BASF

The Chemical Company

PRODUCT DATA

3 03 63 00 **Epoxy Grouting**

MASTERFLOW® 648 CP PLUS

High-strength, high-temperature, high-flow epoxy grout

Description

Masterflow® 648 CP Plus grout is three-component modified epoxy-resin-based grout with variable fill rates. Masterflow® 648 CP Plus combines high-temperature performance and crack resistance with outstanding flow characteristics.

Features	Benefits
• High early and 7 day strengths with low creep	Rapid turnaround
• Superior physical properties at high temperatures	Unaffected by temperature extremes
• High flowability	Excellent bearing area for even distribution of loads
• Variable fill ratio	Optimum flowability, bearing area, and economics
• Good chemical resistance	Ideal for industrial environments

Yield

216 LB FULL UNITS (1.73 FT^3, 0.05 M^3)

Resin:
One 20.2 lb pail (9.2 kg)

Hardener:
One 7.6 lb bottle (3.4 kg)

Aggregate:
Four 47 lb bags (21.3 kg)

(A 3 bag high-flow unit will generate 1.35 ft^3 [0.04 m^3].)

54.4 LB UNIT (0.43 FT^3, 0.012 M^3)

Resin:
One 5.1 lb pail (2.3 kg)

Hardener:
One 1.9 lb bottle (0.9 kg)

Aggregate:
One 47 lb bag (21.3 kg)

(54.4 lb unit is shipped in a 5 gallon pail over-pack)

Packaging

Masterflow® 648 CP Plus grout is available in complete units in 2 packaging sizes:

54.4 lb unit (0.43 ft^3 [0.012 m^3])

216 lb full unit (1.73 ft^3 [0.05 m^3])

As a safety precaution, order an additional 10 – 20% of material to accommodate installation variables.

Color

Dark gray

Shelf Life

2 years (for both resin and hardener) when properly stored

Storage

Store in unopened containers at 60 to 80° F (16 to 27° C) in clean, dry conditions.

Where to Use

APPLICATION

- Where fast turnaround and high early and 7 day compressive strengths are needed
- Precision alignment of machinery, compressors, and prime movers
- Foundations under crusher ball mills, slab tables, and other equipment
- Mining, steel, gas, and power industries
- Pulp and paper mills
- Chemical processing facilities

LOCATION

- Interior or exterior

How to Apply

Refer to Appendix MB-11: Guide to Epoxy Grouting for additional information.

Surface Preparation

FOUNDATION PREPARATION

1. Cure the foundation until design strength of the concrete is achieved and foundation is dry. Use the recommended procedure according to ACI Standard 318: “Concrete shall be maintained above 50° F (10° C) and in a moist condition for at least the first 7 days.” Minimum concrete compressive strength of 3,000 psi (21 MPa) should be specified; higher strength concrete is recommended for optimum performance.

2. Chip the concrete surface so aggregate is exposed to ensure all laitance and weak float are removed. Chamfer the edge of the concrete 45 degrees to about a 2" (51 mm) width. (See Figure 1 on page 5.)

3. For freshly placed concrete, consider using Liquid Surface Etchant (see Form No. 1020198).

4. The concrete base must be clean, dry, and free of oil, wax, and other contaminants.

5. If an anchor bolt sleeve is to be filled, be sure all water is removed. Use a siphon, vacuum pump, or rubber hose and bulb. Remove the residual moisture by either forced air or evaporation.

6. Seal the anchor bolt hole with felt, foam rubber, or other means.

Protection and Repair

Technical Data

Composition

Masterflow® 648 CP Plus grout is three-component modified epoxy-resin-based grout.

