CONTEGO® INTERNATIONAL, INC. PROTECT • SHIELD • DEFEND

PRODUCT DATA SHEET

# Contego *High Solids* RFB

**Product Description:** Contego HS RFB is a water-based, single component Intumescent Fire Resistive Material (IFRM) designed to protect a wide range of building materials.

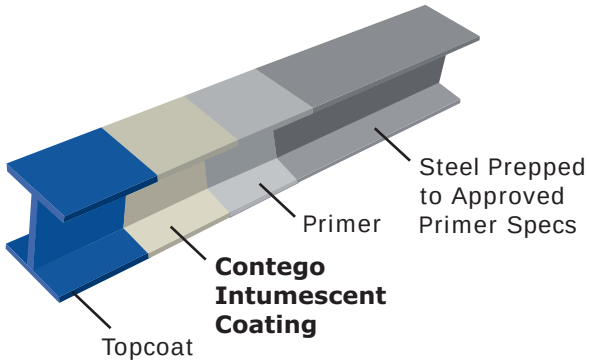
| Substrates Protected | Contego HS RFB |
|---|---|
| Dimensional Lumber | ✓ |
| OSB/Plywood | ✓ |
| Polyurethane Foam | ✓ |
| Gypsum Board-Drywall | ✓ |
| Structural Insulated Panels | ✓ |
| Concrete | ✓ |
| Aluminum | ✓ |
| Structural Steel | ✓ |

### Contego HS RFB Product Advantages:

- Exceptional protection from heat and fire.
- Smooth, thin, architectural grade finish.
- Economical and versatile
- Nontoxic, ZERO VOC
- Field and shop application
- Fast drying and fast curing times.
- The longest shelf life in the industry.

### Primer

- A complete listing of approved primers can be obtained at www.contegointernational.com




### Application Instructions

- Airless Sprayer: 1+ gpm, 3,300 psi
  *Graco Mark V or comparable
- Tip size: .025 minimum
- Hose: 3/8" I.D. - 50' optimal

*Full application instructions available at www.contegointernational.com

### Top Coats

- If desired, a top coat may be applied for decorative purposes for interior applications. For exterior application, a top coat is required.

*Contact Contego for approved exterior top coats

### Technical Data:

| | |
|---|---|
| Net Packaging | 57.5 lbs / 26.0 kg (+/- 1%) |
| Chemical basis | Water-based polymer dispersion |
| Consistency | Sprayable liquid |
| Color | White |
| Surface burning characteristics | Flame Spread 0 |
| Class A (ASTM E-84) | Smoke Development 15 |
| Specific Gravity | 1.35 +/- 0.05 |
| pH Range | 8.5 - 8.8 |
| Weight/Gal | 11.5 +/- 0.3 lbs (5.2 Kgs)* |
| Hazardous Ingredients | N/A |
| Volume Solids | 68.0 - 72.0% |
| Weight Solids | 68.0 - 72.0% |
| Viscosity | 20,000 - 30,000 cPs |
| Flammability | Not Flammable |
| VOC. (less Water) | .07 lbs./gal. |

### Fire Test Performance

Tested for up to 3 hours Fire Resistance Ratings

- ANSI/UL 263
- CAN/ULC-S101
- ASTM E-119
- Certifire B475
- EN 13381-8:2013
- NFPA 286

### UL Listing

- BXUV D603 – Steel Decking
- BXUV Y637 – Wide Flange Columns
- BXUV N644 – Wide Flange Beams

### Intertek Listing

- CII/IF 120-01 - HSS Columns
- CII/IF 120-02 - Wide Flange Columns

### Code Compliances

- IBC - 2021, 2018, 2015
- ICC-ES Certification #5078, 5314
- 2023 Florida Building Code (FBC, FRC)
- 2022 California Building Code (CBC, CRC, CFC)
- 2023 Los Angeles Building Code (LABC, LARC, LAFC)
- City of Los Angeles



MASTIC AND INTUMESCENT COATING
FIRE RESISTANCE CLASSIFICATION
SEE UL FIRE RESISTANCE DIRECTORY
R38255

Approved No. CF 5303

# Contego *High Solids* RFB Specifications

**SECTION 078123 - Intumescent Fireproofing**
The following is an outline of our specification document. The complete specifications for intumescent fire resistive materials are available on website or upon request.

