1. Identification

1.1. Product identifier
Product Identity                    SMART SPACER Die Spacer
Alternate Names                    SMART SPACER Die Spacer

1.2. Relevant identified uses of the substance or mixture and uses advised against
Intended use                        See Technical Data Sheet.
Application Method                  See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet
Company Name                        George Taub Products & Fusion Co., Inc.
                                      277 New York Ave
                                      Jersey City, NJ 07307

Emergency CHEMTREC (USA)            (800) 424-9300
24 hour Emergency Telephone No.     201-798-5353
Customer Service: George Taub Products & Fusion Co., Inc.
                                      Chemtrec: 800-424-9300, 703-527-3887

2. Hazard(s) identification

2.1. Classification of the substance or mixture
Flam. Liq. 2;H225                  Highly Flammable liquid and vapor.
Skin Irrit. 3;H316                 Causes mild skin irritation. (Not adopted by US OSHA)
Eye Irrit. 2;H319                  Causes serious eye irritation.
STOT SE 3;H336                    May cause drowsiness or dizziness.

2.2. Label elements
Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

![Danger](image)

H225 Highly flammable liquid and vapor.
H316 Causes mild skin irritation.
H319 Causes serious eye irritation.
H336 May cause drowsiness and dizziness.

[Prevention]:

P210 Keep away from heat / sparks / open flames / hot surfaces - No smoking.
P235 Keep cool.
P240 Ground / bond container and receiving equipment.
P241 Use explosion-proof electrical / ventilating / light / equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing dust / fume / gas / mist / vapors / spray.
P262 Do not get in eyes, on skin, or on clothing.
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves / eye protection / face protection.

[Response]:

P301+310 IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician.
P303+361+353 IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water / shower.
P304+312 IF INHALED: Call a POISON CENTER or doctor / physician if you feel unwell.
P305+351+338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P331 Do NOT induce vomiting.
P332+313 If skin irritation occurs: Get medical advice / attention.
P337+313 If eye irritation persists: Get medical advice / attention.
P340 Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P370+378 In case of fire: Use extinguishing media listed in section 5 of SDS for extinction.

[Storage]:

P403+233 Store in a well ventilated place. Keep container tightly closed.
P405 Store locked up.

[Disposal]:

P501 Dispose of contents / container in accordance with local / national regulations.

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.
### Ingredient/Chemical Designations

<table>
<thead>
<tr>
<th>Ingredient/Chemical Designations</th>
<th>Weight %</th>
<th>GHS Classification</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butanone</td>
<td>50 - 75</td>
<td>Flam. Liq. 2;H225 Eye Irrit. 2;H319</td>
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<tr>
<td>CAS Number: 0000078-93-3</td>
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<td>STOT SE 3;H336</td>
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<td>Titanium dioxide</td>
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<td>[1][2]</td>
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<td>CAS Number: 0013463-67-7</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Propylene glycol monomethyl ether acetate</td>
<td>1.0 - 10</td>
<td>Flam. Liq. 3;H226</td>
<td>[1]</td>
</tr>
<tr>
<td>CAS Number: 0000108-65-6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), light aromatic</td>
<td>1.0 - 10</td>
<td>Asp. Tox. 1;H304</td>
<td>[1]</td>
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<tr>
<td>CAS Number: 0064742-95-6</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), light aliphatic</td>
<td>1.0 - 10</td>
<td>Asp. Tox. 1;H304</td>
<td>[1]</td>
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<tr>
<td>CAS Number: 0064742-89-8</td>
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<tr>
<td>Carbon black</td>
<td>1.0 - 10</td>
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<tr>
<td>Benzene, trimethyl-</td>
<td>1.0 - 10</td>
<td>Flam. Liq. 2;H225 Acute Tox. 4;H302</td>
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<td>Acute Tox. 4;H312 Skin Irrit. 2;H315</td>
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<td>Acute Tox. 4;H312 Skin Irrit. 2;H315</td>
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<tr>
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<td></td>
<td>Aquatic Chronic 2;H411</td>
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</table>

In accordance with paragraph (i) of §1910.1200, the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

[1] Substance classified with a health or environmental hazard.