Fill ratio

- The fill ratio is the weight of aggregate compared to the combined resin and hardener components. Masterflow® 648 CP Plus is used at a variable fill ratio from the standard 6.75 to 1 ratio to as low as 5.06 to 1 (high-flow version).
- The standard 1.73 ft^3 (0.049 m^3) unit of Masterflow® 648 CP Plus includes 188 lbs (85.2 kg) of aggregate (or four 47-lb bags). This 6.75 to 1 fill ratio can be reduced to as low as three bags or a 5.06 to 1 fill ratio yielding 1.34 ft^3 (0.038 m^3).
- For projects requiring a fill ratio different than the standard 4 bag mix, simply determine how many bags of aggregate will be used (number of bags per x number of units) and purchase the components (resin, hardener, and aggregate) separately.
- Unlike most epoxy grouts, Masterflow® 648 CP Plus grout maintains high bearing area when fill ratios are decreased. In addition, physical properties, including high-temperature performance, remain at high levels.
- Determining the proper fill ratio for a particular project and purchasing accordingly optimizes the cost per ft^3, flow, and physical properties. A guide-line for suggested fill ratios is shown below. In using this guide, keep in mind that the temperature of the foundation and plate is the critical concern; however, grout and ambient temperatures are also important.

Fill Ratio Guideline

TEMPERATURE	1.73 FT^3 UNIT VERY THIN POURS OR VERY LONG DISTANCES	STANDARD POURS
> 90° F (> 32° C)	—	—
70 to 90° F (21 to 32° C)	Up to 1/2 bag	—
50 to 70° F (10 to 21° C)	1/2 to 1 bag	1/2 bag

The chart above provides guidelines for the amount of aggregate that can be removed from a 1.73 ft^3 unit in order to optimize flow and cost per ft^3. A maximum of 12 lbs of aggregate can be removed from a 0.43 ft^3 unit.

Test Data

PROPERTY	RESULTS			TEST METHODS
Compressive strength, psi (MPa)				ASTM C 579 Method B, modified, 2 by 2" cubes
Consistency (Fill Ratio)	**7 Day Ambient**	**Post Cured***		
Standard (6.75:1)	14,000 (96)	16,000 (110)		
High-flow (5.06:1)	11,500 (79)	12,500 (86)		
Elevated-temperature compressive strength,* psi (MPa)				ASTM C 580
Consistency (Fill Ratio)	**73° F (23° C)**	**140° F (60° C)**	**170° F (77° C)**	
Standard (6.75:1)	15,000 (103)	12,300 (85)	10,000 (69)	
High flow (5.06:1)	12,500 (86)	9,000 (62)	7,000 (48)	
Elevated-temperature flexural modulus,* psi (GPa)				ASTM C 580
Consistency (Fill Ratio)	**73° F (23° C)**	**140° F (60° C)**	**170° F (77° C)**	
Standard (6.75:1)	2.1 x 10^6 (15.0)	1.7 x 10^6 (11.6)	0.8 x 10^6 (6.0)	
High flow (5.06:1)	1.6 x 10^6 (11.0)	1.3 x 10^6 (8.9)	0.5 x 10^6 (3.0)	
Elevated-temperature flexural strength,* psi (MPa)				ASTM C 580
Consistency (Fill Ratio)	**73° F (23° C)**	**140° F (60° C)**	**170° F (77° C)**	
Standard (6.75:1)	4,500 (31)	4,000 (28)	3,500 (24)	
High flow (5.06:1)	4,000 (28)	3,500 (24)	3,000 (21)	
Creep, in/in				ASTM C 1181, 600 psi, 140° F (4.4 MPa, 60° C)
Consistency (Fill Ratio)				
Standard (6.75:1)	4.0 x 10^{-3}			
High flow (5.06:1)	6.0 x 10^{-3}			

*Cured 24 hours at room temperature, post cured 16 hours at 140° F, and conditioned 24 hours at test temperature.

