MD-BOTH INDUSTRIES
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MATERIAL SAFETY DATA SHEET

Date MSDS Prepared: 3/4/2004
Date MSDS Printed: 3/4/2004
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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Identity
Product Name: **Decomet 1050/10**
Product type: Passivated aluminum powder dispersed in mostly water

Company
MD-Both Industries, 40 Nickerson Rd., Ashland, MA 01721
Phone: (508) 881-4100

Emergency Telephone Number: CHEMTREC 800-424-9300 24 hours everyday

2. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

This product contains no toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning & Community Right-To-Know Act of 1986 and 40 CFR 372:

This product contains the following hazardous ingredients:

Hazardous Ingredient(s)	CAS Number	% by weight
Aluminum	7429-90-5	9-11
Isopropanol	67-63-0	

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
Gray slurry.
Aluminum powder may be ignited by static discharge and burn at extremely high temperature.
Once suspended in air forming a dust cloud, it is readily ignited and highly explosive.
Do not use water to clean up spills. Use non-sparkling tools for clean up or natural bristle broom.
Reacts violently with halogenated hydrocarbons, alkalis, and oxidizers to produce heat.
Aluminum is a nuisance dust.

Ratings

Health: 0
Flammability: 1
Reactivity rating: 1
Contact rating: 0

Potential Health Effects

Eye
Low hazard for normal handling

Skin
Low hazard, however cases of skin sensitization has been reported

Swallowing
Low hazard

Inhalation
Low hazard

Cancer Information
There is no information available. The chance of this material causing cancer is unknown. This material is not listed as a carcinogen by the International Agency for Research on Cancer, the National Toxicology Program, or the Occupational Safety and Health Administration.

Other Health Effects
No data

Primary Route(s) of Entry
Inhalation, Skin absorption, Skin contact, Eye contact, ingestion.

4. FIRST AID MEASURES

Eyes
If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

Skin
Remove contaminated clothing. Wash exposed area with soap and water. if symptoms persist, seek medical attention. Launder clothing before reuse.

Swallowing
Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

Inhalation
If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. if person is not breathing, begin artificial

respiration. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

Note to Physicians
Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: skin, lung (for example, asthma-like conditions), kidney.

5. FIRE FIGHTING MEASURES

Flash Point

Explosive Limit
N/A—% of ignitable organic solvent in this product is low; however, hydrogen, which forms an explosive mixture with air, may start evolving at high temperature from the reaction between water and aluminum in the slurry.
The aluminum in the slurry will be ignitable if the liquid in the slurry is completely dried out. See the "Fire and Explosion Hazards" section below below.

Autoignition Temperature

Hazardous Products of Combustion
May form: carbon dioxide and carbon monoxide, aluminum oxide

Fire and Explosion Hazards
Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively. If liquid in the slurry has completely burned out, a powder fire may result.

Extinguishing Media
Dry sand, carbon dioxide, dry chemical. Do not use halogenated extinguishing agents or water. If liquid in the slurry has completely burned out, a powder fire may result. For powder fires, surround fire with dry sand. Avoid draft and allow fire to burn itself out. Wear self-contained breathing apparatus for fighting fires. Extinguish or contain with dry sand or low pressure powder extinguishers specifically formulated for metal fires. In the very early stages of a fire, carbon dioxide extinguishers may be used, however, extreme care must be taken as aluminum powder can cause explosive dust clouds.

Fire Fighting Instructions
Vapors from paste may form explosive mixture with air. Dust clouds may be ignited by static discharge and burn at extremely high temperature. Aluminum dust is explosive over a fairly wide range of mass loadings, depending on particle size, surface area, and other factors. Wear a self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode with appropriate turnout gear and chemical resistant personal protective equipment. Refer to the personal protective equipment section of this MSDS.

6. ACCIDENTAL RELEASE MEASURES

Leak and Spill Procedures:

All spills should first be cleaned by scooping and mild brushing.
Cleaning should be done with a soft brush or sponge, and pickup should be with non-sparking conductive scoops. Synthetic fiber bristle brush and plastic, or other non-conductive scoops should not be used because of their tendency to accumulate strong static charges. Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks, etc.). Persons not wearing protective equipment should be excluded from the area of the spill until clean-up has been completed. Stop spill at source, dike area of spill to prevent spreading. Remaining paste may be taken up with sand or shoveled into containers. Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities, as required, that the spill has occurred. Vapors from paste may form explosive mixtures with air. If solvents evaporate from paste, avoid action that would create a dust-laden cloud or cause powder to disperse in air. If vacuum cleaner is used, its piping, suction hose, and tools should be electrically conductive and should be grounded to prevent static electric sparks. Only vacuum cleaners specifically approved for use with reactive combustible metal dust should be used. Standard commercial industrial vacuum cleaners should not be used, as they are not safe with combustible metals. The vacuum system's electrical equipment should be suitable for Class II, Group E and Class I, Group D locations.