*The full texts of the phrases are shown in Section 16.

---

### 4. First aid measures

#### 4.1. Description of first aid measures

**General**

In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

**Inhalation**

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

**Eyes**

Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.

**Skin**

Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.

**Ingestion**

Seek medical attention. If victim is drowsy/unconscious, place on the left side with head down. Do not give anything by mouth. If victim is conscious/alert, give no more than 2 glasses of water and induce vomiting (30 cc or 2 tbsp syrup of ipecac or stick finger in person’s throat). Reduce above by half for child. Keep victim’s head below hips.
4.2. Most important symptoms and effects, both acute and delayed

**Overview**

Inhalation/Ingestion: Solvent vapor or mist can cause headache, nausea, dizziness, incoordination, stupor, irritation of nose, throat, lungs. Irritation of digestive tract. Nervous system depression (fatigue, drowsiness, dizziness)

Skin/Eyes: Burning, tearing, redness and swelling of eyes, transient corneal injury, drying and cracking of skin.

Carcinogenicity: None, but Proposition 65 (CA)-Warning- This product contains trace amounts of heavy metals which the State of Calif. has determined are carcinogens or cause reproductive toxicity. (As, Cd, Pb, Hg, and/or Ni are present in trace PPM.)

**POTENTIAL HEALTH EFFECTS**

**Eye Contact:** May cause tearing, stinging, redness, irritation, and burns.

**Inhalation:** Irritating to respiratory tract. Prolonged or repeated breathing of very high vapor concentrations cause euphoria, excitation, and dizziness, headaches, nausea, and vomiting, abdominal pain, fatigue, muscular weakness. Aspiration into the lungs can cause CNS (central nervous system) and subsequent aspiration into the lungs can cause pulmonary edema and chemical pneumonia depression. Chronic overexposure in high concentrations may produce CNS depression.

**Ingestion:** Irritation of the mouth, esophagus, and stomach can develop following ingestion. Symptoms include burning of the mouth, sore throat, vomiting, nausea, dizziness, loss of consciousness. Due to its light viscosity, there is danger of aspiration into the lungs during vomiting. Aspiration can result in severe lung damage or death.

**Skin Contact:** Prolonged or repeated skin contact may cause moderate to severe irritation including itching and redness of the skin, defatting, and/or dermatitis. This product can also be absorbed through the skin and produce CNS symptoms. Single prolonged exposure is not likely to result in the product being absorbed through the skin in harmful amounts.

**Exposure to solvent vapor concentrations from the component solvents in excess of the stated occupational exposure limits may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms include headache, nausea, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.**

**Signs And Symptoms Of Exposure:** Eye irritation, respiratory irritation, drying and cracking of skin, dizziness, fatigue, headache, unconsciousness or asphyxiation. Chronic effects of ingestion and subsequent aspiration into the lungs can cause pneumatocele (lung cavity) formation and chronic lung dysfunction. Repeated breathing of vapors can cause effects to liver and kidneys.

Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in dryness, irritation and possible non-allergic contact dermatitis. Solvents may also be absorbed through the skin. Splashes of liquid in the eyes may cause irritation and soreness with possible reversible damage. See section 2 for further details.

**Inhalation**

May cause drowsiness or dizziness.

**Eyes**

Causes serious eye irritation.

**Skin**

Causes mild skin irritation. (Not adopted by US OSHA)
5. Fire-fighting measures

5.1. Extinguishing media
Water spray, dry chemical, alcohol foam, carbon dioxide

5.2. Special hazards arising from the substance or mixture
Hazardous decomposition: Oxides of Carbon
Keep away from heat / sparks / open flames / hot surfaces - No smoking.
Keep cool.
Ground / bond container and receiving equipment.
Use explosion-proof electrical / ventilating / light / equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing dust / fume / gas / mist / vapors / spray.
Do not get in eyes, on skin, or on clothing.