**PART 1 - GENERAL**

1.1 **Scope**
1.1.1 This specification covers labor, materials, equipment, and application necessary for, and incidental to, the complete and proper installation of intumescent fire protection for application to steel structures and supports in accordance with all applicable requirements of contract documents.
1.1.2 This specification shall be supplemented by the applicable requirements of building codes, insurance rating organizations and all other authorities having jurisdiction.
1.2 **Section Includes**
1.2.1 Intumescent fire protection material.
1.2.2 Topcoat protective decorative finish.
1.3 **Related Sections**
SECTION 053100 – STEEL DECKING
SECTION 072100 – THERMAL INSULATION
SECTION 078123 – INTUMESCENT FIREPROOFING
1.4 **References**
1.4.1 Underwriters Laboratories (UL) Fire Resistance Directory.
1.4.2 Test Standards
A. UL 263 (ASTM E119) - Fire Tests of Building Construction and Materials.
B. ASTM E84 - Surface Burning Characteristics of Building Materials. Class A Rating Required; Flame Spread Maximum: 0 Smoke Developed Maximum: 15.
C. ASTM 4017 Results of Volatile Organic Compound
" Content - VOC content: 0.07 lbs/gal 8g/L
C. ASTM D2240 – Durometer Hardness (Shore D). Minimum: 66 Shore D.
D. ASTM D2794 – Direct impact resistance of 40 in-lbs and indirect impact resistance of 4 in-lbs.
E. ASTM D4060 – Abrasion Resistance. Maximum: 0.295g/1000 cycles
F. ASTM D4541 – Bond Strength. Minimum: 631 psi
1.4.3 Steel Structures Painting Council (SSPC) Surface Preparation Standards.
1.4.4 Material manufacturer's current published information including, but not limited to, application guide.
1.4.5 AWCI Technical Manual 12-B "Standard Practice for the Testing and Inspection of Field Applied Thin-Film Intumescent Fire-Resistive Materials; an Annotated Guide", Latest Edition. *Refer to Application Guide
1.5 **System Description**
1.5.1 The intumescent fire protection materials shall be applied at the required thickness to provide the UL /ASTM fire resistive ratings.
1.6 **Submittals**
1.6.1 Manufacturer's Data: Submit manufacturer's specifications, including certification as may be required to show material compliance with contract documents.
1.7 **Quality Assurance**
1.7.1 Manufacturer - Company specializing in manufacturing fire protection products.
1.7.2 The intumescent fire resistive material shall be manufactured under the Follow- Up Service program of UL or ULC and bear the UL and/or ULC label (mark).

**PART 1 - GENERAL Continued**

1.7.3 Applicator - A firm with expertise in the installation of fire resistive or similar materials. This firm shall be recognized or otherwise approved by fire resistive material supplier.
1.7.4 Product - The product shall be approved by the architect and applicable authorities having jurisdiction.
1.8 **Delivery, Storage and Handling**
1.8.1 Deliver materials to the project in manufacturer's unopened packages, fully identified as to trade name, type and other identifying data. Packaged materials shall bear the appropriate labels, seals and UL label (mark) for fire resistive ratings and shall be stored at temperature between 45º F - 100º F (7º C -38º C), in a dry interior location away from direct sunlight. PROTECT FROM FREEZING.
1.9 **Project/Site Conditions**
1.9.1 When the temperature at the job site is less than 50º F (10º C), a minimum substrate and ambient temperature of 50º F (10º C) shall be maintained prior to, during, and a minimum of 72 hours after application. If necessary for job schedule, the General Contractor shall provide enclosures and heat to maintain proper temperatures and humidity levels in the application areas.
1.9.2 In enclosed areas, ventilation must not be less than 4 complete air exchanges per hour until the material is dry.
1.9.3 Relative humidity shall not exceed 85% throughout the total period of application and drying for the intumescent fire resistive material, and must not exceed 85% throughout the application and drying for the protective decorative topcoat.
1.10 **Sequencing and Scheduling**
1.10.1 Applicator shall cooperate in the coordination and scheduling of fire protection work to avoid delays in job progress.
1.10.2 The installation of piping, ducts, conduit or other suspended equipment shall not commence until the application of the thin-film fire resistive material is complete in that area.

**PART 2 - PRODUCTS**

2.1 **Compatible Metal Primer**
2.1.1 Primer shall be approved by manufacturer and applied in full accordance with the primer manufacturer's written instructions.
2.2 **Intumescent Fire Protection System**
2.2.1 The intumescent fire resistive material shall be Contego HS® Intumescent RFB or Contego Original® Intumescent RFB as supplied by Contego International Inc.
2.2.2 Intumescent fire resistive material shall be applied in accordance with drawings and/or specifications, and shall have been tested in accordance with the procedures of UL 263 or ASTM E119 or CAN/ULC-S101. Contego HS® Intumescent RFB or Contego Original® Intumescent RFB

2.3 **Decorative Topcoating**
2.3.1 Topcoat materials shall be as required for color-coding, aesthetics or additional surface protection, and approved by the thin-film fire resistive material manufacturer.

