L capacity) (Difluoroethane, Toluene)	2.1	UN1950	II	
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DOT Classification	AEROSOLS, FLAMMABLE, N.O.S. (each not exceeding 1 L capacity) (Difluoroethane, Toluene)	2.1	UN1950	II
TDG Classification	AEROSOLS, FLAMMABLE, N.O.S. (each not exceeding 1 L capacity) (Difluoroethane, Toluene)	2.1	UN1950	II



15 . Regulatory information

United States

HCS Classification : Flammable aerosol
 Pressure hazard
 Irritating material
 Sensitizing material
 Carcinogen
 Target organ effects

U.S. Federal regulations : TSCA 4(a) final test rules: n-Butyl acetate; 4-Methylpentan-2-One
 TSCA 8(a) PAIR: 2-Methoxy-1-methylethyl acetate
 TSCA 8(b) inventory: All components listed.
 TSCA 12(b) one-time export: n-Butyl acetate; 4-Methylpentan-2-One
 SARA 302/304/311/312 extremely hazardous substances: No products were found.
 SARA 302/304 emergency planning and notification: No products were found.
 SARA 302/304/311/312 hazardous chemicals: Difluoroethane; Toluene; n-Butyl acetate; Titanium dioxide; 2-Methoxy-1-methylethyl acetate; Xylene; Isopropyl alcohol; Aluminum; Methyl ethyl ketone; 4-Methylpentan-2-One; Toluene; n-Butyl Alcohol; Graphite synthetic
 SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
 Difluoroethane: Fire hazard, Sudden release of pressure, Delayed (chronic) health hazard;
 Toluene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard;
 n-Butyl acetate: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard;
 Titanium dioxide: Delayed (chronic) health hazard;
 2-Methoxy-1-methylethyl acetate: Fire hazard;
 Xylene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard;
 Isopropyl alcohol: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard;
 Aluminum: Fire hazard, reactive;
 Methyl ethyl ketone: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard;
 4-Methylpentan-2-One: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard;
 Toluene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard;
 n-Butyl Alcohol: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard;
 Graphite synthetic: Immediate (acute) health hazard
 Clean Water Act (CWA) 307: Toluene; Toluene; Ethylbenzene; Antimony trioxide
 Clean Water Act (CWA) 311: Toluene; n-Butyl acetate; Xylene; Toluene; Ethylbenzene; Antimony trioxide
 Clean Air Act (CAA) 112 accidental release prevention: Difluoroethane
 Clean Air Act (CAA) 112 regulated flammable substances: Difluoroethane
 Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

SARA 313

Form R - Reporting requirements	Product name	CAS number	Concentration
	Toluene	108-88-3	30 - 60
	Xylene	1330-20-7	5 - 10
	Isopropyl alcohol	67-63-0	5 - 10
	Aluminum	7429-90-5	5 - 10
	Methyl ethyl ketone	78-93-3	1 - 5
	4-Methylpentan-2-One	108-10-1	1 - 5
	Toluene	108-88-3	1 - 5
	n-Butyl Alcohol	71-36-3	1 - 5
	Ethylbenzene	100-41-4	0.5 - 1
	Antimony trioxide	1309-64-4	0.1 - 0.5

Supplier notification	:	Toluene	108-88-3	30 - 60
		Xylene	1330-20-7	5 - 10
		Isopropyl alcohol	67-63-0	5 - 10
		Aluminum	7429-90-5	5 - 10
		Methyl ethyl ketone	78-93-3	1 - 5
		4-Methylpentan-2-One	108-10-1	1 - 5
		Toluene	108-88-3	1 - 5
		n-Butyl Alcohol	71-36-3	1 - 5
		Ethylbenzene	100-41-4	0.5 - 1
	Antimony trioxide	1309-64-4	0.1 - 0.5	

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations : Pennsylvania RTK: Toluene: (environmental hazard, generic environmental hazard); n-Butyl acetate: (environmental hazard, generic environmental hazard); Titanium dioxide: (generic environmental hazard); Xylene: (environmental hazard, generic environmental hazard); Isopropyl alcohol: (environmental hazard, generic environmental hazard); Aluminum: (environmental hazard, generic environmental hazard); Methyl ethyl ketone: (environmental hazard, generic environmental hazard); 4-Methylpentan-2-One: (environmental hazard, generic environmental hazard); Toluene: (environmental hazard, generic environmental hazard); n-Butyl Alcohol: (environmental hazard, generic environmental hazard); Graphite synthetic: (generic environmental hazard); Rutile: (generic environmental hazard); Petroleum Ether: (generic environmental hazard); Stoddard Solvent: (generic environmental hazard); Ethylbenzene: (environmental hazard, generic environmental hazard); 2-Methylpropan-1-ol: (environmental hazard, generic environmental hazard); Carbon Black: (generic environmental hazard); 2-Butoxyethyl acetate: (environmental hazard, generic environmental hazard); 1,2,4-Trimethylbenzene: (environmental hazard, generic environmental hazard); Antimony trioxide: (environmental hazard, generic environmental hazard); 2-Ethylhexyl acrylate: (generic environmental hazard)

