

MATERIAL SAFETY DATA SHEET



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SECTION I – MATERIAL IDENTIFICATION

Trade/Material Name: PHENOLIC POWDER (Black, Red, & Green)

SECTION 2. HEALTH HAZARD DATA

AS SOLD:

THE PRODUCT IS A PLASTIC MOLDING COMPOUND: A PLASTIC RESIN (PHENOL-FORMALDEHYDE POLYMER) INTIMATELY MIXED AND REACTED WITH ONE OR MORE OF A VARIETY OF ORGANIC AND/OR INORGANIC FILLING MATERIALS. THE PLASTIC RESIN IS NOT BELIEVED OR KNOWN TO BE HAZARDOUS. WHEN FULLY "CURED" OR REACTED, THE PLASTIC RESIN IS INSOLUBLE, INFUSIBLE AND BINDS THE WELL-DISPERSED, EMBEDDED FILLING MATERIALS. HOWEVER, "AS SOLD" THE PLASTIC RESIN IS NOT COMPLETELY "CURED" OR REACTED AND CONTAINS SOME UNREACTED INGREDIENTS DISSOLVED WITHIN IT. SO DISSOLVED, THESE CHEMICALS ARE EXTREMELY UNLIKELY TO POSE A HAZARD; BUT BECAUSE THEY ARE HAZARDOUS IN THEIR PURE FORMS, OSHA REQUIRES THAT THEY BE REPORTED AND DESCRIBED AS HAZARDOUS (SEE BELOW AND SECTION 6). UNDER NORMAL

CONDITIONS OF STORAGE AND HANDLING, NO SIGNIFICANT AMOUNT OF HAZARDOUS VAPORS SHOULD EVOLVE FROM THE "AS SOLD" PRODUCT. BECAUSE PHENOL IS MORE SOLUBLE IN THE RESIN THAN IN WATER, THERE IS NO LIKELY SIGNIFICANT HEALTH HAZARD THROUGH SKIN ABSORPTION. THE GREAT MAJORITY OF FILLING MATERIALS ARE EMBEDDED WITHIN COMPOUND GRANULES THAT ARE LARGE ENOUGH NOT TO CONSTITUTE AN INHALATION HAZARD. NEVERTHELESS, SOME PARTICLES OF PLASTIC RESIN AND/OR FILLING MATERIALS MAY BE PRESENT IN A SIZE THAT CONSTITUTES A RESPIRABLE DUST (INCLUDING, IN SOME PRODUCTS, UP TO 1% **INORGANIC FILLING MATERIAL MIXED IN AFTER COMPOUNDING**). **THIS RESPIRABLE DUST MAY CONTAIN ONE OR MORE OF THE FOLLOWING MATERIALS: CARBON BLACK, COAL DUST, FIBROUS GLASS, GRAPHITE, MICA, MINERAL WOOL FIBER, TALC AND/OR WOOD FLOUR (SOFT).** CHRONIC INHALATION OF EACH OF THE ABOVE HAS BEEN ASSOCIATED WITH FIBROTIC LUNG DISEASE. FOR MOST OR ALL, IT HAS BEEN ASSOCIATED WITH INCREASED RISK OF LUNG CANCER, ESPECIALLY AMONG SMOKERS. INHALATION OF DUST SHOULD BE AVOIDABLE WITH PROPER MATERIAL HANDLING PROCEDURES AND GOOD VENTILATION, BUT IF NOT RESPIRATORS SHOULD BE WORN. THE PRIMARY ACUTE HEALTH RISK FROM EXPOSURE TO THE PRODUCT "AS SOLD" IS IRRITATION, ESPECIALLY FROM THE DUST. INGESTION, INHALATION OF DUST, AND CONTACT WITH SKIN AND EYES SHOULD BE AVOIDED.