5.3. Advice for fire-fighters
Wear self-contained breathing apparatus (pressure-demand, MSHA/NIOSH approved or equivalent) and full protective gear. Use water spray to cool containers. For small bottle: Smother with water, wet blanket or towel.

Vapors can travel to a source of ignition and flash back. Material can form explosive vapors with air.
ERG Guide No. 128

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Put on appropriate personal protective equipment (see section 8).

6.2. Environmental precautions
Do not allow spills to enter drains or waterways.
Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up
Spill Clean up: Eliminate all ignition sources. Evacuate personnel to safe areas. Ventilate the area. Floor may be slippery, use caution. Soak up with inert absorbent material (Paper towel, sand, silica gel, sawdust). Avoid breathing vapor.

Normal disposal: Waste Classification: Methyl Ethyl Ketone (78-93-3), 40 CFR 261.20-.24. For discard, this is classified as a hazardous waste with the characteristic of ignitability and toxicity. RCRA #D001. Reportable quantity is 100 lbs.(40 CFR 302) Incinerate liquid and contaminated solids in accordance with local, state and federal regulations. (See 40 CFR 268). For small quantity spills, allow solvent in paper towel to evaporate in well ventilated areas or outdoors (preferred).

Contaminated Packaging: Empty containers should be taken for local recycling or waste disposal. Dumping of product in ground or sewer may be illegal.
Eliminate ignition sources. Soak up with noncombustible absorbent material. Remove absorbent material for proper disposal.

7. Handling and storage

7.1. Precautions for safe handling
Ground all containers when transferring material. Periodically clean neck of bottle of resinous build up (clean inside of cap) to maintain proper seal. Do not smoke when using. Add thinner as needed, to keep proper thinness of material. See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities
Handle containers carefully to prevent damage and spillage. Incompatible materials: Strong oxidizing agents, strong acids and strong bases. Limit storage of flammable material to approved areas. Store bottles away from heat. Keep away from open flame of bunsen burner or furnace. Keep containers tightly sealed. Avoid storing near acids, chlorinated solvents. Storage temp: 60 C/140 F min. Containers may be hazardous when empty. Emptied containers contain residue. See section 2 for further details. - [Storage]:

7.3. Specific end use(s)
No data available.

8. Exposure controls and personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Ingredient</th>
<th>Source</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000078-93-3</td>
<td>Butanone</td>
<td>OSHA</td>
<td>TWA 200 ppm (590 mg/m3)</td>
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<td></td>
<td></td>
<td>ACGIH</td>
<td>TWA: 50 ppm STEL: 100 ppm</td>
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<td></td>
<td>NIOSH</td>
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<td>OSHA</td>
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<td>ACGIH</td>
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<td>Supplier</td>
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<td></td>
<td>NIOSH</td>
<td>TWA 3.5 mg/m3 Ca TWA 0.1 mg PAHs/m3 [in presence of polycyclic aromatic hydrocarbons (PAHs)]</td>
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</tbody>
</table>

Page 6 of 13
Safety Data Sheet
SMART SPACER Die Spacer

SDS Revision Date: 05/18/2015

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Ingredient</th>
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<th>ACGIH</th>
<th>NIOSH</th>
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</table>

Carcinogen Data

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<td>Butanone</td>
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</table>
8.2. Exposure controls

