1. Identification

Product identifier: ZONATAC™ NG98

Other means of identification

SDS number: 7166

Product Code: 200000000325

Recommended use: Industrial uses: Uses of substances as such or in preparations at industrial sites. Formulation [mixing] of preparations and/or re-packaging (excluding alloys).

Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company: Arizona Chemical Company LLC

Address: Building 100

4600 Touchton Road East, Suite 1200

City/State: Jacksonville, FL

Zip: 32246

Country: USA

Phone Number: 904-928-8700

Alternate Phone Number: 800-526-5294

Fax Number: 904-928-8780

Emergency-US: CHEMTREC 800-424-9300

2. Hazard(s) identification

Physical hazards: Not classified.

Health hazards: Sensitization, skin

OSHA defined hazards: Combustible dust

Label elements

Signal word: Warning

Hazard statement: May cause an allergic skin reaction. May form combustible dust concentrations in air.

Precautionary statement:


Response: 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.

Storage: Store away from incompatible materials.

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

Hazard(s) not otherwise classified (HNOC): None known.

Supplemental information: None.
3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Styrenated Terpene Resin</td>
<td>Proprietary</td>
<td>95 - 100</td>
<td></td>
</tr>
<tr>
<td>Other components below reportable levels</td>
<td></td>
<td></td>
<td>0 - 5</td>
</tr>
</tbody>
</table>

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation: Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact: Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.

Eye contact: Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.

Ingestion: Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed: Rash. Dusts may irritate the respiratory tract, skin and eyes. May cause an allergic skin reaction. Dermatitis.

Indication of immediate medical attention and special treatment needed: Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information: Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media: Water fog. Water spray, dry chemical, carbon dioxide. Foam. Apply extinguishing media carefully to avoid creating airborne dust.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: Static charges generated by emptying package in or near flammable vapor may cause flash fire. High concentrations of dust may form explosive mixture with air. Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

Special protective equipment and precautions for firefighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions: In case of fire and/or explosion do not breathe fumes. Wear suitable protective equipment. Move containers from fire area if you can do so without risk.

Specific methods: Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards: May form combustible dust concentrations in air.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Use only non-sparking tools. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up: Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.

Environmental precautions: Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Avoid discharge into drains, water courses or onto the ground.
7. Handling and storage

Precautions for safe handling

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Explosion-proof general and local exhaust ventilation. Minimize dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices. Follow all SDS/label precautions even after container is emptied because they may retain product residues.

Conditions for safe storage, including any incompatibilities

Keep away from heat, sparks and open flame. Keep containers tightly closed in a dry, cool and well-ventilated place. Store at ambient temperature and atmospheric pressure. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

<table>
<thead>
<tr>
<th>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust</td>
<td>PEL</td>
<td>5 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>US. OSHA Table Z-3 (29 CFR 1910.1000)</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust</td>
<td>TWA</td>
<td>5 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>US. ACGIH Threshold Limit Values</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust</td>
<td>TWA</td>
<td>3 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 mg/m³</td>
</tr>
</tbody>
</table>

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection

Face shield is recommended. Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace. Eye wash fountain and emergency showers are recommended.

9. Physical and chemical properties

Appearance

Solid.

Physical state

Solid.

Form

Pastilles or Pellets.

Color

Light yellow

Odor

Mild.

Odor threshold

Not available.
<table>
<thead>
<tr>
<th><strong>pH</strong></th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Melting point/freezing point</strong></td>
<td>206.6 °F (97 °C)</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range</strong></td>
<td>&gt; 750.2 °F (&gt; 399 °C)</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>420.8 °F (216.0 °C) Setaflash Closed Cup</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>0 n-BuAc=1</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Upper/lower flammability or explosive limits</strong></td>
<td></td>
</tr>
<tr>
<td>Flammability limit - lower (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability limit - upper (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Explosive limit - lower (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Explosive limit - upper (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>&lt; 0.001 mm Hg at 25°C</td>
</tr>
<tr>
<td><strong>Vapor density</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>&gt; 1 at 25°C</td>
</tr>
<tr>
<td><strong>Solubility(ies)</strong></td>
<td></td>
</tr>
<tr>
<td>Solubility (water)</td>
<td>&lt; 0.1 % at 25°C</td>
</tr>
<tr>
<td><strong>Partition coefficient (n-octanol/water)</strong></td>
<td>&gt; 6.5</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>726.8 °F (386 °C)</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>22150 - 24350 mPa·s Brookfield at 121°C</td>
</tr>
<tr>
<td><strong>Other information</strong></td>
<td></td>
</tr>
<tr>
<td>Bulk density</td>
<td>&gt; 1000 kg/m3 at 20°C</td>
</tr>
<tr>
<td>Chemical family</td>
<td>Terpene Resin</td>
</tr>
<tr>
<td>Density</td>
<td>1.02 g/cm³ estimated</td>
</tr>
<tr>
<td>Percent volatile</td>
<td>1.5 - 2.5 % EPA Method 24 estimated</td>
</tr>
<tr>
<td>VOC (Weight %)</td>
<td>1.5 - 2.5 %</td>
</tr>
</tbody>
</table>