Cure rate, filled 6.75:1 **Consistency,** psi (MPa), when cured at:				ASTM C 579 modified, 2 by 2" cubes
Hours	**50° F (10° C)**	**73° F (27° C)**	**140° F (60° C)**	
8	—	—	—	
16	—	9,500 (66)	10,000 (69)	
24	—	10,000 (69)	13,000 (90)	
48	4,500 (31)	13,000 (90)	14,000 (96)	
72	6,500 (45)	13,500 (93)	15,000 (103)	
96	8,000 (55)	14,000 (96)	15,000 (110)	
Tensile strength, psi (MPa)				ASTM C 307
Consistency (Fill Ratio)				
Standard (6.75:1)	2,200 (15)			
High flow (5.06:1)	2,000 (14)			
Coefficient of thermal expansion, 73 – 210° F (23 – 99° C), in/in/° F (cm/cm/° C)				ASTM C 531
Consistency (Fill Ratio)				
Standard (6.75:1)	19.0 x 10^{-6} (34.0 x 10^{-6})			
High flow (5.06:1)	23.0 x 10^{-6} (41.0 x 10^{-6})			
Shrinkage, unrestrained; linear, %,				ASTM C 531
Consistency (Fill Ratio)				
Standard (6.75:1)	0.0005			
High flow (5.06:1)	0.00065			

Test Data, continued

PROPERTY	RESULTS	TEST METHODS
Bond strength to steel, tension, psi (MPa), at 73° F (23° C)	3,000 (21)	Michigan DOT
Bond strength to steel, shear, psi (MPa), at 73° F (23° C)	4,000 (28)	Michigan DOT
Density, lb/ft³ (kg/m³)		ASTM C 905
Standard (6.75:1)	124 (1,986)	
High flow (5.06:1)	117 (1,874)	
Impact strength	Better than concrete	
Abrasion resistance	Better than concrete	
Flash points, ° F (° C)		Pensky-Martens Closed Cup
Masterflow® 648 CP Plus liquid	400 (204)	
Masterflow® 648 CP Plus hardener	240 (116)	

All data shown is typical and representative of properties of actual production runs. Individual test results may vary by approximately 10% from lab-testing and batch-to-batch variations.

Chemical Resistance

Masterflow® 648 CP Plus grout resists nonoxidizing mineral acids and salts, caustics, dilute oxidizing acids and salts, plus some organic acids and solvents. For more specific information, contact your BASF representative.

7. Cover all shims and leveling screws with putty or clay to keep the grout from adhering. Use model clay, glazing putty, or anything with a putty consistency that will stick but not harden. Shims or jack pockets may be formed with wood, and forms filled with damp sand.

8. Remove shims or jack screws after the grout cures.

9. SHADE THE FOUNDATION FROM DIRECT SUNLIGHT FOR AT LEAST 24 HOURS BEFORE AND 48 HOURS AFTER GROUTING.

EQUIPMENT PREPARATION

1. Sandblast to near-white metal the bonding surfaces of the base to be grouted; it must be free of coatings, wax, grease, or scale. Other mechanical methods, such as grinding or sanding, will suffice, but do not produce as high a bond strength as sandblasting.

2. Primer should be used ONLY when a long delay between cleaning and grouting could allow excessive rusting or contamination. If the base must be primed, use Concresive® 1090. If the primer has been on the surface for more than 1 month, abrade and solvent wipe it so that no residue is left. Priming, if required, must be performed when the relative humidity is less than 80% and the temperature of the surface is at least 5° F (3° C) higher than the dew point.

3. The grout should come up at least 3/4" (19 mm) onto the equipment. Mask the area above it with masking tape.

4. To facilitate cleanup, wax or cover all surfaces where the grout may splash or spill.

Forming

1. Protect the foundation and equipment from rain or moisture. Water will tend to prevent grout bond and inhibit cure.

2. Seal off areas that will not be grouted.

3. Place forms no greater than 6" (152 mm) away from the edge of the individual base rail or sole-plate on the sides where the grout is not being poured. Excessive edges create thermal stress and result in excessive cracking. On the pouring side forms are typically 2 – 6" (51 – 152 mm) from the edge of the supporting area. However, this may vary depending on the application. Moderate to large-size equipment and difficult or narrow placement applications should utilize an extended head form (headbox) to create additional head pressure and to enhance placement. Consult your BASF representative for specific recommendations.