**PART 3 - EXECUTION**

3.1 **Preparation**
3.1.1 All surfaces to receive thin-film fire resistive material shall be clean, dry and free of oil, grease, loose mill scale, dirt, dust or other materials which would impair bond of the thin-film fire resistive material to the surface. Any cleaning of the surfaces to receive fire resistive material shall be the responsibility of the General Contractor or steel erector, as outlined in the structural steel section.
3.1.2 Confirm compatibility of surfaces to receive thin-film fire resistive material. Steel surfaces shall be primed with a compatible primer approved by the thin-film fire resistive material manufacturer.
3.1.3 Provide masking, drop cloths or other suitable coverings to prevent overspray onto surfaces not intended to be coated with intumescent coating.
3.2 **Application**
3.2.1 The thin-film fire resistive material shall be applied at the required dry film thickness per the appropriate design number.
3.3 **Mock Up**
3.3.1 Before proceeding with the work, the applicator shall apply the thin-film fire resistive material to a section witnessed by the architect's or owner's representative. The application shall be subject to their approval and shall be used as a guide for texture and thickness of finished work.
3.4 **Clean Up and Repair**
3.4.1 Upon completion of installation, all excess material, overspray and debris shall be cleared and removed from the job site.
3.4.2 All patching of and repair to thin-film fire resistive material, due to damage by other trades, shall be performed under this section and paid for by the trade responsible for the damage. Patching shall be performed by applicators recognized or otherwise approved by the manufacturer.
3.5 **Inspection and Testing**
3.5.1 In addition to continuous Wet Film Thickness checks performed by applicator during application, the installed intumescent material shall be inspected by a qualified independent testing laboratory for thickness in accordance with the AWCI Technical Manual 12-B "Standard Practice For The Testing and Inspection Of Field Applied Thin-Film Intumescent Fire-Resistive Materials; an Annotated Guide", Second Edition, before application of the topcoat.
3.5.2 The results of the above tests shall be made available to all parties at the completion of each area and approved prior to the application of topcoat.

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Approved
No. CF 5303

CONTEGO®
INTERNATIONAL, INC.
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# CONTEGO HIGH SOLIDS RFB APPLICATION GUIDE

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info@contegointernational.com

# 1. GENERAL DESCRIPTION

Contego High Solids RFB is a water based intumescent coating designed to protect various substrates against the effects of fire. It has been tested to UL 263 / CAN S101 / ASTM E119 standards and is approved for interior conditioned space, interior general purpose, and exterior use. For exterior weatherability, an approved exterior topcoat is required. In exterior environments, the Contego HS RFB, must be protected from the elements, which include rain, snow, and high humidity prior to the application of the approved topcoat.

It is important to adhere to the following application methods for achieving correct thickness, application, and finish of the product being applied.

# 2. MATERIAL STORAGE

## 2.1 STORAGE TEMPERATURE

Before use, Contego HS RFB must be stored in the original unopened pails. The pails must be protected from direct sunlight and maintained at a temperature between 45°F (7°C) and 100°F (40°C) during shipping and storage.

The product must not be stored at or below freezing temperatures. DO NOT ALLOW THE MATERIAL TO FREEZE

## 2.2 SHELF LIFE

When stored properly, Contego HS RFB has a shelf life of 24 months from date of manufacture. See label for expiry date. Do not use expired product.

# 3. WORK SITE CONDITIONS

## 3.1 REQUIRED SERVICES

Prior to application, the applicator should ensure that proper services, safety, and site conditions exist for the application process. These requirements will include some or all the following: power, ventilation, water, scaffold, masking, lighting, waste disposal, as well as serviced spray machines and adequate spares.

### 3.2 APPLICATION TEMPERATURE

Contego HS RFB must only be applied when the ambient and substrate temperature is between 50°F (10°C) and 100°F (40°C). The steel surface must be dry and, for best results, the surface temperature should ideally be 4°F (2°C) above the dew point. A minimum substrate and air temperature of 50°F (10°C) must be maintained during and for at least 72 hours after application. The dew point can be determined with any commercially available dew point meter. If necessary, the contractor shall provide enclosures, air flow and conditioned air to maintain proper temperature and humidity levels in the application areas.

### 3.3 HUMIDITY

The relative humidity can be determined using any commercially available hygrometer. If the relative humidity exceeds 85%, precautions should be taken to prevent condensation from forming on the steel surface during application. As Contego HS RFB dries through the evaporation of water, it can cause the humidity of the surrounding area to rise. Adequate ventilation must be provided and maintained during application and curing process to ensure proper drying. Sufficient air exchange is the most significant factor to achieve good and fast drying.

In line with good painting practice, application should not take place in conditions which are deteriorating, e.g. where the temperature is falling and is likely to go below 10°C (50°F) or where there is a risk of condensation forming on the steel.

Caution: Do not apply Contego HS RFB on wet surfaces or if condensation is present.

