

Aluminum Oxide - Lightning Paper™

MSDS Number: 151A

Revision Date: 5/19/2015

Page 1 of 8

1 PRODUCT AND COMPANY IDENTIFICATION

Manufacturer

Johnson Abrasives
49 Fitzgerald Drive
Jaffrey, NH 03452

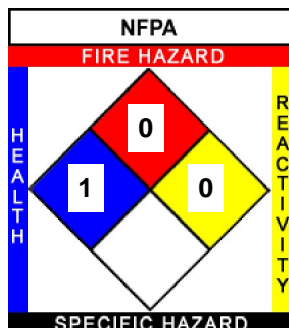
Contact: Johnson Abrasives
Phone: +1-603-532-4434
Fax: +1-603-532-4436
Web: www.johnsonabrasives.com

Product Name: Aluminum Oxide - Lightning Paper™
Revision Date: 5/19/2015
Version: 1
MSDS Number: 151A
CAS Number: MIXTURE
Product Use: Abrasive Product
Emergency Phone: +1-800-642-4265 or +1-603-532-4434

2 HAZARDS IDENTIFICATION

NFPA:
HMIS III:

Health = 1, Fire = 0, Reactivity = 0
H*1/F0/PH0



| HMIS III | |
|---|---|
| HEALTH | 1 |
| FLAMMABILITY | 0 |
| PHYSICAL HAZARDS | 0 |
| PERSONAL PROTECTION E Safety Glasses, Gloves, Dust Respirator | |

| PERSONAL PROTECTION INDEX | | | |
|---------------------------|------------------------|------------------------------|---|
| A | ☒ | G | ☒ + ☒ + ☒ |
| B | ☒ + ☒ | H | ☒ + ☒ + ☒ + ☒ |
| C | ☒ + ☒ + ☒ | I | ☒ + ☒ + ☒ |
| D | ☒ + ☒ + ☒ | J | ☒ + ☒ + ☒ + ☒ |
| E | ☒ + ☒ + ☒ | K | ☒ + ☒ + ☒ + ☒ |
| F | ☒ + ☒ + ☒ + ☒ | X | Consult your supervisor or S.O.P. for "SPECIAL" handling directions |
| A | n | o | p |
| Safety Glasses | Splash Goggles | Face Shield & Eye Protection | Gloves |
| q | r | s | |
| Boots | Synthetic Pajama | Full Suit | |
| t | u | w | y |
| Dust Respirator | Vapor Respirator | Dust & Vapor Respirator | Full Face Respirator |
| z | Additional Information | | |
| Airline Hood or Mask | | | |

GHS Signal Word:
WARNING

GHS Classifications:
Health, Serious Eye Damage/Eye Irritation, 2 B

GHS Phrases:
H320 - Causes eye irritation

GHS Precautionary Statements:
P261 - Avoid breathing dust produced while using this product.
P264 - Wash face, hands and any exposed skin thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.

Aluminum Oxide - Lightning Paper™

MSDS Number: 151A

Revision Date: 5/19/2015

Page 2 of 8

- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P285 - In case of inadequate ventilation wear respiratory protection.
P304+341 - IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338 - IF IN EYES: Do NOT rub. Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P337+313 - If eye irritation persists: Get medical advice/attention.
P342 - If experiencing respiratory symptoms: Get medical advice/attention.
P402 - Store in a dry place.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

| Cas # | Percentage | Chemical Name |
|-----------|------------|--|
| 1344-28-1 | 0-50% | Natural Aluminum oxide (Al ₂ O ₃), Corundum |
| 9003-35-4 | 5-30% | Cured Resin, Phenol-Formaldehyde polymer |
| 9011-05-6 | 10-30% | Cured Resin, Urea-Formaldehyde polymer |
| 1317-65-3 | 0-25% | Limestone |
| 1332-58-7 | 0-15% | Kaolin Clay |
| N/A | 0-30% | Cotton or Polyester Cloth, Mesh or Paper Backing |

4 FIRST AID MEASURES

- Inhalation:** Blow nose to remove substance from nasal passages. Give oxygen or artificial respiration if needed. If symptoms develop, move victim to fresh air. If symptoms persist, obtain medical attention.
- Skin Contact:** No need for first aid is anticipated for non-abrasive exposure to product. If reddening develops and/or persists, obtain medical attention.
- Eye Contact:** Do NOT rub eyes. Flush with large amounts of water for at least 15 minutes, lifting upper and lower lids occasionally. If irritation persists, obtain medical attention.
- Ingestion:** No need for first aid is anticipated. If symptoms develop, obtain medical attention.