4. Before erecting the forms, cover them with EXTRA HEAVY COATS OF PASTE WAX. Forms can be shellacked before waxing to improve release. Keep wax off concrete and steel surfaces. As an alternative to waxing, a polyethylene or other nonbondable film may be used as a release agent. The top of the form should extend at least 3/4" (19 mm) above the bottom of the rail or plate.

5. Forms must be liquid tight. They may be sealed with putty, foam or caulk. Seal wood forms to vertical concrete surface by applying putty, foam, or caulk below top of concrete and then press form into place.

6. Expansion joints will reduce the possibility of cracking. On multiple soleplate installations, each soleplate may be isolated. Expansion joints can be made with any material that is resistant to oils and chemicals in the environment and will not allow penetration to the concrete foundation. Oil resistant, closed-cell foam works best. For more information, refer to Appendix MB-12: Expansion Joint Recommendations or contact your BASF representative.

DEEP-POUR RECOMMENDATIONS

Masterflow ® 648 CP Plus + can be used for deep pours. When pour thickness will exceed six inches (150 mm) or mass exceeds 20 cubic feet (.57 cubic meters)

1. Where a deep pour is necessary, 3/8 – 1/2" (9.5 – 13 mm) rebar on 8 – 12" (203 to 305 mm) centers may be used to minimize stress cracking. Locate a bottom tier about 2" (51 mm) above the foundation surface. Space additional tiers, if required, at equal distances in the grout pour, with vertical supports as required. All rebar must be 2" (51 mm) from any grout surface.

For detailed information: see BASF Building Systems technical bulletin "Reinforcing Bar Installation in Epoxy Grouts" or contact BASF Technical Service.

2. For deep pours, let existing rebar protrude from the foundation on 12 – 18" (305 – 457 mm) centers around the perimeter and about 6 – 12" (152 – 305 mm) in from the edge. This will tie the deep pour to the foundation. The first pour should be within 2 – 3" (51 – 76 mm) of the bottom of the base. The final pour should not be made until the first pour is hard and has returned to ambient temperature, usually within 24 – 30 hours. (See Technical Data Section for more information)

3. For deep-pour applications or situations that preclude the installation of rebar, consider using Masterflow® 678 DP Plus (see Form No. 1019404).

Mixing

1. AGGREGATE MUST BE COMPLETELY DRY. Store under cover and on pallets. Before using, check aggregate for moisture by squeezing a handful.

2. Precondition all components to 70° F for 24 hours before using.

3. Depending upon the size of the equipment, a suitable crew will consist of 3 workers for mixing and transporting and 4 workers (2 crews of 2 workers) for placement.

4. Pour the hardener into a pail of grout resin and stir until well mixed (approximately 3 minutes). Keep the mixing paddle submerged to avoid air entrainment.

5. Pour the mixture into the mixer without delay.

6. Add the grout aggregate, one bag at a time, and mix until completely wet (approximately 2 minutes). The first batch may be slightly less fluid than later batches because some of the resin is absorbed in wetting the mixer. Withholding 1/2 – 1 bag of aggregate from the first batch of a full unit will compensate for lost resin. WHEN MIXING AGGREGATE WITH THE PREMIXED RESIN AND HARDENER, POUR THE AGGREGATE INTO THE MIXING VESSEL AFTER THE PREMIXED RESIN AND HARDENER HAVE BEEN PLACED IN THE VESSEL.

7. Adjust the amount of aggregate used for the temperature and type of pour. The temperature of the grout, foundation, and equipment base are more important than the air temperature because they will affect the grout flow rate. The required flow is related to the grout thickness (between the foundation and base) and the flow distance. The maximum amount of aggregate should be used that will still produce sufficient flow. Lower temperatures reduce flow, so reduce the amount of aggregate used to compensate for the increased viscosity. Large open areas or deep grout pours with short-flow distances will not require the same amount of flow and should be done with higher amounts of aggregate.

8. The following recommendations provide general guidelines on the amount of aggregate that can be excluded from a full-size (4 bag) unit.