# 4. SAFETY

### 4.1 PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Protective clothing
- Suitable eye protection
- Gloves

Additional advice for respiratory protection:

- Ensure adequate ventilation on work site
- Read Safety Data Sheet and Product Instructions For Use Environmental precautions

### 4.2 WASTE

Do not discharge Contego HS RFB into drains, water courses or soil. Consult with regulatory agencies or your corporate personnel for disposal methods that comply with local, state, and federal safety, health, and environmental regulations.

# 5. SURFACE PREPARATION

## 5.1 PRIMER

Contego HS RFB must always be applied over an approved primer system for metal substrates, which has been prepared in accordance with the primer manufacturer's recommendation. The primer must be applied in full compliance with the primer manufacturer's recommendations and must be fully cured.

A complete listing of tested and approved primers can be obtained at www.contegointernational.com. Organic and inorganic zinc silicate primers are not suitable for use with Contego products.

## 5.2 CLEAN SUBSTRATES

Before applying Contego HS RFB, the following conditions must be excluded:

- Unprimed or poorly primed steel
- Unapproved or unknown primer
- Not properly cured primer
- Organic or inorganic zinc silicate primer
- Galvanized steel, unless suitably prepared with a compatible etch primer
- Condensation or frost on the steel surface
- Oil, grease, dirt, dust, or any other contaminant which may inhibit bonding with the primed surface

# 6. EQUIPMENT

For optimized aesthetics, airless spraying is the preferred method of application. For hard-to-reach areas, touch up, or repair purposes Contego HS RFB can also be applied via brush or roller.

## 6.1. AIRLESS SPRAY PUMP

An airless spray pump capable of operating with min. fluid pressure of 3300 psi and volume transport of > 1 gal/min (4 l/min) should be used. Check with pump manufacturer for exact recommendations (Graco Mark V or comparable).

Warning: Contego HS RFB requires that all mesh filters commonly found in many airless sprayers be removed prior to the application. Commonly, there are three: a suction filter, a pre-pump filter and the spray gun filter. If the spray tip uses any 'diffuser bars', these also need to be removed.

If a filter remains in the spray system, this will cause the mesh to filter out some of Contego HS RFB ingredients and cause blockages around the filters.

## 6.2 HOSES

High pressure type hoses, rated to match pump capacity, with minimum inner diameter of 3/8" (10 mm) should be used. A maximum hose length of 150 ft (45 m) should not be exceeded.

Note: A hose whip is acceptable, however could reduce the required pressure.

## 6.3 SPRAY GUN AND TIP

A contractor grade spray gun capable of handling a minimum 3300 psi fluid pressure should be used.

Recommended tip sizes are .025 or above.

## 6.4 BRUSH OR ROLLER APPLICATION

A high-grade latex paint brush or a short pile roller should be used.

## 6.5 MASKING

All areas not receiving coating should be masked, typically with lightweight polyethylene plastic and masking tape.

# 7. APPLICATION

## 7.1 STIRRING/MIXING

Contego HS RFB is supplied ready to use in sealed containers.

Contego HS RFB should be stirred thoroughly with a drill type mixer until homogeneous. 3-5 minutes mix time depending upon product temperature. Excessive stirring should be avoided as this may introduce air into the coating. Manual mixing is not recommended. Do not use drywall paddle mixers as this could cut into plastic pail causing debris in material.

## 7.2 APPLIED WET FILM THICKNESS

An initial application of a minimum film of approx. 12 mils (0,3 mm) is recommended. This allows subsequent coats to be applied at greater thickness.

The recommended maximum wet film thickness per coat at 73°F (23°C) and 50%rh is:

- By spray 35 mils (1,7 mm)
- By brush/roller 25 mils (0,65 mm)

To achieve superior aesthetic finish, a thickness of 30 mils per coat is recommended.

## 7.3 MULTIPLE COATS

Where the specified dry film thickness needs to be built up in two or more applications, use the recommended overcoating windows (see below). Prior to overcoating, ensure the previous coat is dry. For airless spraying, several thinner coats as opposed to one heavy coat allow the installer greater control over thickness and reduce overall drying time.

When multiple coats are applied, the final two coats should be applied at approx. 30 mils (0,8mm) wet film thickness to achieve optimum aesthetics.

## 7.4 DRYING TIME

The drying time is dependent on the wet film thickness, temperature, air movement and relative humidity.

For a coat of 35 mil wet film thickness, the following drying times at various temperatures and at 50% r.h. serve as an orientation:

| 35 mils @ 50%rh | Surface dry | Through dry | Recoating | Top coating |
|---|---|---|---|---|
| 50°F / 10°C | 6h | 18h | 24h | 48h+ |
| 68°F / 20°C | 4.5h | 12h | 5h | 48h |
| 86°F / 30°C | 3.5h | 5h | 3h | 24h |

It may be possible to apply two coats in one day if the air temperature is at normal room temperature, there is good air movement, and the relative humidity is ≤ 50%. DO NOT apply subsequent coats until previous coat has thoroughly dried. It should be "dry tack free" or "dry to handle" prior to recoat.