Most important symptoms and effects, both acute and delayed:

The most important known symptoms and effects are described in the labelling (see Section 2) and/or Section 11.

Indication of any immediate medical attention and special treatment needed:

No data available.

5 FIRE FIGHTING MEASURES

| | |
|----------------------------|-------------------|
| Flammability: | Not classified |
| Flash Point: | DNA |
| Flash Point Method: | DNA |
| Burning Rate: | No data available |
| Autoignition Temp: | No data available |
| LEL: | DNA |
| UEL: | DNA |

Product is flammable when exposed to direct flame. During proper, recommended use of this product, no flammability hazard exists.



Aluminum Oxide - Lightning Paper™

MSDS Number: 151A

Revision Date: 5/19/2015

Page 3 of 8

Extinguishing Media:

Water Spray
Carbon Dioxide
Alcohol-Resistant Foam
Dry Chemical

Special Hazards Arising From the Substance or Mixture:

Aluminum Oxides
Calcium Oxides
Carbon Oxides
Nitrogen Oxides (NOx)
Silicon Oxides

Advice for Firefighters:

Firefighters should wear full-face, positive-pressure respirators.

Further Information:

If incinerated, may release toxic fumes.
Do not use halocarbon extinguishers on fire.
See Section 7 for more information on safe handling.
See Section 8 for more information on personal protection equipment.

6

ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment, including dust respirator.
Avoid breathing dust.
Ensure adequate ventilation.

Environmental precautions:

No special environmental precautions required.

Methods and materials for containments and cleaning up:

Pick up and arrange disposal without creating dust.
Sweep up, shovel or collect spillage and place material into suitable container for disposal.
Inspect product for torn or damaged areas. Do not use if product is torn or damaged.
Dispose of contaminated material according to Section 13.
Ensure adequate ventilation.

Reference to other sections:

See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for information on proper disposal.

Aluminum Oxide - Lightning Paper™

MSDS Number: 151A

Revision Date: 5/19/2015

Page 4 of 8

7 HANDLING AND STORAGE

Handling Precautions:

Ensure adequate ventilation.
Avoid breathing of dust created while sanding, grinding or machining - use dust respirator while using product.
Avoid contact with skin, eyes and clothing.
Damaged product can break apart during use and cause serious bodily injury, specifically to the eyes - use safety glasses while using product.
Check product for damages such as tears or cracks prior to use. Do not use damaged product.
Comply with RPM rating specified on this product.
Comply with ANSI B7.1-2010 Safety Requirements for the Use, Care and Protection of Abrasive Wheels (if applicable).
Combustible dust may be formed as a result of using this product. Take care to not let generated dust accumulate.
Accumulated dust may present an explosive hazard when dispersed in sufficient concentration while near an ignition source.
Collect dust and dispose of regularly.

Storage Requirements:

Keep away from heat, sparks and flames.
Store in a dry place - keep away from moisture.
Store at temperatures between 40-90 °F at 30-80% relative humidity.
Store away from strong acids, strong bases, strong oxidizing agents, Chlorine Trifluoride, Ethlene Oxide, Halogenated Hydrocarbons, Oxygen Difluoride, Sodium Nitrate, Vinyl compounds, Nitrates, pure Aluminum, Magnesium and Halogens.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94). Use local exhaust at filling zones and where leakage and dust formation is probable. Use mechanical (general) ventilation for storage areas. Use appropriate ventilation as required to keep Exposure Limits in Air below TLV & PEL limits.

Personal Protective Equip:

Eye/face protection:
When using material use safety glasses, gloves, and dust respirator according to HMIS PP, E. All safety equipment should be tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin protection:

Handling material with gloves is not required, but strongly recommended in order to prevent accidental secondary contact with eyes. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact. Dispose of contaminated gloves according to applicable laws and practices.

Body Protection:

Safety glasses, gloves and dust respirator are recommended. Type of protective equipment should be selected based on ventilation conditions and other conditions of use of this material.

Respiratory protection:

Use a NIOSH/MSHA dust mask according to 24 CFR 1910.134. Full-face dust respirator may be required as backup to engineering controls when proper engineering controls are not in place to keep TLV and PEL limits below defined thresholds.

Control of environmental exposure:

Aluminum Oxide - Lightning Paper™

MSDS Number: 151A

Revision Date: 5/19/2015

Page 5 of 8

No special requirements are necessary.