TEMPERATURE ° F (° C)	TYPICAL POURS	THIN POURS OR LONG FLOW DISTANCE
Materials Removed		
90 (32)	—	—
70 – 90 (21 – 32)	—	Up to 1/2 bag
50 – 70 (10 – 21)	Up to 1/2 bag	1/2 to 1 bag

9. Pour the grout into a wheelbarrow or buckets for transporting to the pour-site. Remove it from the wheelbarrow within 10 – 15 minutes or it will be more difficult to place. The grout will not harden as rapidly after pouring because the concrete and the engine base tend to dissipate the heat and slow hardening.

10. After the job is complete, clean the mixer, wheelbarrow, and tools with ketone solvents, xylene, or lacquer thinner. Use proper safety procedures when using flammable solvents for cleaning.

Working Time

The following chart denotes the working time of a fresh grout mix at various ambient temperatures. The working time begins when the hardener is added to the resin. Do not let resin and hardener stand without adding aggregate. This material produces an exothermic reaction (heat generating). If the material exotherms without aggregate, the temperature can cause decomposition or gassing, releasing potentially hazardous fumes. If the catalyzed resin cannot be used immediately, spread the material over a large open surface, which will allow the heat to dissipate normally.

Working time

TEMPERATURE, ° F (° C)	MINUTES
90 (32)	50 – 60
70 (21)	90 – 120
50 (10)	120 – 150

The above working times assume product has been properly preconditioned for cold or hot weather use.

HOT-WEATHER GROUTING

1. Avoid high temperatures while grouting in the summer. High ambient temperatures will increase the amount of cracking, especially during the colder winter months.

2. If the packaged grout is above 90° F (32° C), chill the sealed pails of grout resin in a tub of ice or cover the pails with water-soaked burlap. It is not necessary to cool the grout below 70° F (21° C).

3. PROVIDE SHADE FROM DIRECT SUNLIGHT FOR AT LEAST 24 HOURS BEFORE AND 48 HOURS AFTER GROUTING.

COLD-WEATHER GROUTING

1. Temperatures below 60° F (16° C) make the grout stiff and hard to handle and significantly increase the cure time. The baseplate and foundation may be much cooler than room temperature. In cold weather, store materials in a warm place. For best handling, the grout components should be at least 70° F (21° C).

2. When baseplate and foundation temperatures (measured by a contact thermometer) are less than 50° F (10° C), the grout may be so stiff it will not readily flow. The length and depth of the grout pour also determines the flowability, so heating of the area may be necessary, depending on field conditions.

3. If heating is required, erect an enclosure (typical materials are polyethylene or canvas) around the equipment and foundation to be grouted. Forced air or infrared heaters may be used to obtain the necessary heat to increase the baseplate and foundation temperatures to 50 to 70° F (10 to 21° C). Avoid local hot spots. Apply heat 1 – 2 days in advance of grouting to achieve uniform baseplate and foundation temperatures. Avoid exposure to exhaust from heating equipment. Remove heat during grouting placement.

4. For temperatures from 40 to 50° F (4 to 10° C), consider using Masterflow® 648 CP Grout Accelerator (see Form 1019308).

Application

1. For flat bottom plates and bases, pour the grout from one side through to the other across the short dimension.

2. When grouting closed areas, prevent air entrapment by starting at one end of the form and filling the cavity completely while advancing toward the other end.

3. Masterflow® 648 CP Plus grout will flow, but it can be aided with pushing tools like banding straps or plywood strips. Push with long, slow strokes rather than short jabs until no air pockets remain under the frames. DO NOT VIBRATE.

4. Where grout cannot be adequately worked to fill the cavity (because of large size or limited space), a head box will greatly assist flow. Use a sturdy wooden box or sheet metal funnel about 1 – 2 ft (0.3 – 0.6 m).