**Respiratory**
If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.

**Eyes**
Chemical-resistant goggles

**Skin**
Chemical-resistant gloves. (PVC or PE etc.)

**Engineering Controls**
Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

**Other Work Practices**
Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

---

**9. Physical and chemical properties**

**Appearance**
White Liquid

**Odor**
Acetate

**Odor threshold**
Not determined

**pH**
Not Measured

**Melting point / freezing point**
-86 C/-123 F

**Initial boiling point and boiling range**
80 C/176 F

**Flash Point**
-4 C/25 F (SFCC)

**Evaporation rate (Ether = 1)**
> 1

**Flammability (solid, gas)**
Not Applicable

**Upper/lower flammability or explosive limits**
Lower Explosive Limit: 1 est.
Upper Explosive Limit: 12 est.

**Vapor pressure (Pa)**
20 C/68 F (at 70 mmHg)

**Vapor Density**
> 1 (Air = 1)

**Specific Gravity**
Approx. 1

**Solubility in Water**
Slight

**Partition coefficient n-octanol/water (Log Kow)**
Not Measured

**Auto-ignition temperature**
516 C/961 F

**Decomposition temperature**
Not Measured

**Viscosity (cSt)**
Not Measured

**Stable**
Vehicle and solvent - somewhat; Pigment - insoluble
10. Stability and reactivity

10.1. Reactivity
Hazardous Polymerization will not occur.

10.2. Chemical stability
Stable under normal circumstances.

10.3. Possibility of hazardous reactions
No data available.

10.4. Conditions to avoid
Avoid contact with ignition sources and keep containers away from incompatibles. Keep containers closed when not in use.

10.5. Incompatible materials
Strong oxidizing agents, strong acids and strong bases.

10.6. Hazardous decomposition products
Oxides of Carbon

11. Toxicological information

Acute toxicity

Exposure to solvent vapor concentrations from the component solvents in excess of the stated occupational exposure limits may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms include headache, nausea, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in dryness, irritation and possible non-allergic contact dermatitis. Solvents may also be absorbed through the skin. Splashes of liquid in the eyes may cause irritation and soreness with possible reversible damage.

Based upon animal testing, the C9 aromatic hydrocarbon components (trimethylbenzenes and ethylmethylbenzenes) are presumed to cause fetal toxicity and/or decreased fetal and newborn weights if overexposure occurs during the early gestation period.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Oral LD50, mg/kg</th>
<th>Skin LD50, mg/kg</th>
<th>Inhalation Vapor LC50, mg/L/4hr</th>
<th>Inhalation Dust/Mist LC50, mg/L/4hr</th>
<th>Inhalation Gas LC50, ppm</th>
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<tr>
<td>Butanone - (78-93-3)</td>
<td>2,737.00, Rat - Category: 5</td>
<td>6,480.00, Rabbit - Category: NA</td>
<td>32.00, Mouse - Category: NA</td>
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Safety Data Sheet
SMART SPACER Die Spacer

SDS Revision Date: 05/18/2015

<table>
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<th>Chemical</th>
<th>Category</th>
<th>Hazard Description</th>
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<td>Solvent naphtha (petroleum), light aromatic - (64742-95-6)</td>
<td>6,800.00, Rat - Category: NA</td>
<td>3,400.00, Rabbit - Category: 5</td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), light aliphatic - (64742-89-8)</td>
<td>&gt; 5,000.00, Mouse - Category: NA</td>
<td>3,000.00, Rabbit - Category: 5</td>
</tr>
<tr>
<td>Carbon black - (1333-86-4)</td>
<td>8,000.00, Rat - Category: NA</td>
<td>No data available</td>
</tr>
<tr>
<td>Benzene, trimethyl - (25551-13-7)</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>1,2,4-trimethylbenzene - (95-63-6)</td>
<td>3,400.00, Rat - Category: 5</td>
<td>3,160.00, Rabbit - Category: 5</td>
</tr>
</tbody>
</table>

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

12. Ecological information

12.1. Toxicity
The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and GHS and is not classified as dangerous for the environment, but contains substance(s) dangerous for the environment. See section 3 for details