### 10. Stability and reactivity

**Reactivity**
The product is stable and non-reactive under normal conditions of use, storage and transport.

**Chemical stability**
Material is stable under normal conditions.

**Possibility of hazardous reactions**
No dangerous reaction known under conditions of normal use.

**Conditions to avoid**
Strong oxidizing agents. Keep away from heat, sparks and open flame. Contact with incompatible materials. Minimize dust generation and accumulation.

**Incompatible materials**
Strong oxidizing agents.

**Hazardous decomposition products**
Upon decomposition this product emits acrid dense smoke with carbon dioxide, carbon monoxide, water and other products of combustion.

### 11. Toxicological information

**Information on likely routes of exposure**

<table>
<thead>
<tr>
<th><strong>Inhalation</strong></th>
<th>Dust may irritate respiratory system.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Skin contact</strong></td>
<td>May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>Styrenated Terpene Resin</td>
<td>50 % Local Lymph Node Assay - Lowest Concentration Producing Reaction, SI=5.3; May cause sensitization by skin contact. Result: Positive Species: Mouse Organ: Skin Notes: OECD 429</td>
</tr>
<tr>
<td><strong>Eye contact</strong></td>
<td>Direct contact with eyes may cause temporary irritation.</td>
</tr>
</tbody>
</table>

Material name: ZONATAC™ NG98
Version #: 1.1 Revision date: 03-20-2015
Print date: 03-20-2015
**Eye contact**

<table>
<thead>
<tr>
<th>Styrenated Terpene Resin</th>
<th>Irritation Corrosion - Eye, May cause eye irritation.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Result: Positive</td>
</tr>
<tr>
<td></td>
<td>Species: New Zealand white rabbit</td>
</tr>
<tr>
<td></td>
<td>Organ: Eye</td>
</tr>
<tr>
<td></td>
<td>Observation Period: 72 hr</td>
</tr>
<tr>
<td></td>
<td>Severity: Mild</td>
</tr>
<tr>
<td></td>
<td>Notes: OECD 405</td>
</tr>
</tbody>
</table>

**Ingestion**

Expected to be a low ingestion hazard.

**Symptoms related to the physical, chemical and toxicological characteristics**

Rash. Dusts may irritate the respiratory tract, skin and eyes. May cause an allergic skin reaction. Dermatitis.

**Information on toxicological effects**

**Acute toxicity**

May cause an allergic skin reaction.

**Skin corrosion/irritation**

Prolonged skin contact may cause temporary irritation.

**Corrosivity**

<table>
<thead>
<tr>
<th>Styrenated Terpene Resin</th>
<th>Acute Dermal Irritation/Corrosion, Mild skin irritation.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Result: Positive</td>
</tr>
<tr>
<td></td>
<td>Species: New Zealand white rabbit</td>
</tr>
<tr>
<td></td>
<td>Organ: Skin</td>
</tr>
<tr>
<td></td>
<td>Test Duration: 4 hr</td>
</tr>
<tr>
<td></td>
<td>Observation Period: 72 hr</td>
</tr>
<tr>
<td></td>
<td>Severity: Mild</td>
</tr>
<tr>
<td></td>
<td>Irritation Corrosion - Skin, No skin irritation.</td>
</tr>
<tr>
<td></td>
<td>Result: Negative</td>
</tr>
<tr>
<td></td>
<td>Species: New Zealand white rabbit</td>
</tr>
<tr>
<td></td>
<td>Organ: Skin</td>
</tr>
<tr>
<td></td>
<td>Test Duration: 24 hr</td>
</tr>
<tr>
<td></td>
<td>Observation Period: 72 hr</td>
</tr>
</tbody>
</table>

**Serious eye damage/eye irritation**

Direct contact with eyes may cause temporary irritation.