AS USED:

DURING POLYMERIZATION (E.G., CURING OF THE PRODUCT DURING NORMAL PROCESSING) OR DECOMPOSITION (E.G., OVERHEATING OR BURNING OF THE PRODUCT) SMALL AMOUNT OF GASEOUS AMMONIA, PHENOL AND FORMALDEHYDE (AS WELL AS WATER VAPOR, CARBON MONOXIDE AND CARBON DIOXIDE) ARE EVOLVED. BREATHING OF THE FUMES CAN BE HARMFUL. IF THE ODOR OF AMMONIA OR FORMALDEHYDE IS NOTICEABLE, THEN THE AIRBORNE CONCENTRATION OF THOSE CHEMICALS SHOULD BE CAREFULLY MONITORED AND VENTILATION IMPROVEMENTS CONSIDERED; THOSE CHEMICALS BEGIN TO BE DETECTABLE BY ODOR AT CONCENTRATIONS APPROACHING OR EXCEEDING THE PELS. THE ODOR OF PHENOL BEGINS TO BE NOTICEABLE AT A CONCENTRATION ABOUT ONE-FIFTH THE PEL. IN ANY CASE, ADEQUACY OF VENTILATION CAN BEST **BE DETERMINED BY USE OF INSTRUMENTS TO MONITOR AIRBORNE CONCENTRATIONS OF AMMONIA, PHENOL, AND FORMALDEHYDE. GRINDING OR MACHINING OF CURED MOLDED MATERIAL MAY CREATE A DUST THAT POSES A RESPIRATORY HAZARD** IN INHALED (SEE ABOVE) AND MAY RELEASE SMALL AMOUNTS OF GASEOUS AMMONIA.

ACUTE OR CHRONIC HEALTH HAZARD INFORMATION

ORDINARY USE OF THIS PRODUCT IS UNLIKELY TO PRODUCE SIGNIFICANT EXPOSURE TO HAZARDOUS CHEMICALS. PELS FOR THESE CHEMICALS ARE SET AT LEVELS DESIGNED TO AVOID ANY SIGNIFICANT HEALTH RISK AND ARE ACHIEVABLE WITH PROPER MATERIAL HANDLING PROCEDURES, VENTILATION AND HOUSEKEEPING. NEVERTHELESS, PER OSHA REQUIREMENT, WE LIST THE FOLLOWING POSSIBLE HEALTH HAZARDS IF ONE WERE EXPOSED TO THE FOLLOWING CHEMICALS AT LEVELS MUCH HIGHER, OR IN A DIFFERENT FORM, THAN EXPECTED FROM ORDINARY USE OF THIS PRODUCT:

1. PHENOL - HIGHLY TOXIC. POISONING MAY OCCUR VIA SKIN ABSORPTION, VAPOR INHALATION, OR INGESTION. INHALATION OF THE VAPORS MAY CAUSE SEVERE IRRITATION TO THE NOSE, THROAT, AND RESPIRATORY TRACT. MAY CAUSE LIVER, KIDNEY AND HEART DAMAGE.
2. FORMALDEHYDE - IRRITANT TO EYES, LUNGS AND SKIN. HAS BEEN SHOWN TO CAUSE CANCER IN

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LABORATORY ANIMALS. LISTED AS AN IARC CARCINOGEN. CALIFORNIA LAW REQUIRES THE FOLLOWING STATEMENT BE INCLUDED: CONTAINS A CHEMICAL (FORMALDEHYDE) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER. NATIONAL CANCER INSTITUTE STUDY FINDS LITTLE EVIDENCE TO CONNECT FORMALDEHYDE EXPOSURE WITH CANCER IN HUMANS.

3. AMMONIA - IRRITANT TO EYES, MUCOUS MEMBRANES AND RESPIRATORY TRACT.

POSSIBLE RESPIRABLE DUST COMPONENTS (UP TO 8% MAY GO THRU 100 MESH):