Minnesota: 1,2,4-Trimethylbenzene

Massachusetts RTK: Difluoroethane; Toluene; n-Butyl acetate; Titanium dioxide; Xylene; Isopropyl alcohol; Aluminum; Methyl ethyl ketone; 4-Methylpentan-2-One; Toluene; n-Butyl Alcohol; Graphite synthetic; Stoddard Solvent; Ethylbenzene; 2-Methylpropan-1-ol; Carbon Black; 1,2,4-Trimethylbenzene; Antimony trioxide; 2-Ethylhexyl acrylate; Silica, amorphous

New Jersey: Difluoroethane; Toluene; n-Butyl acetate; Titanium dioxide; Xylene; Isopropyl alcohol; Aluminum; Methyl ethyl ketone; 4-Methylpentan-2-One; Toluene; n-Butyl Alcohol; Petroleum Ether; Stoddard Solvent; Ethylbenzene; 2-Methylpropan-1-ol; Carbon Black; 2-Butoxyethyl acetate; 1,2,4-Trimethylbenzene; Antimony trioxide; Silica, amorphous

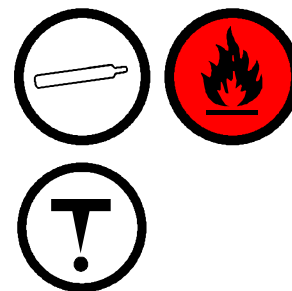
WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Toluene	No.	Yes.	No.	7000 µg/day (ingestion) 13000 µg/day (inhalation)
Toluene	No.	Yes.	No.	7000 µg/day (ingestion) 13000 µg/day (inhalation)
Ethylbenzene	Yes.	No.	No.	No.
Carbon Black	Yes.	No.	No.	No.
Antimony trioxide	Yes.	No.	No.	No.

Canada

WHMIS (Canada)

: Class A: Compressed gas.
 Class B-5: Flammable aerosol.
 Class D-2A: Material causing other toxic effects (Very toxic).
 Class D-2B: Material causing other toxic effects (Toxic).



DSL : All components listed.

This product has been classified in accordance with the hazard criteria of the Canadian CPR, the United States OSHA and the Mexican NOM -018-STPS-2000. This MSDS contains all the information required by the CPR, OSHA, the American National Standard Institute (ANSI) Z400.1 and NOM -018-STPS-2000.

Mexico

Classification

:



HAZARD RATINGS

- 4- Extreme
- 3- Serious
- 2- Moderate
- 1- Slight
- 0- Minimal

International lists

: This product, (and its ingredients) is (are) listed on national inventories, or is (are) exempted from being listed, in Australia (AICS), in Europe (EINECS/ELINCS), in Korea (TCCL), in Japan (METI), in the Philippines (RA6969).

16 . Other information

Label requirements (U.S.A.)

: EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. CONTENTS UNDER PRESSURE.
 CANCER HAZARD.
 CONTAINS MATERIAL WHICH CAN CAUSE CANCER.
 BIRTH DEFECT HAZARD.
 CONTAINS MATERIAL WHICH CAN CAUSE BIRTH DEFECT.
 CAUSES SEVERE EYE IRRITATION.
 CAUSES RESPIRATORY TRACT AND SKIN IRRITATION.
 MAY CAUSE ALLERGIC SKIN REACTION.
 CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: BLOOD, KIDNEYS, LUNGS, LIVER, MUCOUS MEMBRANES, PERIPHERAL NERVOUS SYSTEM, GASTROINTESTINAL TRACT, RESPIRATORY TRACT, SKIN, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA.
 MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR IF SWALLOWED.

Hazardous Material Information System (U.S.A.)

:

HMIS RATING

Health	*	3
Fire hazard		4
Physical Hazard		1
Personal protection		J

HAZARD RATINGS

- 4- Extreme
 - 3- Serious
 - 2- Moderate
 - 1- Slight
 - 0- Minimal
- See section 8 for more detailed information on personal protection.

National Fire Protection Association (U.S.A.)

:



References

: ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - 29CFR Part1910.1200 OSHA MSDS Requirements. - 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005. - Official Mexican Standards NOM-018-STPS-2000 and NOM-004-SCT2-1994.

Date of issue

: 11/15/2006

Version

: 1

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.