1 – Product and company identification

Product name          TEMPRITE* 3206 GRAY 245 PLT
Product number        32062454                          Effective date   04/28/2004
Company USA address   Noveon, Inc.                             Company Europe address       Noveon Europe B.V.B.A.
                        9911 Brecksville Road                             Chaussée de Wavre 1945
                        Cleveland, Ohio 44141-3247                     1160 Brussels
                        United States                                   Belgium
Telephone             (216) 447-5000                          Telephone         32-2-678-1911
                        (800) 424-9300                          Chemtrec (Int’l)              1-703-527-3887
Company Hong Kong address Noveon Asia Pacific Limited
                        1107-1110 Shui On Centre
                        6-8 Harbour Road
                        Wan Chai, Hong Kong
                        852-2508-1021

2 - Composition / information on ingredients

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Name according to EEC</th>
<th>%</th>
<th>Symbols</th>
<th>R-Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>0068648-82-8</td>
<td>Chlorinated polyvinyl chloride (CPVC)</td>
<td>83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proprietary</td>
<td>Nonhazardous ingredients</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0007440-31-5</td>
<td>Organotin</td>
<td>3.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

Notes: All additives are physically bound (encapsulated) in the compound. This product is not expected to create any hazard when it is used, handled, and processed.

3 - Hazards identification

Acute health effects
Molten product causes skin burns. At elevated temperatures (e.g., at melt processing temperature or combustion temperature), this product may emit fumes and vapors that cause irritation (possibly severe) to the respiratory tract, eyes and/or skin. At ambient temperature, there are no known or expected health effects.

Chronic health effects
None known.

Signs/symptoms of exposure
Irritation
4 - First aid measures

If irritation or other symptoms (as noted above) occur or persist from any route of exposure, remove the affected individual from the area: see a physician/get medical attention.

**Eye contact**
Treat as any foreign particulate matter.

**Skin contact**
Wash the affected area thoroughly with plenty of water and soap. If molten polymer contacts the skin, cool the skin rapidly with water or ice. See a physician for removal of any adhering material and for treatment of the burn.

**Inhalation**
If any processing vapors, decomposition products or particulates are inhaled, remove individual(s) to fresh air. Provide protection before allowing reentry.

**Ingestion**
No ingestion effects known.

5 - Fire fighting measures

**Fire and explosive properties**
This product is not known to present any fire hazard.

**Extinguishing media**
Use water spray, dry chemical, or foam. Carbon dioxide may be ineffective on larger fires due to a lack of cooling capacity which may result in reignition.

**Fire fighting instructions**
Wear self-contained breathing apparatus (SCBA) equipped with a full facepiece and operated in a pressure-demand mode (or other positive pressure mode) and protective clothing.

**Unusual fire/explosion hazards**
Irritating or toxic substances will be emitted upon burning, combustion or decomposition. Run off water from firefighting may have corrosive effects. Protect product from flames of any kind; maintain proper clearance when using heat devices, etc. Product may burn if an ignition source is present.

6 - Accidental release measures

**Containment techniques**
No Information

**Clean-up techniques**
Sweep up carefully and place into container for reuse or disposal. Do not sweep or flush product into sewers or waterways.

**Evacuation instructions**
Not Applicable
7 - Handling and storage

Handling

Electrostatic Buildup:
Electrostatic buildup may occur when pouring or transferring this product from its container. The spark produced may be sufficient to ignite vapors of flammable liquids. Always transfer product by means which avoid static buildup. Avoid pouring product directly from its container into combustible or flammable solvent.

Post Thermal Processing Activities:
Post thermal processing activities necessary to produce molded articles (such as cutting, sanding, sawing, grinding, drilling, or regrinding) may create dust or "fines". Powders, dust, and/or fines may pose a dust explosion hazard.

Processing Fume Condensates:
Fume condensates may include hazardous contaminants from additives. Condensate may be combustible and should be periodically removed from exhaust hoods, ductwork, and other surfaces. Impervious gloves should be worn during cleanup operations to prevent skin contact.

