



ABRASIVOS S.A.
LIMA - PERU

SECTION I - NAME AND PRODUCT

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|--|--------------------------------|--|
| MANUFACTURERS NAME: ABRASIVOS S.A. | Contact: E. Bernasconi: | Emergency Telephone #: (650) 325 1997 |
| ADDRESS: TOMAS ALVA EDISON 168 URB IND SANTA ROSA LIMA PERU | Approved by: E. Bernasconi: | Date: Oct 1, 2001 |

DEC 19 2001

TRADE NAME, COMMON NAME OR SPECIFICATION:
Coated Abrasive Products

PRODUCT TYPE:

Aluminum Oxide, Gamet, Silicon Carbide, Zirconia-Alumina, Quartz. - Coated with a backing of cloth, paper or vulcanized fibre using rice glue or phenolic resin.

SECTION II - COMPOSITION MAY CONTAIN ONE OR MORE OF THE FOLLOWING

| CHEMICAL COMPOSITION | COMMON NAME | OSHA REG. (YES/NO) | GAS # | OSHA PERMISSIVE EXPOSURE LIMIT | ACH/H TLV | CARCINOGEN (YES/NO) |
|---|--------------------------------------|--------------------|------------|--------------------------------|-----------|---------------------|
| * Al ₂ O ₃ | Aluminum Oxide | Y | 1344-28-1 | 15mg/M3 | 10mg/M3 | N |
| - SiC | Silicon Carbide | Y | 409-21-2 | 15mg/M3 | 10mg/M3 | N |
| Al ₂ O ₃ -ZrO ₂ | Zirconia Alumina | Y | 7440-67-7 | 15mg/M3 | 10mg/M3 | N |
| Na ₂ AlF ₆ | Cryolite | Y | 15096-52-3 | N/A | N/A | N |
| KBF ₄ | Potassium Fluoroborate | Y | 14075-53-7 | N/A | N/A | N |
| CaO | Cured Phenolic Resin | Y | 60304-38-1 | N/A | N/A | N |
| Zn(C ₁₈ H ₃₅ O ₂) ₂ | Calcium Oxide | Y | 1305-78-8 | 2mg/M3 | N/A | N |
| SiO ₂ | Zinc Stearate | Y | 557-05-01 | N/A | 10mg/M3 | N |
| Complex (SiO ₂ , FeO, Al ₂ O ₃) | Quartz (crystalline silicon dioxide) | Y | 14808-60-7 | 10mg/M3 | 0.1mg/M3 | N |
| | Gamet (Almandite) | Y | | 15mg/M3 | N/A | N |

Materials are regulated by OSHA 29 CFR 1910.1200 Hazard Communication Standard

SECTION III - PHYSICAL AND CHEMICAL DATA

| | | |
|-----------------------|------------------------------|----------------------------|
| BOILING POINT: N/A | MELTING POINT: N/A | SPECIFIC GRAVITY: N/A |
| VAPOR PRESSURE N/A | PERCENT VOLATILE BY VOL: N/A | VAPOR DENSITY: N/A |
| EVAPORATION RATE: N/A | SOLUBILITY IN WATER: N/A | SOLUBILITY IN ALCOHOL: N/A |

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

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|--|------------------------|
| FLASH POINT: N/A | METHOD USED: N/A |
| FLAMMABLE ELEMENTS: LEV: N/A | UEL: N/A |
| EXTINGUISHING MEDIA: Any proper fire-fighting material can be used | HEALTH: 1 |
| SPECIAL FIRE FIGHTING PROC. Use respiratory protection. Backings and resin binders will burn and/or decompose | FLAMMABILITY: 0 |
| EXPLOSION POTENTIAL: N/A | REACTIVITY: 0 |
| | PERSONAL PROTECTION: C |