Components with workplace control parameters:

Component(s): Natural Aluminum oxide (Al₂O₃), Corundum; Limestone; Kaolin Clay
CAS No(s): 1344-28-1; 1317-65-3; 1332-58-7
USA OSHA Occupational Exposure Limits Table Z-1 Limits for Air Contaminant (TWA): 15.0 mg/m³ (as total dust)
USA OSHA Occupational Exposure Limits Table Z-1 Limits for Air Contaminant (TWA): 5.0 mg/m³ (as respirable fraction)
USA OSHA Table Z-1 Limits for Air Contaminants - 1910-1000 (TWA): 10.0 mg/m³ (as total dust)
USA OSHA Table Z-1 Limits for Air Contaminants - 1910-1000 (TWA): 5.0 mg/m³ (as respirable fraction)
USA ACGIH (TWA/TLV): 1.0 mg/m³
USA CMRG (TWA/TLV): 1.0 fiber/cm³
USA NIOSH (TWA): 10.0 mg/m³ (as total dust)
USA NIOSH (TWA): 5.0 mg/m³ (as respirable fraction)

Biological occupational exposure limits:

Contains no substances with biological occupational exposure limits values.

9 PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-------------------------------|--|------------------------------|---------|
| Appearance: | Cloth, paper or screen coated with abrasive material | Odor: | Faint |
| Physical State: | Solid | Molecular Formula: | MIXTURE |
| Odor Threshold: | DNA | Solubility: | DNA |
| Particle Size: | DNA | Softening Point: | DNA |
| Spec Grav./Density: | DNA | Percent Volatile: | DNA |
| Viscosity: | DNA | Heat Value: | DNA |
| Sat. Vap. Conc.: | DNA | Freezing/Melting Pt.: | DNA |
| Boiling Point: | DNA | Flash Point: | DNA |
| Flammability: | (solid, gas): Not classified | Octanol: | DNA |
| Partition Coefficient: | DNA | Vapor Density: | DNA |
| Vapor Pressure: | DNA | VOC: | DNA |
| pH: | DNA | Bulk Density: | DNA |
| Evap. Rate: | DNA | Auto-Ignition Temp: | DNA |
| Molecular weight: | DNA | UFL/LFL: | DNA |
| Decomp Temp: | DNA | | |

10 STABILITY AND REACTIVITY

| | |
|----------------------------------|--|
| Stability: | Product is stable under normal conditions. |
| Conditions to Avoid: | Incompatibilities, flames, ignition sources and moisture. |
| Materials to Avoid: | Strong acids, strong bases, strong oxidizing agents, Chlorine Trifluoride, Ethlene Oxide, Halogenated Hydrocarbons, Oxygen Difluoride, Sodium Nitrate, Vinyl compounds, Nitrates, pure Aluminum, Magnesium and Halogens. |
| Hazardous Decomposition: | Aluminum Oxides, Calcium Oxides, Carbon Oxides, Nitrogen Oxides (NO _x) and Silicon Oxides. |
| Hazardous Polymerization: | Will not occur. |

11 TOXICOLOGICAL INFORMATION



Safety Data Sheet (SDS)

Johnson Abrasives

Aluminum Oxide - Lightning Paper™

MSDS Number: 151A

Revision Date: 5/19/2015

Page 6 of 8

Component(s): Natural Aluminum oxide (AL₂O₃), Corundum; Cured Resin, Phenol-Formaldehyde polymer; Cured Resin, Urea-Formaldehyde polymer; Limestone; Kaolin Clay

CAS No(s): 1344-28-1; 9003-35-4; 9011-05-6; 1317-65-3; 1332-58-7

Acute Toxicity:

LD50 Oral - Rat: > 2,900 mg/kg

LD50 Dermal - Rabbit: > 20,800 mg/kg

LC50 Inhalation - Rat: > 2.3 mg/l (4 h)

Skin Corrosion/Irritation: The product itself does not present hazards when used correctly. Mechanical irritation (abrasion) may cause skin irritation.

Serious Eye Damage/Eye Irritation: The product itself does not present hazards. Dust created by grinding, sanding or machining may cause eye irritation.

Respiratory or Skin Sensitation: Skin allergy was observed in humans and guinea pigs following repeated exposure to this material. Certain sensitive individuals may experience allergy symptoms following prolonged, repeated skin contact with this material.

Germ Cell Mutagenicity: No data available.

Carcinogenicity: This product is or contains a component that is classifiable as to its carcinogenicity by the IARC, ACGIH, NTP or OSHA (Kaolin Clay).