4. CARBON BLACK - IRRITANT TO EYES AND RESPIRATORY TRACTS. EXPOSURE AT HIGH LEVELS IS ASSOCIATED WITH DECLINES IN PULMONARY FUNCTION AND CARDIO VASCULAR STRESS.
 5. COAL DUST - IRRITANT TO EYES, NOSE AND THROAT. CAN CAUSE RESPIRATORY EFFECTS SUCH AS PNEUMOCONIOSIS, BRONCHITIS, EMPHYSEMA AND PROGRESSIVE MASSIVE FIBROSIS, WITH LONG EXPOSURE.
 6. FIBROUS GLASS - MECHANICAL IRRITANT TO EYES, NOSE AND SKIN. CAN CAUSE IRRITATION AND INFLAMMATION OF THE NASOPHARYNGEAL REGION AND UPPER RESPIRATORY TRACT.
 7. GRAPHITE - IRRITANT TO EYES AND RESPIRATORY TRACTS. CAN CAUSE PNEUMOCONIOSIS, ALTHOUGH STUDIES SUGGEST THAT PNEUMOCONIOSIS IS A MIXED DUST REACTION.
 8. MICA - IRRITANT TO EYES. OSHA BELIEVES THAT THE EVIDENCE STRONGLY SUGGESTS THAT IT IS A PNEUMOCONIOTIC AGENT.
 9. MINERAL WOOL FIBER - IRRITANT TO EYES AND SKIN. SEVERAL STUDIES HAVE SHOWN EXCESS RISK OF NON MALIGNANT RESPIRATORY DISEASE.
 10. TALC - IRRITANT TO EYES, MUCOUS MEMBRANES AND RESPIRATORY TRACTS. MEDICAL EVIDENCE IS COMPLICATED BY THE FACT THAT TALCS CONTAIN AMPHIBOLES AND OTHER MINERALS.
- WOOD FLOUR (SOFT) - IRRITANT TO EYES, MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACTS. VARIOUS SPECIES OF WOOD DUST CAN ELICIT ALLERGIC CONTACT DERMATITIS IN SENSITIZED INDIVIDUALS. MAY CAUSE RESPIRATORY SENSITIZATION.

SECTION 3. FIRST AID

EYES: IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION.

SKIN: WASH THOROUGHLY WITH SOAP AND WATER.

INHALATION: USE WITH ADEQUATE VENTILATION. IF BREATHING IS AFFECTED, REMOVE TO FRESH AIR. IF BREATHING STOPS, APPLY MOUTH TO MOUTH RESUSCITATION. GET MEDICAL ATTENTION.

INGESTION: IF CONSCIOUS, GIVE WATER IMMEDIATELY AND INDUCE VOMITING BY PLACING FINGER DOWN THROAT. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. GET MEDICAL ATTENTION.

SECTION 4 FIRE AND EXPLOSION DATA

FLASH POINT: NO FLASH POINT

FLAMMABLE LIMITS - LEL: DUST .030 OZ./PER CUBIC FOOT **UEL:** NO DATA

EXTINGUISHING MEDIA: WATER SPRAY, FOAM DRY CHEMICAL, CARBON DIOXIDE

SPECIAL FIRE FIGHTING PROCEDURES: MSHA/NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS RECOMMENDED. AVOID INHALATION OF GASES.

UNUSUAL FIRE AND EXPLOSION HAZARDS: ORGANIC DUST/AIR MIXTURES ARE HIGHLY FLAMMABLE (EXPLOSIVE); AVOID DUST ACCUMULATIONS OR DUST-LADEN ATMOSPHERES AND SOURCES OF IGNITION.

SECTION 5. CONTROL MEASURES

WORK/HYGIENIC PRACTICES: EYE WASH AND SHOWER FACILITY SHOULD BE AVAILABLE. PRACTICE GOOD HYGIENE AND MAINTAIN A CLEAN WORK ENVIRONMENT.

VENTILATION: POINT SOURCE EXHAUST RECOMMENDED TO REMOVE DUST AND VAPORS EVOLVED DURING USE (DUST COLLECTION SYSTEM). USE EXPLOSION PROOF MOTORS.

RESPIRATORY PROTECTION: NIOSH APPROVED RESPIRATORS RECOMMENDED IF TLVS ARE EXCEEDED.

PROTECTIVE CLOTHING: GLOVES RECOMMENDED.

EYE PROTECTION: SAFETY GLASSES WITH SIDE SHIELDS.

STORAGE: STORE IN A COOL, DRY PLACE. KEEP CONTAINERS CLOSED TO AVOID CONTAMINATION.

PREVENT ACCUMULATIONS OF DUST. AVOID EXCESSIVE HEAT AND SOURCES OF IGNITION. OBSERVE GOOD

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HOUSEKEEPING PRACTICES.

