

MATERIAL SAFETY DATA SHEET

SECTION I – Product/Company Identification

1.1 Product Trade Name: **IRM® POWDER**
1.2 Part (Item) Number: 610007,610003
1.3 Division Name: DENTSPLY Caulk
1.4 Address: 38 West Clarke Avenue
City State Zip: Milford DE 19963-0359
1.5 Emergency Telephone Number: (800) 424-9300 (Chemtrec)
1.6 Telephone Number for Information: (302) 422-4511
1.7 Date Prepared: 9/20/95 Date Revised: 11/13/98

SECTION II - Hazardous Ingredients/Identity Information

Hazardous Components	OSHA PEL	ACGIH TLV
Zinc oxide	10 mg/mm ³	10 mg/mm ³

SECTION III - Physical/Chemical Characteristics

3.1 Boiling point:	N. A.	3.6 Specific Gravity:	5.7 g/cm ³
3.2 Vapor pressure:	N. A.	3.7 Melting Point:	N. A.
3.3 Vapor density:	N. A.	3.8 Evaporation rate:	N. A.
3.4 Solubility in water:	Not Soluble		
3.5 Appearance and odor:	Whitish powder with faint odor.		

SECTION IV - Fire and Explosion Hazard Data

4.1 Flash point (method used): N. A.
4.2 Flammability (explosive limits): N. A.
LEL: N. A. UEL: N. A.
4.3 Extinguishing media: Water, carbon dioxide, or dry chemical extinguishers.
4.4 Special fire fighting procedures: Avoid extinguishing methods, which may generate dust clouds. Water stream can disperse dust in air producing a fire hazard and possible explosion hazard if exposed to ignition source. Fire fighters should wear full protective clothing including self-contained breathing apparatus.
4.5 Unusual fire and explosion hazards: Polymer dust is combustible. The explosive limits of the polymer particles suspended in air are approximately those of coal dust.

SECTION V – Reactivity Data

5.1 Stability: Unstable: Stable: X
5.2 Conditions to avoid (stability): Excessive heat, greater than 50°C/122°F.
5.3 Incompatibility (materials to avoid): N. A.
5.4 Hazardous decomposition or byproducts: From the polymer – methylmethacrylate and carbon monoxide.
5.5 Hazardous polymerization: May occur: Will not occur: X
5.6 Conditions to avoid (polymerization): None.

SECTION VI - Health Hazard Data

- 6.1 Route(s) of entry: Inhalation: Yes Skin? Ingestion?: Possible
- 6.2 Health hazards (acute and chronic): It is not known to cause significant health problems. It is considered an inert or nuisance dust. Avoid inhalation of dust. Keep dust out of eyes to prevent possible irritation.
- 6.3 Carcinogenicity: NTP?: Not listed IARC monographs?: Not listed OSHA Regulated?: No
All components of this product are in compliance with the inventory listing requirements of the U. S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.
- 6.4 Signs and symptoms of exposure: Product may irritate the eyes and skin. Eye contact: Redness or irritation.
Skin contact: Redness or irritation.
- 6.5 Medical conditions generally aggravated by exposure: Open sores or wounds of the skin.
- 6.6 Emergency first aid procedures: Inhalation: Remove to fresh air. Eyes: In case of eye contact, flush with flowing water for 15 minutes, including under the eyelids and get medical attention. Skin: Flush with flowing water then wash area with mild soap and water. Ingestion: Rinse mouth with water. Consult a physician if amount was large.

SECTION VII - Precautions for Safe Handling and Use

- 7.1 Steps to be taken in case material is released or spilled: As with any nuisance dust, avoid excessive dusting. Sweep up spilled powder to avoid slipping hazard and place in an appropriately marked container. Keep airborne particulates to a minimum when cleaning up spills.
- 7.2 Waste disposal methods: Dispose of in accordance with Federal, State and Local regulations.
- 7.3 Precautions to be taken in handling and storage: Store in a cool, dry place away from food and beverages. Keep container closed to prevent water absorption and contamination.
- 7.4 Other precautions: Observe normal warehouse handling procedures.

SECTION VIII - Control Measures

- 8.1 Respiratory protection: None required during normal use of this product. Local ventilation or approved nuisance dust mask, if in large quantities.
- 8.2 Ventilation: Local exhaust recommended.
- 8.3 Protective gloves: Rubber gloves.
- 8.4 Eye protection: Safety glasses.
- 8.5 Other protective clothing or equipment: Rubber apron.
- 8.6 Work/Hygienic practices: Observe normal care when working with chemicals.