Topcoat can be applied once >50 Shore-D Hardness has been achieved. Contact Contego for a list of approved topcoats.

Higher than recommended wet film thicknesses, high air flow and low humidity conditions may lead to crack formation.

Hairline cracks are not detrimental to fire performance. Where they do occur, repairs can be carried out by application of a brush coat of Contego HS RFB.

# 8. THICKNESS DURING APPLICATION

## 8.1 WET FILM THICKNESS (WFT)

During the application of Contego HS RFB, the wet film thickness should be checked frequently with a clean wet film thickness gauge by inserting the teeth into the wet Contego HS RFB. Care should be taken not to press the gauge into any previously applied coats that may still be soft. The highest reading indicated on moistened teeth is the wet film thickness of the most recent coat.

## 8.2 DRY FILM THICKNESS (DFT)

The dry film thickness can be estimated from the wet film thickness by multiplication with 0.72. Actual coverage depends on surface, substrate, application technique and method. No allowance is made for waste. *LUMBER AND DRYWALL SUBSTRATES MUST BE MEASUED BY WFT CONVERSION.

# 9. FINAL THICKNESS CHECK

## 9.1 TOTAL DRY FILM THICKNESS

A DFT reading should be taken as soon as the coating is sufficiently hard to allow a reading to be made without indenting the surface. DFT's may be measured using commercially available electronic type gauges. Multiple readings should be taken per steel member to verify sufficient coating thickness. *LUMBER AND DRYWALL SUBSTRATES MUST BE MEASURED BY WFT CONVERSION.

The final DFT reading can be taken as soon as Shore-D hardness > 50 is reached.

## 9.2 DRY FILM THICKNESS OF CONTEGO HS RFB

The DFT of Contego HS RFB can be calculated from the total DFT by subtracting the DFT of the primer. Therefore, it is important to determine the DFT of the primer prior to application of Contego HS RFB.

### 9.3 THICKNESS VERIFICATION

Verify that the total DFT of the fire protection coating (without primer and topcoat) complies with the requirements of the official approval document. Do not apply any topcoat until the DFT of Contego HS RFB has been properly verified. See AWCI 12-B for practice standards. *Lumber and drywall substrates must be verified by WFT records of application and converted to DFT total by .72 multiple.

# 10. REPAIR

### 10.1 DAMAGE OF PRIMER AND CONTEGO HS RFB

Remove unsound and damaged coatings to a neat firm edge with sound adhesion. Remove all corrosion products. For limited small areas prepare steel surface in accordance with SSPC SP11 without polishing the substrate. For large areas of repair, the exposed steel surface should be prepared by abrasive blasting to a minimum standard of SSPC-SP6. For further repair and removal guidelines consult Contego International representative.

Feather coat edges by abrading. Reinstate the original or other priming system recommended by Contego. Avoid overlap of primer onto surrounding.

Reinstate the Contego HS RFB within the recommended overcoating limits of the repair primer.

Apply Contego HS RFB in multiple applications by brush. If a topcoat has already been applied to the existing system, minimize overlap of fresh Contego HS RFB product over the existing topcoat. Apply topcoat as appropriate.

### 10.2 DAMAGE NOT REQUIRING PRIMER REPAIR

Depending on severity of damage, either lightly abrade the damaged area to a feathered edge, or cut out a suitable area of Contego HS RFB and feather out the edges. If cutting out, do not damage the priming system, otherwise repair as for damage down to steel will be required.

Reinstate Contego HS RFB to the required dry film thickness using the method described above.

After the appropriate overcoating interval apply an approved topcoat in accordance with original specification, if desired.

# 11. INTERRUPTION OF WORK / CLEAN UP

Contego HS RFB can remain in the hose for up to 18 hours. To prevent material from curing in the tip, the spray gun should be submerged in a bucket of water. For downtime longer than 18 hours, clean all application equipment with water. Run the water through all hoses and equipment until clean.

Follow sprayer manufacturer's instructions for cleaning. Do not allow Contego HS RFB to set in the hose, pump, spray gun or tip for over 24 hours.

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# SAFETY DATA SHEET

**Issuing Date** 4-Aug-2016 **Revision Date** 11-May-2021 **Revision Number** 1

## 1. IDENTIFICATION

**GHS product identifier**

**Product Name** **Contego HS Intumescent Fire Barrier Latex (High Solids Version)**

**Other means of identification**

**Synonyms** None

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Fire barrier paint

**Uses advised against** No information available

**Supplier's details**

**Supplier Address**
Contego International, Inc.
P.O. Box 49
1013 Arthur Street
Rochester, IN 46975
TEL: 1-317-580-0655

**Emergency telephone number**

**Emergency Telephone Number** 1-800-434-6444

## 2. HAZARDS IDENTIFICATION

### Classification

This chemical is not considered hazardous according to the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200).