7. HANDLING AND STORAGE

Handling

Container should be bonded and grounded for transfers to avoid static sparks. Use non-spark type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty due to product residue. Observe all warnings and precautions listed for the product. Handle in No Smoking areas only.

Storage

Store in a clean dry place, at a temperature below 120 F. Keep the container covered at all times other than for removing product. Do not store in areas containing flammable liquids or other combustible materials. Store in No smoking area only.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection

Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. Consult your safety representative. Maintain eye wash fountain and quick drench facilities in work area.

Skin Protection

Wear resistant gloves (consult your safety equipment supplier)., To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

Respiratory Protections

If workplace exposure limit(s) of product or any component is exceeded (see exposure guidelines), a NIOSH/MSHA approved air supplied respirator is advised in the absence of proper environmental control.

OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions (see your industrial hygienist). Engineering or administrative controls should be implemented to reduce exposure.

Engineering Controls
Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s).

Exposure Guidelines
Components
ALUMINUM (7429-90-5)
OSHA: 5mg/m3 respirable TWA
ACGIH: 5mg/m3 fume TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point
(for product) 212 F (100 C) @ 760 mmHg

Vapor Pressure
(for product) 23 mbar @ 68.00 F

Specific Gravity
1.1 @ 60.00 F

Percent Volatiles
90.0 %

Volatile Organic Compounds (VOC)
5.0 %

Evaporation Rate

Appearance
Grayish silver slurry

Odor
Alcohol

pH
No data

Freezing Point
32 F (0 C)

Solubility in Water
Liquid components are totally miscible/soluble in water

10. STABILITY AND REACTIVITY

Chemical Stability
Stable under normal conditions of use. Stable under 120 F.

Conditions of Reactivity:
When heated, aluminum powder oxidizes at a temperature dependent rate. It reacts violently with halogenated hydrocarbons, with oxidizers to produce heat, and with water to slowly generate heat and hydrogen. It reacts with mineral acids and strong alkalis to form hydrogen gas.

Hazardous Polymerization
Product will not undergo hazardous polymerization.

Hazardous Decomposition
May form: carbon dioxide and carbon monoxide, aluminum oxide.

Incompatibility
Avoid contact with: acetaldehyde, strong acids or alkalis, chlorine, ethylene oxide, isocyanates strong oxidizing agents

11. TOXICOLOGICAL INFORMATION

Cancer List:

Ingredient	NTP carcinogen, Known	NTP carcinogen, Anticipated	IAPC
Water	No	No	No
Isopropyl alcohol	No	No	No
Aluminum	No	No	No

12. ECOLOGICAL INFORMATION

No data

13. DISPOSAL CONSIDERATION

Waste Management Information
This material is not listed as a hazardous waste RCRA.
Dispose of in accordance with all applicable local, state and federal regulations.

14. TRANSPORT INFORMATION

DOT Status: not regulated

15. REGULATORY INFORMATION

OSHA Process Safety Standard

This material is not known to be hazardous as defined by OSHA's Highly Hazardous Process Safety Standard, 29 CFR 1910.119

TSCA
The intentional ingredients of this product are listed.

CERCLA Reportable Quantity:
N/A

SARA Title III
This product contains the following chemicals in greater than the minimus quantities which are subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372.

Component	Maximum %
Aluminum (reportable only in dust or mist forms)	10.0
Water	85.0
Isopropyl alcohol	5.0

State and Local Regulations
California Proposition 65
None

New Jersey
The following components are listed on the special Health Hazard Substance List (SHHSL): None
The following components are listed on the special Health Hazard Substance List (EHSL): Aluminum, CAS number 7429-90-5, maximum % = 10.0

Pennsylvania
The following components are listed as Special Hazardous Substances: None
The following substances are listed as Environmental Hazards:
Aluminum, CAS number 7429-90-5, maximum % = 10.0
Proppylene glycol, CAS number 000057-55-6), maximum % = 90.0

16 OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.