<table>
<thead>
<tr>
<th>Styrenated Terpene Resin</th>
<th>Irritation Corrosion - Eye, May cause eye irritation.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Result: Positive</td>
</tr>
<tr>
<td></td>
<td>Species: New Zealand white rabbit</td>
</tr>
<tr>
<td></td>
<td>Organ: Eye</td>
</tr>
<tr>
<td></td>
<td>Observation Period: 72 hr</td>
</tr>
<tr>
<td></td>
<td>Severity: Mild</td>
</tr>
<tr>
<td></td>
<td>Notes: OECD 405</td>
</tr>
</tbody>
</table>

**Respiratory or skin sensitization**

**Respiratory sensitization**

Not available.

**Skin sensitization**

May cause an allergic skin reaction.

<table>
<thead>
<tr>
<th>Styrenated Terpene Resin</th>
<th>50 % Local Lymph Node Assay - Lowest Concentration Producing Reaction, SI=5.3; May cause sensitization by skin contact.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Result: Positive</td>
</tr>
<tr>
<td></td>
<td>Species: Mouse</td>
</tr>
<tr>
<td></td>
<td>Organ: Skin</td>
</tr>
<tr>
<td></td>
<td>Notes: OECD 429</td>
</tr>
</tbody>
</table>

**Germ cell mutagenicity**

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

<table>
<thead>
<tr>
<th>Styrenated Terpene Resin</th>
<th>Germ Cell Mutagenicity: Ames, No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Result: Negative</td>
</tr>
<tr>
<td></td>
<td>Species: Salmonella typhimurium</td>
</tr>
<tr>
<td></td>
<td>Notes: OECD 471</td>
</tr>
</tbody>
</table>
**Mutagenicity**
Styrenated Terpene Resin

Germ Cell Mutagenicity: Chromosome Abberation, This material is considered to be non-clastogenic to human lymphocytes in vitro.
Result: Negative
Species: Human
Notes: OECD 473

**Carcinogenicity**

This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.


Not listed.

**Reproductive toxicity**

This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure**

Not classified.

**Specific target organ toxicity - repeated exposure**

Not classified.

**Aspiration hazard**

Not available.

**Further information**

Styrenated Terpene Resin

Cytotoxicity - in Vitro, Not cytotoxic
Result: Negative
Species: Mouse
Organ: Fibroblasts cells
Observation Period: 48 hr
Notes: ISO 10993-5

**12. Ecological information**

**Ecotoxicity**

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Styrenated Terpene Resin</td>
<td>EL50</td>
<td>Green algae</td>
</tr>
<tr>
<td>Styrenated Terpene Resin</td>
<td>NOEL</td>
<td>Green algae</td>
</tr>
<tr>
<td>Aquatic</td>
<td>Crustacea</td>
<td>EL50</td>
</tr>
<tr>
<td>Aquatic</td>
<td>Fish</td>
<td>LL50</td>
</tr>
<tr>
<td>Aquatic</td>
<td>Fish</td>
<td>NOEL</td>
</tr>
</tbody>
</table>

* Estimates for product may be based on additional component data not shown.

**Persistence and degradability**

Not readily degradable.

**Biodegradability**

Percent degradation (Aerobic biodegradation)

Styrenated Terpene Resin

39 % CO2 Evolution Test
Result: Not readily biodegradable
Species: Activated sewage sludge

**Bioaccumulative potential**

Partition coefficient n-octanol / water (log Kow)

ZONATAC™ NG98

> 6.5

**Mobility in soil**

No data available.

**Other adverse effects**

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

**13. Disposal considerations**

**Disposal instructions**

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations**

Dispose in accordance with all applicable regulations.

**Hazardous waste code**

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products
Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information
DOT
Not regulated as dangerous goods.
IATA
Not regulated as dangerous goods.
IMDG
Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable.

15. Regulatory information
US federal regulations
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.
CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.
SARA 304 Emergency release notification
Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)
Hazard categories
Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance
Not listed.
SARA 311/312 Hazardous chemical
Yes
SARA 313 (TRI reporting)
Not regulated.

Other federal regulations
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.
Safe Drinking Water Act (SDWA)
Not regulated.

NFPA ratings
Health: 2
Flammability: 1
Instability: 0
US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)
Not listed.

US. Massachusetts RTK - Substance List
Not regulated.

US. New Jersey Worker and Community Right-to-Know Act
Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law
Not listed.

US. Rhode Island RTK
Not regulated.

16. Other information, including date of preparation or last revision

<table>
<thead>
<tr>
<th>Issue date</th>
<th>11-12-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision date</td>
<td>03-20-2015</td>
</tr>
<tr>
<td>Version #</td>
<td>1.1</td>
</tr>
</tbody>
</table>

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

Disclaimer
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