NFPA HAZARD CLASSIFICATIONS

Health	1
Flammability	0
Reactivity	0
Specific Hazard	N A

NFPA - National Fire Protection Association
N.A. - Not Applicable
N.E. - Not Established

MATERIAL SAFETY DATA SHEET

SECTION I – Product/Company Identification

1.1 Product Trade Name: **IRM[®] LIQUID**
1.2 Part (Item) Number: 610004, 610007
1.3 Division Name: DENTSPLY Caulk
1.4 Address: 38 West Clarke Avenue
City State Zip: Milford DE 19963-0359
1.5 Emergency Telephone Number: (800) 424-9300 (Chemtrec)
1.6 Telephone Number for Information: (302) 422-4511
1.7 Date Prepared: 9/20/95 Date Revised: 11/13/98

SECTION II - Hazardous Ingredients/Identity Information

Hazardous Components	OSHA PEL	ACGIH TLV
Eugenol	N A	N A
Acetic Acid	10 ppm	10 ppm

SECTION III - Physical/Chemical Characteristics

3.1 Boiling point: 254°C/489°F
3.2 Vapor pressure: 0.1 mm Hg@ 20°C
3.3 Vapor density: N. E.
3.4 Solubility in water: Slightly Soluble
3.5 Appearance and odor: Colorless or pale yellow liquid. Odor is oil of cloves.
3.6 Specific Gravity: 1.0 g/cm³
3.7 Melting Point: -9°C/-16°F
3.8 Evaporation rate: N. E.

SECTION IV - Fire and Explosion Hazard Data

4.1 Flash point (method used): Approximately 252°F closed cup
4.2 Flammability (explosive limits): N. E.
LEL: N.E. UEL: N.E.
4.3 Extinguishing media: Carbon dioxide, dry chemical or foam extinguishers.
4.4 Special fire fighting procedures: Fire fighters should wear full protective clothing including self-contained breathing apparatus. Cool containers exposed to flame with water.
4.5 Unusual fire and explosion hazards: None, Material is not pyrophoric, does not react with water, not oxygen donor, material is shock stable.

SECTION V – Reactivity Data

5.1 Stability: Unstable: Stable: X
5.2 Conditions to avoid (stability): Excessive heat greater than 37°C/100°F.
5.3 Incompatibility (materials to avoid): Keep separated from strong bases, and strong oxidizing agents. Ferric chloride and potassium permanganate
5.4 Hazardous decomposition or byproducts: Forms carbon monoxide and/or carbon dioxide upon burning.
5.5 Hazardous polymerization: May occur: Will not occur: X
5.6 Conditions to avoid (polymerization): None.

SECTION VI - Health Hazard Data

- 6.1 Route(s) of entry: **Inhalation?: Yes Skin?: Yes Ingestion?: Possible**
- 6.2 Health hazards (acute and chronic): **Liquid irritating to skin and eyes. Repeated contact may cause allergic dermatitis. Repeated daily oral doses of large amounts to rats caused liver damage. The effects in humans are unknown.**
- 6.3 Carcinogenicity: **NTP?: Not listed IARC monographs?: Not listed OSHA Regulated?: No**
All components of this product are in compliance with the inventory listing requirements of the U. S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.
- 6.4 Signs and symptoms of exposure: **Product may irritate the eyes and skin. Eye contact: Redness or irritation. Skin contact: Redness or irritation.**
- 6.5 Medical conditions generally aggravated by exposure: **Persons with known sensitization to eugenol. Open sores or wounds of the skin.**
- 6.6 Emergency first aid procedures: **Eyes: In case of eye contact, flush with flowing water for 15 minutes, including under the eyelids and get medical attention. Skin: Flush with flowing water then wash area with mild soap and water. Ingestion: Consult a physician.**

SECTION VII - Precautions for Safe Handling and Use

- 7.1 Steps to be taken in case material is released or spilled: **Soak material up by using sand or vermiculite, then scoop up material and place in a closed metal container.**
- 7.2 Waste disposal methods: **Dispose of in accordance with Federal, State and Local environmental regulations.**
- 7.3 Precautions to be taken in handling and storage: **Store in tight full containers, well sealed, protected from light. Do not expose to temperatures above 35°C.**
- 7.4 Other precautions: **Eugenol darkens and thickens upon exposure to air. Store away from food and beverages. Observe normal warehouse handling procedures.**

SECTION VIII - Control Measures

- 8.1 Respiratory protection: **None required during normal use of this product. Avoid casual breathing of vapors.**
- 8.2 Ventilation: **Local exhaust recommended.**
- 8.3 Protective gloves: **Rubber gloves.**
- 8.4 Eye protection: **Close fitting protective goggles.**
- 8.5 Other protective clothing or equipment: **Rubber apron.**
- 8.6 Work/Hygienic practices: **Observe normal care when working with chemicals.**

NFPA HAZARD CLASSIFICATIONS

Health	2
Flammability	1
Reactivity	0
Specific Hazard	N A

NFPA - National Fire Protection Association
N.A. - Not Applicable
N.E. - Not Established