NFPA RATINGS

SECTION V - HEALTH, FIRST AID & MEDICAL DATA

| PRIMARY ROUTE(S) OF ENTRY | ACUTE & CHRONIC HEALTH EFFECTS & EFFECTS OF OVEREXPOSURE | FIRST AID AND MEDICAL INFORMATION |
|------------------------------|---|--|
| INHALATION (DUST) | ACUTE-MAY CAUSE COUGHING SHORTNESS OF BREATH CHRONIC-MAY AFFECT BREATHING CAPACITY NOT KNOWN ADVERSE EFFECTS BUT INGESTION NOT RECOMMENDED. | REMOVE TO FRESH AIR, APPLY ARTIFICIAL RESPIRATION AS NEEDED, OBTAIN FIRST AID OR MEDICAL ASSISTANCE. OBTAIN FIRST AID OR MEDICAL ASSISTANCE, IF NEEDED. |
| INGESTION | | |
| SKIN | NOT ABSORBED THROUGH SKIN; MAY CAUSE ABRASIONS | OBTAIN FIRST AID OR MEDICAL ASSISTANCE IF NEEDED |
| EYE CONTACT | DUST MAY IRRITATE EYES | WASH WITH LARGE AMOUNT OF WATER. OBTAIN MEDICAL ASSISTANCE, IF NEEDED OBTAIN MEDICAL ASSISTANCE |
| OTHER POTENTIAL HEALTH RISKS | DURING USE ON SOME MATERIALS ELEVATED SOUND LEVELS MAY BE CREATED WHICH AFFECT HEARINGS. | |

SECTION VI - CORROSIVITY AND REACTIVITY DATA

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|--------------------------------------|---|
| STABILITY: | STABLE <input checked="" type="checkbox"/> UNSTABLE <input type="checkbox"/> |
| POLYMERIZATION: | MAY OCCUR <input type="checkbox"/> WILL NOT OCCUR <input checked="" type="checkbox"/> |
| INCOMPATIBILITY: (Material to Avoid) | N/A <input type="checkbox"/> NONE <input type="checkbox"/> |
| CONDITIONS TO BE AVOIDED: | |
| DECOMPOSITION PRODUCTS: | In use, dust and decomposing resin system fumes are generated. In most cases, the material removed from the work piece will be significantly greater than the coated abrasive product components. |

SECTION VII - STORAGE, HANDLING AND USE PROCEDURES

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|-----------------------------|---|
| NORMAL STORAGE HANDLING: | Handle with adequate ventilation. See OSHA 29CFR1910.94 (Ventilation) and OSHA 29CFR 1910.1000 (Air contaminants) |
| NORMAL USE: | Handle with adequate ventilation. See OSHA 29CFR1910.94 (Ventilation) and OSHA 28CFR 1910.1000 (Air contaminants) |
| IN CASE OF LEAKS OF SPILLS: | Normal clean up procedures. Vacuum dust |
| WASTE DISPOSAL METHOD: | Standard landfill methods consistent with applicable Federal, State and Local Laws |

SECTION VIII - PERSONAL PROTECTION INFORMATION

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|---|---|
| RESPIRATORY/PROTECTION: | As needed, approved dust respirator OSHA 24 CFR 1910-134, NOISH/MSHA |
| VENTILATION: | LOCAL: Recommended MECHANICAL: Recommended |
| PROTECTIVE GLOVES: | Leather gloves as desired by user. |
| EYE PROTECTION: | Recommend OSHA 29 CFR 1910.133 (Face and Eye Protection) |
| OTHER EQUIPMENT: | As needed, hearing protection - OSHA 29CFR 1910.215 (Hearing Protection) All recommendations as per ANSI 37.1 Safety Guidelines. |
| MEASURES TO BE TAKEN DURING REPAIR AND MAINTENANCE OF CONTAMINATED EQUIPMENT THAT HAS BEEN IN CONTACT WITH THIS MATERIAL: | No special precautions necessary. |
| SAFETY ON SANDING MACHINES: | See: OSHA 29 CFR 1910.213 (p) (1,2,3&4) OSHA 29CFR 1910.243 (e) (3) |

ASA ABRASIVOS S.A
Safety (MSDS)

SECTION I - NAME AND PRODUCT

| | | |
|--|--------------------------|---|
| MANUFACTURERS NAME: ABRASIVOS S.A. | Contact: H. Fernández | Emergency Telephone: (051-1) 326-4856 |
| ADDRESS: Jr. Tomás Alva Edison 168, Urb. Industrial Santa Rosa, Ate Lima 3. P.O. BOX 41039 Lima - PERU | Approved by: L. Roca | Date: Set. 27, 2006 |

Coated abrasives are inert products which do not create any risk when handled or stored. When used on motorized sanding machines, specific measures are required for operator protection. During grinding operations 90% or more of dust particles come from the material being ground and, for wet grinding, from aerosols generated by the cooling fluid.