Melt Processing and Pre/Post Processing:
Conduct any operations emitting fumes or vapors (including clean up) under well-ventilated conditions. Avoid breathing process vapors. Do not hold product for extended periods of time at elevated temperatures or allow thick masses of hot polymer to accumulate because they can decompose emitting hazardous gases. Do not taste, swallow, or chew products. Wash thoroughly after processing. Do not store or consume food in processing areas. Do not use processing equipment to heat food. Do not allow thick masses to accumulate on the floor or elsewhere. The mass will begin to thermally decompose and swell due to internal gassing of the molten product. Gassing may cause the mass to explode, especially if its surface is hardened with water. Molten waste should be collected as strands or flattened to 2 inches (5 cm) or less, and quenched in a drum of cold water. Decomposing product must be removed to a well-ventilated area, preferably outdoors.

Recommended purge compounds are general purpose acrylic or acrylonitrile-butadiene-styrene (ABS) copolymer. Do not use flame-retarded or halogen-containing grades. In cases such as power loss, dismantle die assembly immediately.

Storage

SPRINKLERED WAREHOUSE AREAS are recommended. This product by itself typically will not support combustion. However, other combustible contents can provide sufficient fuel and heat to cause product to burn. Avoid excessive heat. Do not store near flammable agents.

8 - Exposure controls / personal protection

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>MAK Value</th>
<th>MEL / OES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorinated polyvinyl chloride (CPVC)</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>Nonhazardous ingredients</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>Organotin</td>
<td>.10 mg/m3 (skin)</td>
<td>.10 mg/m3 (skin)</td>
</tr>
</tbody>
</table>

Notes: TRACE IMPURITIES: Less than 0.01% (<100 ppm) of residual chloroform (CAS 67-66-3) and less than 0.005% (< 50 ppm) of residual carbon tetrachloride (CAS 56-23-5) may remain bound in the polymer. ACGIH identifies each of these chemicals as cancer suspect agents (A2). The OSHA Permissible Exposure Limit (8-hour time-weighted average) to these substances is 2 ppm for chloroform and 5 ppm for carbon tetrachloride. The presence of these residual chemicals in the polymer is not expected to create a hazard. In a well-ventilated workplace, the potential concentration of chloroform or carbon tetrachloride will be well below established threshold limit values. Monitoring of Noveon production facilities show chloroform levels to be below 0.00003% (<0.3 ppm) and carbon tetrachloride levels to be below 0.00005% (<0.5 ppm) in the workplace air. Noveon production workers are not required to wear special respiratory protection. The above exposure limits for organotin refer to tin.

Engineering controls
Always provide effective general and, when necessary, local exhaust ventilation to draw fumes, vapors and/or dust away from workers to prevent routine inhalation. Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the MSDS. Ventilation guidelines/techniques may be found in publications such as Industrial Ventilation: American Conference of Governmental Industrial
Eye/face protection
Wear eye protection.

Skin protection
Protective gloves required to handle hot material during processing.

Respiratory protection
Respiratory protection is not needed with proper ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Wear suitable NIOSH/MSHA approved air-supplied breathing apparatus or airline respirator, if working under abnormal conditions of inadequate ventilation and/or overheated product (such as during equipment malfunction or stagnated product leading to decomposition). Wear an organic vapor respirator approved by NIOSH/MSHA whenever exposure to fumes or vapors exceed the limits listed in this MSDS. Cutting operations may create small particles from this product. If inhalation of particulates cannot be avoided, wear a dust respirator.

General protection
Safety glasses. Protective gloves for handling hot material during processing.

9 - Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>Pellet</td>
</tr>
<tr>
<td>Appearance</td>
<td>Gray</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not Available</td>
</tr>
<tr>
<td>Melting point</td>
<td>See note below.</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>Not Applicable</td>
</tr>
<tr>
<td><strong>% Volatile by weight</strong></td>
<td>Not Applicable</td>
</tr>
<tr>
<td><strong>Specific gravity</strong></td>
<td>1.48 - 1.52</td>
</tr>
<tr>
<td><strong>VOC</strong></td>
<td>Not Applicable</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>~896.8°F (480.0°C)</td>
</tr>
<tr>
<td><strong>Boiling Point °F</strong></td>
<td>Not Applicable</td>
</tr>
<tr>
<td><strong>Boiling Point °C</strong></td>
<td>Not Applicable</td>
</tr>
<tr>
<td><strong>Autoignition temperature</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Explosive range</strong></td>
<td>LEL Not Applicable</td>
</tr>
<tr>
<td><strong>UEL</strong></td>
<td>UEL Not Applicable</td>
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<tr>
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<td><strong>Melting point</strong></td>
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Notes: Note: Refer to Processing Guide and/or contact your local Technical Service Representative for melt processing temperature range. For most products, melt processing is in the range of 390 - 440 °F (177 - 225 °C). However, some products may process at different temperatures.