Not classified

**GHS Label elements, including precautionary statements**

**Emergency Overview**

**Signal Word** **None**

The product contains no substances which at their given concentration are considered to be hazardous to health

**Appearance** White. **Physical State** Liquid. **Odor** Mild.

## 2. HAZARDS IDENTIFICATION - Continued

**Precautionary Statements**

**Prevention**
• None

**General Advice**
• None

**Storage**
• None

**Disposal**
• None

**Hazard Not Otherwise Classified (HNOC)**

Not applicable.

**Other information**

If product is removed by sanding or grinding may produce dust particulates.

<50% of the mixture consists of ingredient(s) of unknown toxicity.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Proprietary Formulation

## 4. FIRST AID MEASURES

### Description of necessary first-aid measures

| | |
|---|---|
| **Eye Contact** | Rinse thoroughly with plenty of water, also under the eyelids. Keep eye wide open while rinsing. Get medical attention if symptoms occur. |
| **Skin Contact** | Wash skin with soap and water. Remove and wash contaminated clothing before re-use. If skin irritation occurs: Get medical advice/ attention. |
| **Inhalation** | IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. |
| **Ingestion** | Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Consult a physician if necessary. |
| **Protection of First-aiders** | Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. |

**Most important symptoms/effects, acute and delayed**

**Most Important Symptoms/Effects** No information available.

**Indication of immediate medical attention and special treatment needed, if necessary**

**Notes to Physician** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** None

**Specific Hazards Arising from the Chemical**

None known

**Explosion Data**

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Personal Precautions** Avoid contact with the skin and the eyes. Use personal protective equipment as required.

**Environmental Precautions**

**Environmental Precautions** See Section 12 for additional Ecological Information.

**Methods and materials for containment and cleaning up**

**Methods for Containment** Prevent further leakage or spillage if safe to do so.

**Methods for Cleaning Up** Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

**Handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Use personal protective equipment as required. Do not take internally. Wash thoroughly after handling. Avoid sanding and grinding surfaces containing dried paint film.

**Conditions for safe storage, including any incompatibilities**

**Storage** Keep container tightly closed.

**Incompatible Products** Strong acids. Strong oxidizing agents.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Control parameters**

**Exposure Guidelines**

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|---|---|---|---|
| Titanium dioxide<br>13463-67-7 | TWA: 10 mg/m$^3$ | TWA: 15 mg/m$^3$ total dust<br>(vacated) TWA: 10 mg/m$^3$ total dust | IDLH: 5000 mg/m$^3$ |
| Pentaerythritol<br>115-77-5 | TWA: 10 mg/m$^3$ | TWA: 15 mg/m$^3$ total dust<br>TWA: 5 mg/m$^3$ respirable fraction<br>(vacated) TWA: 10 mg/m$^3$ total dust<br>(vacated) TWA: 5 mg/m$^3$ respirable fraction | TWA: 10 mg/m$^3$ total dust<br>TWA: 5 mg/m$^3$ respirable dust |
| Glass, oxide<br>65997-17-3 | TWA: 1 fiber/cm3 respirable fibers: length >5 µm, aspect ratio >=3:1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination<br>TWA: 5 mg/m$^3$ inhalable fraction | - | |
| Aluminum hydroxide<br>21645-51-2 | TWA: 1 mg/m$^3$ respirable fraction | - | |

| Chemical name | Alberta | British Columbia | Ontario TWAEV | Quebec |
|---|---|---|---|---|
| Titanium dioxide<br>13463-67-7 | TWA: 10 mg/m$^3$ | TWA: 10 mg/m$^3$<br>TWA: 3 mg/m$^3$ | TWA: 10 mg/m$^3$ | TWA: 10 mg/m$^3$ |
| Pentaerythritol<br>115-77-5 | TWA: 10 mg/m$^3$ | TWA: 10 mg/m$^3$<br>TWA: 3 mg/m$^3$ | TWA: 10 mg/m$^3$ | TWA: 10 mg/m$^3$ |
| Glass, oxide<br>65997-17-3 | TWA: 5 mg/m$^3$<br>TWA: 1 fibre/cm3 | TWA: 1 fibre/cm3<br>TWA: 5 mg/m$^3$ | TWA: 1 fibre/cm3<br>TWA: 5 mg/m$^3$ | TWA: 1 fibre/cm3 |
| Aluminum hydroxide<br>21645-51-2 | | TWA: 1.0 mg/m$^3$ | TWA: 1 mg/m$^3$ | |
| Propylene Glycol<br>57-55-6 | | | TWA: 10 mg/m$^3$<br>TWA: 50 ppm<br>TWA: 155 mg/m$^3$ | |

**Other Exposure Guidelines** Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

**Appropriate engineering controls**

**Engineering Measures** Showers
Eyewash stations
Ventilation systems

**Individual protection measures, such as personal protective equipment**

**Eye/Face Protection** At minimum, wear safety glasses with side shields. Goggles are preferred, especially with spray applications

**Skin and Body Protection** Wear latex, vinyl, or nitrile gloves and a long sleeved work or jump suit such as Tyvek or similar.

