

MATERIAL SAFETY DATA SHEET

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SECTION I – IDENTITY**Product Name:** Reactibond**Synonyms:** Cross – Linking Agent, Asphalt Cross Linking Agent**CAS No.:** Proprietary Mixture**Chemical Family:** CATALYST – CROSS LINKING AGENT**Purity:** 100%**Molecular Weight:** 996**SECTION II - HAZARDOUS INGREDIENTS****Ingredient:** Proprietary Mixture - Catalyst**Physical Form:** Grey Colored free flowing powder. Mesh size 18 to 25 mesh.**Threshold Limit:** N/A**SECTION III - PHYSICAL & CHEMICAL CHARACTERISTICS**

Boiling Point:	Not Applicable	Melting Point:	225°F/107°C
Specific Gravity:	0.63 kg/l = 5.26 lbs/gal = 39.34 lbs/cu.ft.	Vapor Pressure mm/Hg:	<1
Percent Volatile by Vol:	Nil	Vapor Density Air = 1:	1+
Flammable Limit:	Above 500°F	Solubility in Water:	Partially
Reactivity with Water:	None	Flash Point:	N/A
Evaporation Rate:	<1 as compared to BUAC	Auto-Ignite Temp:	Above 500°F
Appearance:	Grey Colored free flowing granules, mesh size 18-25 mesh	Odor:	Essentially Mild

Personal Protective Equipment: When handling Reactibond wear fully buttoned up overalls, socks and shoes with overall legging over shoes, arms fully covered by overall sleeves, PVC gloves, helmet and face shield to ensue product does not come into direct contact with skin, eyes and hair. However, when charging Reactibond into molten asphalt, always use vapor mask (activated charcoal filter mask) and goggles in addition to safety gear specified above because of fume emissions from hot asphalt.

Fire Extinguisher Media: Foam, dry chemical, CO₂ and vaporizing liquid types.

Special Fire Fighting Procedures: Use dry chemical, foam or carbon dioxide. Use water spray to keep fire-exposed containers cool. If a leak or spill has not ignited, use water spray to disperse the vapors and to provide protection for persons attempting to stop a leak. Water spray may be used to flush spills away from exposures. Minimize breathing gases, vapor, fumes or decomposition products. Use supplied-air breathing equipment for enclosed or confined spaces or as otherwise needed.

Unusual Fire and Explosion Hazards: Pressure will increase when over-heated in closed containers. Cool containers with water spray.

SECTION IV - NFPA RATINGS

**HEALTH = 1
FLAMMABILITY = 1
INSTABILITY = 1
SPECIAL HAZARDS = NONE**

Product is mildly corrosive (acidic)

SECTION V – TSCA STATEMENT

FINAL PRODUCT IS A REACTED MIXTURE OF ORGANIC AND INORGANIC SALTS AND ALL COMPONENTS ARE TSCA LISTED

SECTION V1 – TRANSPORTATION

PRODUCT IS SUPPLIED IN 37 LB POLYETHYLENE BAGS. Product is usually palletized and shrink wrapped to be secure during transportation and for ease of transportation.

Product is not restricted for transportation by Road, Rail, Waterways or Air. Ensure that the relevant local and national transportation regulations are fully complied with.

SECTION VII – PERSONAL PROTECTION EQUIPMENT

- (a) When handling the dry product as supplied, wear dust mask, fully buttoned up long sleeved overalls, shoes with socks and PVC apron and PVC gloves.**
- (b) When adding the product to hot asphalt for cross-linking in the laboratory, ensure that the blending/reaction vessel is located in a fume cupboard with adequate extraction. Wear dust mask, fully buttoned up long sleeved laboratory coat, long pants and socks and shoes and PVC gloves.**

(c) When handling the product on a plant production scale, the use of screw conveyor or some similar dosing/feeding mechanism is recommended and the usual precautions must be taken with regards to asphalt vapor emissions and where exposure to vapors are possible, appropriate gas mask (activated charcoal filter type) must be used. In addition employees must use fully buttoned up long sleeved overalls, shoes, socks, PVC apron and PVC gloves.