Aquatic Ecotoxicity
<table>
<thead>
<tr>
<th>Ingredient</th>
<th>96 hr LC50 fish, mg/l</th>
<th>48 hr EC50 crustacea, mg/l</th>
<th>ErC50 algae, mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butanone - (78-93-3)</td>
<td>400.00, Cyprinodon variegatus</td>
<td>520.00, Daphnia magna</td>
<td>500.00 (96 hr), Skeletonema costatum</td>
</tr>
<tr>
<td>Titanium dioxide - (13463-67-7)</td>
<td>1,000.00, Fundulus heteroclitus</td>
<td>5.50, Daphnia magna</td>
<td>5.83 (72 hr), Pseudokirchneriella subcapitata</td>
</tr>
<tr>
<td>Propylene glycol monomethyl ether acetate - (108-65-6)</td>
<td>100.00, Salmo gairdneri</td>
<td>500.00, Daphnia magna</td>
<td>Not Available</td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), light aromatic - (64742-95-6)</td>
<td>9.22, Oncorhynchus mykiss</td>
<td>6.14, Daphnia magna</td>
<td>19.00 (72 hr), Selenastrum capricornutum</td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), light aliphatic - (64742-89-8)</td>
<td>Not Available</td>
<td>Not Available</td>
<td>4,700.00 (72 hr), Selenastrum capricornutum</td>
</tr>
<tr>
<td>Carbon black - (1333-86-4)</td>
<td>1,000.00, Danio rerio</td>
<td>5,600.00, Daphnia magna</td>
<td>10,000.00 (72 hr), Scenedesmus subspicatus</td>
</tr>
<tr>
<td>Benzene, trimethyl- - (25551-13-7)</td>
<td>Not Available</td>
<td>5.60, Palaemonetes pugio</td>
<td>Not Available</td>
</tr>
<tr>
<td>1,2,4-trimethylbenzene - (95-63-6)</td>
<td>7.72, Pimephales promelas</td>
<td>3.60, Daphnia magna</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
There is no data available on the preparation itself.

12.3. Bioaccumulative potential
Not Measured

12.4. Mobility in soil
No data available.

12.5. Results of PBT and vPvB assessment
This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects
No data available.

13. Disposal considerations

13.1. Waste treatment methods
Observe all federal, state and local regulations when disposing of this substance.

14. Transport information

14.1. UN number
UN1993

14.2. UN proper shipping name
UN1993, Flammable liquids, n.o.s., (Methyl Ethyl Ketone), 3, II

14.3. Transport hazard class(es)
DOT Hazard Class: 3

DOT (Domestic Surface Transportation)
IMO / IMDG (Ocean Transportation)
ICAO/IATA
UN1993
Flammable liquids, n.o.s., (Methyl Ethyl Ketone)
UN1993
Flammable liquids, n.o.s., (Methyl Ethyl Ketone)
UN1993
Flammable liquids, n.o.s., (Methyl Ethyl Ketone)
Air Class: 3

Not Applicable

Page 11 of 13
14.4. Packing group

14.5. Environmental hazards
IMDG Marine Pollutant: No

14.6. Special precautions for user
No further information

15. Regulatory information

Regulatory Overview
The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

Toxic Substance Control Act (TSCA)
All components of this material are either listed or exempt from listing on the TSCA Inventory.

WHMIS Classification
B2 D2B

US EPA Tier II Hazards
Fire: Yes
Sudden Release of Pressure: No
Reactive: No
Immediate (Acute): Yes
Delayed (Chronic): No

EPCRA 311/312 Chemicals and RQs (lbs):
Butanone (5,000.00)

EPCRA 302 Extremely Hazardous:
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 313 Toxic Chemicals:
1,2,4-trimethylbenzene
Manganese oxide (Mn2O3)

Proposition 65 - Carcinogens (>0.0%):
Benzene, (1-methylethyl)-
Carbon black
TALC (Mg3H2(SiO3)4)
Titanium dioxide

Proposition 65 - Developmental Toxins (>0.0%):
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Female Repro Toxins (>0.0%):
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Male Repro Toxins (>0.0%):
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

New Jersey RTK Substances (>1%):
1,2,4-trimethylbenzene
Butanone
Carbon black
Titanium dioxide
Benzene, trimethyl-

Pennsylvania RTK Substances (>1%):
1,2,4-trimethylbenzene
Butanone
Carbon black
Titanium dioxide
Benzene, trimethyl-

### 16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H225 Highly flammable liquid and vapor.
H226 Flammable liquid and vapor.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness and dizziness.
H411 Toxic to aquatic life with long lasting effects.

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

End of Document