**Respiratory Protection** A dust mask is recommended to protect against exposure to airborne particulates or mists. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State** | Liquid. | **Appearance** | White. |
| **Odor** | Mild. | **Odor Threshold** | No information available. |

| Property | Values | Remarks / Method |
|---|---|---|
| **pH** | 8.0 - 8.5 | None known |
| **Melting Point/Range** | No data available | None known |
| **Boiling Point/Boiling Range** | 100 °C / 212 °F | None known |
| **Flash Point** | Not flammable. | None known |
| **Evaporation rate** | No data available | None known |
| **Flammability (solid, gas)** | No data available | None known |
| **Flammability Limits in Air** | | |
| **upper flammability limit** | No data available | |
| **lower flammability limit** | No data available | |
| **Vapor Pressure** | No data available | None known |
| **Vapor Density** | No data available | None known |
| **Specific Gravity** | 1.3 – 1.5 | No units, but stated at a given temperature |
| **Water Solubility** | No data available | None known |
| **Solubility in other solvents** | No data available | None known |
| **Partition coefficient: n-octanol/water** | No data available | None known |
| **Autoignition Temperature** | No data available | None known |
| **Decomposition Temperature** | No data available | None known |
| **Viscosity** | > 15,000 cTs | None known |

| | |
|---|---|
| **Flammable Properties** | Not flammable |
| **Explosive Properties** | No data available |
| **Oxidizing Properties** | No data available |

**Other information**

| | |
|---|---|
| **VOC Content (%)** | Negligible |
| **VOC (g/l)** | 0.01 |

## 10. STABILITY AND REACTIVITY

**Reactivity**

No data available.

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

None under normal processing.

**Hazardous Polymerization**

Hazardous polymerization does not occur.

**Conditions to avoid**

Incompatible products.

## 10. STABILITY AND REACTIVITY - Continued

**Incompatible materials**

Strong acids. Strong oxidizing agents.

**Hazardous decomposition products**

Carbon oxides. Nitrogen oxides (NOx).

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

**Product Information**

**Inhalation** No known hazard by inhalation.
**Eye Contact** Contact with eyes may cause irritation.
**Skin Contact** No known hazard in contact with skin.
**Ingestion** No known hazard by swallowing.

**Component Information**

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| Titanium dioxide | > 10000 mg/kg ( Rat ) | - | = 5.09 mg/L ( Rat ) 4 h |
| Pentaerythritol | = 19500 mg/kg ( Rat ) | > 10000 mg/kg ( Rabbit ) | > 5.15 mg/L ( Rat ) 4 h |
| Melamine triamino-s-triazine | = 3161 mg/kg ( Rat ) | > 1 g/kg ( Rabbit ) | - |
| Aluminum hydroxide | > 5000 mg/kg ( Rat ) | - | - |
| Propylene Glycol | = 20 g/kg ( Rat ) | = 20800 mg/kg ( Rabbit ) | - |
| 2,2,4-Trimethylpentane-1,3-diol monoisobutyrate | = 3200 mg/kg ( Rat ) | > 15200 mg/kg ( Rat ) | > 3.55 mg/L ( Rat ) 6 h |

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

**Symptoms** No information available.

**Delayed and immediate effects and also chronic effects from short and long term exposure**

**Sensitization** Not expected to be a sensitizer.
**Mutagenic Effects** No information available.
**Carcinogenicity** This product contains titanium dioxide in a non-respirable form. Inhalation of titanium dioxide is unlikely to occur from exposure to this product. However, this product may become a dust nuisance when removed by abrasive blasting, sanding, or grinding.

| Chemical name | ACGIH | IARC | NTP | OSHA |
|---|---|---|---|---|
| Titanium dioxide 13463-67-7 | - | Group 2B | - | X |
| Melamine triamino-s-triazine 108-78-1 | - | Group 2B | - | X |
| Glass, oxide 65997-17-3 | - | Group 3 | - | - |

**Legend**

**IARC (International Agency for Research on Cancer)**
Group 2B - Possibly Carcinogenic to Humans
Group 3 - Not Classifiable as to Carcinogenicity in Humans
**OSHA (Occupational Safety and Health Administration of the US Department of Labor)**
X - Present

## 11. TOXICOLOGICAL INFORMATION - Continued

**Reproductive Toxicity** No information available.
**STOT - single exposure** No information available.
**STOT - repeated exposure** No information available.
**Aspiration Hazard** No information available.