10 - Stability and reactivity

Conditions to avoid
Overheating.

Incompatibility with other materials
Hydrogen chloride, a combustion product of chlorinated hydrocarbons, has a corrosive effect on many metals. Affected surfaces should be washed with a detergent-based water solution to remove deposits. MELT PROCESSING INCOMPATIBILITY: Avoid contact with acetal, acetal polymers, acetal copolymers and amine
containing materials. If processed together, these materials may be mutually destructive and degrade rapidly. Prevent cross contamination of feed stocks. Thoroughly purge and mechanically clean processing equipment to prevent these materials from coming in contact with each other. Refer to technical service reports for specific equipment and procedural recommendation.

**Hazardous decomposition products**

Volatiles may be evolved during overheating, combustion, or decomposition. These potential decomposition gases have not been fully determined. Decomposition products may include carbon monoxide, carbon dioxide, hydrogen chloride, organotin compounds, and hydrocarbons.

**Additional reactivity / stability information**

Trace amounts of organic tin compounds (less than 0.1 mg/m3) may be present. NOTE: Hydrogen chloride is detectable by its sharp pungent odor in concentrations as low as 1-5 ppm. Low concentrations (below 50 ppm) are not harmful in short-term exposures but do provide excellent warning properties by causing coughing or irritation. Because the protective response is so strong, humans rarely submit to damaging concentrations -- instead, there is an unmistakable urge to leave the area. Repeated or prolonged exposure to high concentrations can cause eye and respiratory damage.

**Thermal processing emissions**

Volatiles from melt processing are expected to be the primary hazard in an occupational setting. Well-ventilated conditions are necessary to control exposure to fumes and vapors.

### 11 - Toxicological information

Caution must be exercised through the prudent use of protective equipment and handling procedures to minimize exposure.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LC50 Inhalation</th>
<th>Species</th>
<th>LD50 Oral</th>
<th>Species</th>
<th>LD50 Skin</th>
<th>Species</th>
</tr>
</thead>
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<tr>
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<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>Nonhazardous ingredients</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>Organotin</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
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</tr>
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</table>

No toxicity studies have been conducted on this product. As with all chemicals for which test data are limited or do not exist, caution must be exercised through the prudent use of protective equipment and handling procedures to minimize exposure.

### 12 - Ecological information

No ecological testing has been conducted on this product.

### 13 - Disposal information

Incinerate or landfill waste in a properly permitted facility in accordance with federal, state and local regulations.

### 14 - Transportation information
Name of Material: Not regulated

15 - Regulatory information

EU Classification:

This material is not subject to classification according to European Union Directives 67/548 and its amendments including 92/32/EEC, 1999/45/EC, and 2001/58/EC.

EU R phrases:
Not Applicable

EU S phrases:
Not Applicable

(EINECS / ELINCS):
Compliant

Water hazard classification (Germany):
Not assessed

U.S. Toxic Substances Control Act (TSCA):
All components of this product are either listed on the U.S. Toxic Substances Control Act (TSCA) inventory of chemicals or are otherwise compliant with TSCA regulations.

Canadian Domestic Substance List (DSL):
CANADIAN DSL: One or more components are listed on the NDSL.

16 - Other Information

Product description: Thermoplastic compound for plastics molding

Legend:
Users Responsibility/Disclaimer of Liability
The information set forth herein is based on our current knowledge, and is intended to describe the product solely with respect to health, safety and the environment. As such, it must not be interpreted as a guarantee of any specific property of the product. As a result, the customer shall be solely responsible for deciding whether said information is suitable and beneficial.

Safety Data Sheet Preparer:
Health, Safety and Environmental Department
Noveon, Inc.
9911 Brecksville Road
Cleveland, Ohio 44141 U.S.A.