5. Check frequently for leaks. Leaks do not self-seal. If not stopped, they will cause voids.

6. If a multi-pour installation is necessary, sprinkle a small amount of Masterflow® 648 CP Plus aggregate on the first pour's surface as the grout solidifies. Before placement of the second pour, brush the loose aggregate from the first pour's surface. Another method is to sandblast and brush clean the first pour's surface.

Curing

1. Loosen jack screws and place equipment in operation when design strength of the grout has been achieved.

2. The grout will not harden below a temperature of approximately 35° F (2° C).

3. For best results, install and cure the grout at temperatures above 55° F (13° C). Water will inhibit the cure and strength of the grout; protect the installation from rain until it hardens.

COLD-WEATHER CURING

1. The foundation and the equipment base will probably be cooler than room temperature unless room temperature has been constant for some time. Use the foundation and engine temperature, therefore, in estimating cure time.

2. Temperatures vary so radically, day vs. night, atmospheric vs. metal surface, that field judgment must still be used as the final measure. Cured grout should have a solid, almost metallic feel when struck with a hammer. Be sure to check as close to the base of the equipment as possible.

Finishing

A smooth finish may be obtained by spraying or brushing the surface with xylene or mineral spirits. Obtain best results by smoothing the surface several times just before the surface of the grout hardens.

Clean Up

Clean tools and mixer with ketone solvents or xylene before epoxy cures. Cured material must be removed mechanically.

For Best Performance

- Do not add solvent, water, or any other material to the grout.
- Do not alter the resin or hardener proportions.
- Installation procedures for this material will differ greatly from those for cementitious or inorganic grouts. Contact your local representative for a pre-job conference to plan the installation.
- The installation procedures contained in this technical product bulletin are as specific as possible. They highlight generally accepted, successful field practices for precision grouting. They may be followed, modified, or rejected by the owner, engineer, contractor, or their representative; however, they and not BASF are responsible for planning and executing procedures appropriate for a specific installation.
- When the planned procedures differ from those in this product data sheet, contact your local BASF representative.
- For guidelines on specific anchor-bolt applications, contact Technical Service.
- Always use a head box when placing less than 1" (25 mm) depths.
- Do not thin with solvents.
- Substrate temperature must be greater than 50° F (10° C).
- Cold material will exhibit decreased flowability and reduced strength development.
- Do not alter the resin and hardener proportions.
- The minimum placement thickness is 1/2" (13 mm).
- Epoxy-based grouts will sometimes develop cracks. Cracking is generally caused by thermal stresses, temperature differences from season to season, and operating vs. non-operating temperatures. It often occurs on the shoulder surface near sharp corners of the baseplate and at anchor bolts. Horizontal edge cracks may occur just below the grout-concrete interface, especially in outdoor installations exposed to low temperatures. Chamfering the concrete edge helps reduce this cracking. Following proper installation procedures also reduces the amount of potential cracking. If cracks develop, use Masterflow® 648 CP Plus resin and hardener (mixed) for crack repairs.
- Make certain the most current versions of product data sheet and MSDS are being used; call Customer Service (1-800-433-9517) to verify the most current version.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