**Numerical measures of toxicity - Product**

**Acute Toxicity** <50% of the mixture consists of ingredient(s) of unknown toxicity.

*The following values are calculated based on chapter 3.1 of the GHS document:*

**LD50 Oral** 4425 mg/kg; Acute toxicity estimate

## 12. ECOLOGICAL INFORMATION

| Chemical name | Algae/aquatic plants | Fish | Toxicity to microorganisms | Crustacea |
|---|---|---|---|---|
| Pentaerythritol | No data available | 96h LC50: > 100 mg/L (Oryzias latipes) | No data available | 48h EC50: 30477 - 37043 mg/L (Daphnia magna) |
| Melamine triamino-s-triazine | 96h EC50: = 940 mg/L (Scenedesmus pannonicus) | 96h LC50: > 3000 mg/L (Poecilia reticulata) | EC50 > 10000 mg/L 30 min | 48h EC50: > 2000 mg/L (Daphnia magna) |
| Propylene Glycol | 96h EC50: = 19000 mg/L (Pseudokirchneriella subcapitata) | 96h LC50: 41 - 47 mL/L (Oncorhynchus mykiss)<br>96h LC50: = 51400 mg/L (Pimephales promelas)<br>96h LC50: = 51600 mg/L (Oncorhynchus mykiss)<br>96h LC50: = 710 mg/L (Pimephales promelas) | - | 48h EC50: > 1000 mg/L (Daphnia magna) |
| 2,2,4-Trimethylpentane-1,3-diol monoisobutyrate | 72h EC50: = 18.4 mg/L (Pseudokirchneriella subcapitata) | 96h LC50: = 30 mg/L (Pimephales promelas) | No data available | No data available |

**Persistence and Degradability** No information available.

**Bioaccumulation** No information available.

**Component Information**

| Chemical name | Partition coefficient |
|---|---|
| Melamine triamino-s-triazine | 1.14 |
| 2,2,4-Trimethylpentane-1,3-diol monoisobutyrate | 3.47 |

**Other Adverse Effects**

No information available.

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Methods** This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

**Contaminated Packaging** Do not re-use empty containers.

**California Waste Codes** 331

## 14. TRANSPORT INFORMATION

**DOT** Not regulated

**TDG** Not regulated

**MEX** Not regulated

**ICAO** Not regulated

**IATA** Not regulated

**IMDG/IMO** Not regulated

**RID** Not regulated

**ADR** Not regulated

**ADN** Not regulated

## 15. REGULATORY INFORMATION

### International Inventories

**TSCA** All ingredients are on the inventory or exempt from reporting.
**DSL** Not determined

### Legend

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

### U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

**SARA 311/312 Hazard Categories**

| | |
|---|---|
| **Acute Health Hazard** | No |
| **Chronic Health Hazard** | No |
| **Fire Hazard** | No |
| **Sudden Release of Pressure Hazard** | No |
| **Reactive Hazard** | No |

## 15. REGULATORY INFORMATION - Continued

**Clean Water Act**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

### U.S. State Regulations

**California Proposition 65**

This product contains the following Proposition 65 chemicals:

| Chemical Name | CAS-No | California Prop. 65 |
|---|---|---|
| Titanium dioxide | 13463-67-7 | Carcinogen |

### U.S. State Right-to-Know Regulations

"X" designates that the ingredients are listed on the state right to know list.

| Chemical name | New Jersey | Massachusetts | Pennsylvania | Rhode Island | Illinois |
|---|---|---|---|---|---|
| Titanium dioxide<br>13463-67-7 | X | X | X | | |
| Pentaerythritol<br>115-77-5 | X | X | X | | |
| Melamine triamino-s-triazine<br>108-78-1 | X | X | X | | |
| Propylene Glycol<br>57-55-6 | X | | X | | |

**U.S. EPA Label Information**

**EPA Pesticide Registration Number** Not applicable

## 16. OTHER INFORMATION

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **NFPA** | **Health Hazard** 1 | **Flammability** 0 | **Instability** 0 | **Physical and Chemical Hazards** - |
| **HMIS** | **Health Hazard** 1 | **Flammability** 0 | **Physical Hazard** 0 | **Personal Protection** X |

**Revision Date** 11-May 2021
**Revision Note** First revision.

## 16. OTHER INFORMATION - Continued

**General Disclaimer**

**The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.**

| | | | |
|---|---|---|---|
| **PREPARED BY**: | Comprehensive Safety Compliance, Inc. (CSC)<br>Occupational Health and Safety Consultant<br>(412) 826-5480 | **VERSION NO.**: 1 | **APPROVAL DATE**: 5/11/21 |
| **MFR. CONTACT**: | Contego International, Inc.<br>P.O. Box 49<br>1013 Arthur Street<br>Rochester, IN 46975<br>TEL: 1-317-580-0655 | **SUPERSEDES SDS DATED**: N/A | |

**End of Safety Data Sheet**