IARC: 1 - Group 1: Carcinogenic to humans (Kaolin Clay).

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: Known to be a human carcinogen (Kaolin Clay).

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive Toxicity: No data available.

Specific Target Organ Toxicity - Single Exposure: Respiratory system: The product itself does not present hazards. Dust created by grinding, sanding or machining may cause respiratory irritation.

Specific Target Organ Toxicity - Repeated Exposure: Respiratory system: Data that exists is not sufficient for classification. Prolonged occupational exposure may be related to pneumoconiosis and/or pulmonary fibrosis.

Aspiration Hazard: No data available.

Additional Information:

Component: Natural Aluminum oxide (AL₂O₃), Corundum; RTECS: BD1200000

Component: Cured Resin, Phenol-Formaldehyde polymer; RTECS: SM8542500

Component: Cured Resin, Urea-Formaldehyde polymer; RTECS: YU1610000

Component: Limestone; RTECS: FF9335000

Component: Kaolin Clay; RTECS: GF1670500



Aluminum Oxide - Lightning Paper™

MSDS Number: 151A

Revision Date: 5/19/2015

Page 7 of 8

12 ECOLOGICAL INFORMATION

Component(s): Natural Aluminum oxide (AL₂O₃), Corundum; Cured Resin, Phenol-Formaldehyde polymer; Cured Resin, Urea-Formaldehyde polymer; Limestone; Kaolin Clay

CAS No(s): 1344-28-1; 9003-35-4; 9011-05-6; 1317-65-3; 1332-58-7

Toxicity:

Toxicity to fish:

No data available.

Toxicity to daphnia and other aquatic invertebrates:

No data available.

Persistence and Degradability:

No data available.

Bioaccumulative potential:

No data available.

Mobility in Soil:

No data available.

Results of PBT and vPvB assessment:

Not required/conducted.

Other Adverse Effects:

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

13 DISPOSAL CONSIDERATIONS

Product: Hazardous wastes shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution, release into the environment or damage to people and animals. Contact a licensed professional waste disposal service to dispose of this material. Consult all applicable authorities and regulations to ensure proper classification. Any abraded material remaining on used product (from the substrate being abraded) may need to be considered as a factor in the disposal classification, method or handling of used product.

Contaminated Packaging: Dispose of as unused product.

14 TRANSPORT INFORMATION

DOT (US)

Non-regulated material

IMDG

Non-regulated material

IATA

Non-regulated material

IMO



Safety Data Sheet (SDS)

Johnson Abrasives

Aluminum Oxide - Lightning Paper™

MSDS Number: 151A

Revision Date: 5/19/2015

Page 8 of 8

Non-regulated material

15 REGULATORY INFORMATION

COMPONENT / (CAS/PERC) / CODES

*Natural Aluminum oxide (Al₂O₃), Corundum (1344281 0-50%) MASS, NJHS, OSHAWAC, PA, SARA313, TSCA, TXAIR

*Cured Resin, Phenol-Formaldehyde polymer (9003354 5-30%) TSCA

*Cured Resin, Urea-Formaldehyde polymer (9011056 5-30%) TSCA

*Limestone (1317653 0-25%) MASS, NJHS, OSHAWAC, PA, TSCA, TXAIR

*Kaolin Clay (1332587 0-15%) MASS, NJHS, OSHAWAC, PA, PROP65, SARA311/312, TSCA, TXAIR

REGULATORY KEY DESCRIPTIONS

MASS = MA Massachusetts Hazardous Substances List

NJHS = NJ Right-to-Know Hazardous Substances

OSHA = OSHA workplace Air Contaminants

PA = PA Right-To-Know List of Hazardous Substances

PROP65 = CA Prop 65

SARA311/312 = SARA 311/312 Toxic Chemicals

SARA313 = SARA 313 Title III Toxic Chemicals

TSCA = Toxic Substances Control Act

TXAIR = TX Air Contaminants with Health Effects Screening Level

16 OTHER INFORMATION

Disclaimer:

The data in this Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material in any process. The information set forth herein is furnished free of charge and is based on technical data that Johnson Abrasives believes to be reliable. It is intended for use by persons having technical skill and at their own discretion and risk. Since conditions of use are outside of Johnson Abrasives' control, Johnson Abrasives makes no warranties, expressed or implied, and assumes no liability in connection with any use of this information. Nothing herein is to be taken as a license to operate under, or a recommendation to infringe upon, any patents.

Preparation Information:

GHS Conversion Services
www.ghsconversionservices.com
(414) 336-2546
(669) 236-0304