It is recommended that a formal HAZOP study is undertaken prior to the first introduction of the new material at any location.

SECTION VIII - PHYSICAL HAZARDS

Stability: Stable when stored under cover and away from direct sunlight and rain.

Polymerization: Product as supplied will not polymerize over time when stored as recommended. However, product is an active polymerization agent when added to polymers especially at temperatures above 150°F.

Incompatible Substances: Strong oxidants

Hazardous Decomposition Products: Partial burning produces fumes, smoke and carbon monoxide. Respirator must be worn before entering such smoke zone.

SECTION IX - HEALTH HAZARDS

Occupational Exposure Limits (TLV/TWA): 2 mg/m³ based on fumes for this class of products. However, note that fume emission levels not usually encountered until product is melted and mixed into asphalt. Note the vapor pressure and flash point data above.

Signs and Symptoms of Over Exposure: Dizziness, headache, respiratory irritation or unconsciousness

Medical Conditions Generally Aggravated by Exposure: Unknown

Carcinogen: Not known to be a Carcinogen

Skin and Eye Irritative Effects (Rabbit): Avoid contact by skin, ingestion, and eyes.

National Toxicology Program:	No	O.S.H.A.:	Unknown
O.S.H.A. Exposure Limit:	N/A	A.C.G.I.H. Threshold Limit:	N/A
I.A.R.C. Monograms:	No	Other Exposure Limit:	N/A

SECTION X - SPECIAL PROTECTION / FIRST AID PROCEDURES

EYES: Direct contact with eyes may cause severe irritation and may cause damage. Avoid direct eye contact – wear Goggles and preferably face shield.

SKIN: Contact may cause mild irritation. Avoid direct skin contact – Use PVC or Neoprene gloves and apron.

INHALATION: Coughing, choking, and variable symptoms of headache, dizziness, and weakness. Wear a dusk mask during handling and if handling in presence of asphalt vapors encountered, wear gas mask (activated charcoal type).

INGESTION: If accidentally ingested, may result in severe burning pain in the mouth, pharynx, and abdomen followed possibly by vomiting and diarrhea. Avoid ingestion and keep well away from foodstuff.

FIRST AID MEASURES

EYES: Flood eyes with copious amounts of flowing water for at least 20 minutes. Seek immediate medical attention and treatment by a medical professional. Note to Physician: Product is mildly acidic and corrosive – treat symptomatically. No not rub eyes and powder may scratch cornea and cause damage.

SKIN: Remove contaminated clothing. Thoroughly flush the skin with cold water for at least 20 minutes. Seek medical treatment if irritation persists. Treat symptomatically.

INHALATION: Immediately move the patient to fresh air, render oxygen and call Emergency Response. If breathing is difficult, continue administration of Oxygen. If not breathing, begin artificial respiration and seek immediate symptomatic treatment by a medical professional.

INGESTION: In the unlikely event of ingestion, give the patient 2 glasses of cold milk (12 to 16 oz.) and call a doctor. Never give anything by mouth to an unconscious person. Induce vomiting only at the instructions of a doctor or medical professional.

SECTION XI - SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES

Precautions to be taken in Handling and Storage: Use product with caution around heat, sparks, static electricity and open flame. Store under cover and at temperatures not exceeding 90°F.

Precautions to be taken in case of a Spill or Leak: Remove ignitions sources. Keep people away. Recover solids and any contaminated liquids and scrape up any solidified material. Add absorbent (sand, sawdust, etc.) to liquid spill area. Minimize breathing of fumes by wearing appropriate vapor mask. Ventilate confined spaces. Open all windows and doors. Advise authorities if product enters sewers or any waterways.

Waste Disposal Procedures: Assure conformity with applicable disposal regulations. Dispose of absorbed material at approved waste site in a lined and water tight land fill that is at least 5 miles away from any water body (canals, rivers, dams, etc)

Reportable Quant.(RQ), EPA Reg. 40, CFR 302:	N/A
Threshold Planning Quant.(TPQ), EPA Reg.40, CFR 355:	N/A
Toxic Chem. Release Reporting, EPA Reg.40, CFR 372:	N/A
EPA Hazard Classification Code:	N/A

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