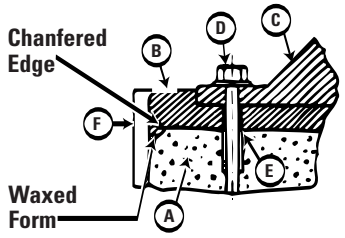

Figure 1 — Regular Equipment

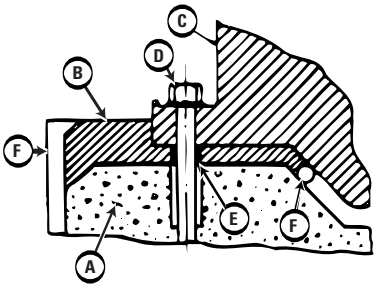

Figure 2 — Engine With Oil Pan

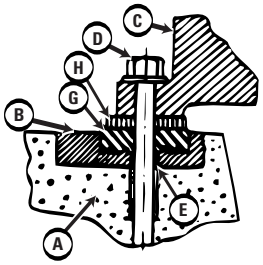

Figure 3 — Rail or Soleplate

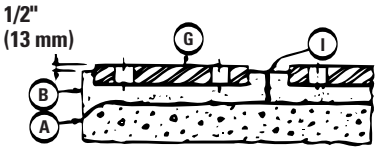

Figure 4 — Typical Rail With Expansion Joint Section

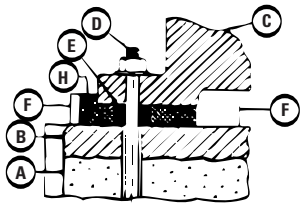

Figure 5 — Typical Epoxy Chock Application

Key

A. Concrete Foundation
B. Grout
C. Equipment Base
D. Anchor Bolt
E. Anchor Bolt Sleeve Seal
F. Form
G. Soleplate or Rail
H. Shim or Chock
I. Expansion Joint

Typical Installation Procedures
Health and Safety

MASTERFLOW® 648 CP PLUS PART A

WARNING

Masterflow® 648 CP Plus Part A contains epoxy resin, 1,4-butanediol diglycidyl ether.

Risks

May cause skin, eye and respiratory irritation. May cause dermatitis and allergic responses. Potential skin and/or respiratory sensitizer. Ingestion may cause irritation.

Precautions

Use only with adequate ventilation. Avoid contact with skin, eyes and clothing. Keep container closed when not in use. Wash thoroughly after handling. DO NOT take internally. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

Refer to Material Safety Data Sheet (MSDS) for further information.

Proposition 65

This product contains materials listed by the State of California as known to cause cancer, birth defects or other reproductive harm.

VOC Content

0 g/L or 0 lbs/gal less water and exempt solvents when components are mixed and applied per Manufacturer's instructions.

MASTERFLOW® 648 CP PLUS PART B

DANGER—CORROSIVE

Masterflow® 648 CP Plus Part B contains tall oil fatty acids, reaction products with tetraethylene pentamine; tetraethylene pentamine; triethylenetriamine; 2,4,6-tris((dimethylamino)methyl)phenol.

Risks

Contact with skin or eyes may cause burns. Ingestion may cause irritation and burns of mouth, throat and stomach. Inhalation of vapors may cause irritation. May cause dermatitis and allergic responses. Potential skin and/or respiratory sensitizer. Repeated or prolonged contact with skin may cause sensitization. INTENTIONAL MISUSE BY DELIBERATELY INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

Precautions

DO NOT get in eyes, on skin or clothing. Wash thoroughly after handling. Keep container closed. DO NOT take internally. Use only with adequate ventilation. DO NOT breathe vapors. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations

First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

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0 g/L or 0 lbs/gal less water and exempt solvents when components are mixed and applied per manufacturer's instructions.

MASTERFLOW® 648 CP PLUS AGGREGATE

WARNING!

Masterflow® 648 CP Plus Aggregate contains Silica, crystalline quartz; almandite garnet; ceramic.

Risks

May cause skin, eye or respiratory irritation. Ingestion may cause irritation. Contains small free respirable quartz which has been listed as a suspected human carcinogen by NTP and IARC. Repeated or prolonged overexposure to free respirable quartz may cause silicosis or other serious and delayed lung injury.

Precautions

Avoid contact with skin, eyes and clothing. Prevent inhalation of dust. Wash thoroughly after handling. Keep container closed when not in use. DO NOT take internally. Use only with adequate ventilation. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

Refer to Material Safety Data Sheet (MSDS) for further information.

Proposition 65

This product contains material listed by the State of California as known to cause cancer, birth defects or other reproductive harm.

VOC Content

0 g/L or 0 lbs/gal less water and exempt solvents.

For medical emergencies only, call ChemTrec (1-800-424-9300).

BASF Construction Chemicals, LLC – Building Systems

889 Valley Park Drive
Shakopee, MN, 55379

www.BuildingSystems.BASF.com

Customer Service 800-433-9517
Technical Service 800-243-6739

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