SECTION 6 PHYSICAL DATA

BOILING POINT: N/A (760 MM HG)
VAPOR PRESSURE: N/A (MM HG 20 DEC C)
VAPOR DENSITY: N/A (AIR =1)
HEAT OF VAPORIZATION: N/A (DELTA HV)
SPECIFIC GRAVITY: SEE TECHNICAL (H2O I) DATA SHEET
PERCENT VOLATILE: N/A (BY WEIGHT)
EVAPORATION RATE: N/A (BUTYL ACETATE - 1)
SOLUBILITY IN WATER: NEGLIGIBLE (% BY WEIGHT)
APPEARANCE AND ODOR: GRANULAR, NODULAR, PELLET OR BRIQUETTE WITH SLIGHT ODOR OF PHENOL

SECTION 7. HAZARDOUS INGREDIENTS/SARA TITLE III

CHEMICALS MARKED WITH AN ASTERISK (*) ARE SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372.

	CAS#	PERCENT	TLV/PEL	
PHENOL	108-95-2	<6.3**	ACGIH-TWA/SKIN OSHA-TWA/SKIN	5 PPM 5 PPM
CARBON BLACK	1333-86-4	<12	ACGIH-TWA OSHA-TWA	3.5 MG/M3 3.5 MG/M3
COAL DUST		<18	ACGIH-TWA OSHA-TWA <5%S102	2 MG/M3 2.4 MG/M3
				%SIO2 + 2
				OSHA-TWA >5%SIO2 10 MG/M3
				%S102 + 2
GRAPHITE	7782-42-5	<40	ACGIH-TWA OSHA-TWA	2 MG/M3 15 MPPCF
MICA	12001-26-2	<60	ACGIH-TWA OSHA-TWA	3 MG/M3 20 MPPCF
PARTICULATES NOT OTHERWISE CLASSIFIED (PNOC)		<70	ACGIH-TWAIINHAL ACGIH-TWAIRESPIR OSHA-TWA/TOTAL OSHA-TWA/RESPIR	10 MG/M3 3 MG/M3 15 MG/M3 5 MG/M3

SECTION 8. REACTIVITY DATA

STABILITY: STABLE. AVOID CONTAMINATION. EXPOSURE TO FLAME OR HEAT, OR STORAGE AT TEMPERATURES IN EXCESS OF 100 DEGREES F.

INCOMPATIBILITY: LIKE MOST ORGANIC MATERIALS, THIS PRODUCT IS SENSITIVE TO STRONG OXIDIZING AGENTS AND MAY EITHER DECOMPOSE OR IGNITE WHEN MIXED WITH SAME.

HAZARDOUS DECOMPOSITION PRODUCTS: VAPORS EVOLVED DURING POLYMERIZATION MAY CONTAIN — PHENOL, FORMALDEHYDE, OR AMMONIA

HAZARDOUS POLYMERIZATION: SHOULD NOT OCCUR.

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SECTION 9. SPILL, LEAK AND DISPOSAL

SPILL OR LEAK PROCEDURE: VACCUM OR SWEEP WITH SWEEPING COMPOUND, SAWDUST OR SAND. AVOID GENERATING DUST. VACCUMS WITH EXPLOSION PROOF MOTORS ARE RECOMMENDED. THIS PRODUCT CONTAINS FREE PHENOL WHICH IS SUBJECT TO EFFLUENT LIMITS UNDER THE CLEAN WATER ACT.
WASTE DISPOSAL: BURY OR INCINERATE IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

SECTION 10. TRANSPORTATION INFORMATION

SHIPPING CLASSIFICATION D. 0. T. HAZARD CLASS
PLASTIC MATERIALS VIZ: NON-HAZARDOUS POWDERED FORM NMFC ITEM #156200.

SECTION 11. ADDITIONAL INFORMATION

N/A = NOT APPLICABLE

TOTAL TOTAL DUST

RESPIR. == RESPIRABLE DUST

THE INFORMATION SET FORTH HEREIN /S FURNISHED FREE OF CHARGE AND IS BASED ON TECHNICAL DATA WHICH METLAB BELIEVES TO BE RELIABLE. IT IS INTENDED FOR USE BY PERSONS HAVING TECHNICAL SKILLS AND AT THEIR OWN DISCRETION AND RISK. SINCE CONDITIONS OF USE ARE OUTSIDE OUR CONTROL, WE MAKE NO WARRANTIES, EXPRESSED OR IMPLIED, AND ASSUME NO LIABILITY IN CONNECTION WITH YOUR USE OF THIS INFORMATION.

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