TRADE NAME, COMMON NAME OR SPECIFICATION:

X-06 Metallurgical Paper.

PRODUCT TYPE:

Silicon carbide. Abrasive grains coated on a backing of paper and epoxy resin based.

SECTION II - COMPOSITION MAY CONTAIN ONE OR MORE OF THE FOLLOWING

| Chemical Composition | Common Name | Osha Reg. (YES / NO) | CAS No | Osha Permissible Exposure Limit | ACHIH TLV | Carcinogen | Percentage % |
|--|-------------------------|-----------------------|-------------|--|----------------------|------------|--------------|
| SIC | Silicon Carbide | Y | 409-21-2 | 15 mg/M ³ | 10 mg/M ³ | N.A | 25.1 - 54.3 |
| Paper | Medium Weight | Y | N/A | N.E | N.E | No | 20.5 - 56.9 |
| Reaction of Epichloronhydrin and Bisphenol-A | Epoxy Resin | Y | 025085-99-8 | 5 ppm (19 mg/M ³) : skin | 0.1 ppm : skin | N.A | 11.9 - 17.1 |
| Polyamide Resin | Epoxy Hardener Resin | Y* | 68082-29-1 | N.E | N.E | N.A | 3.68 - 5.29 |
| Fe ₃ O ₄ | Inorganic Black Pigment | Y | 1317-61-9 | 10mg/M ³ :Total Inhalable 5mg/M ³ :Total Respirable | 5 mg/M ³ | No | 1.10 - 1.59 |

Materials are regulated by OSHA 29 CFR 1910.1200 Hazard Communication Standard

* = Osha Hazardous Ingredient. N.E = Not Established. N.A = Not Applicable

Note: Consider also components of base materials and coating being ground.

SECTION III - PHYSICAL AND CHEMICAL DATA

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|---------------------------------|--------------------------------------|-----------------------------------|---|
| BOILING POINT: N/A | MELTING POINT: N/A | SPECIFIC GRAVITY: N/A | APPEARANCE AND ODOR: 1) Paper coated with abrasive grain-No odor. |
| VAPOR PRESSURE: N/A | PERCENT VOLATILE BY VOL.: N/A | VAPOR DENSITY: N/A | |
| EVAPORATION RATE: N/A | SOLUBILITY IN WATER: N/A | SOLUBILITY IN ALCOHOL: N/A | |

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

| | | | |
|--|-------------------------|---------------------|-------------------------------|
| FLASH POINT: N/A | METHOD USED: N/A | NFPA RATINGS | |
| FLAMMABLE ELEMENTS | LEV: N/A | UEL: N/A | HEALTH: 1 |
| EXTINGUISHING MEDIA: Any proper fire-fighting material can be used | | | FLAMMABILITY: 0 |
| SPECIAL FIRE FIGHTING PROC. Use respiratory protection. Backings and resin binders will burn and/or decompose | | | REACTIVITY: 0 |
| EXPLOSION POTENTIAL N/A | | | PERSONAL PROTECTION: C |

SECTION V - HEALTH, FIRST AID & MEDICAL DATA

| Primary Route(s) of Entry | Acute & Chronic Health Effects & Effects of Overexposure | First Aid and Medical Information |
|------------------------------|--|--|
| Inhalation (Dust) | Acute-may cause coughing; shortness of breath chronic-may affect breathing capacity | Remove to fresh air, apply artificial respiration as needed, obtain first aid or medical assistance. |
| Ingestion | Not known adverse effects but ingestion not recommended | Obtain first aid or medical assistance if needed. |
| Skin | Not absorbed through skin; may cause abrasions. | Obtain first aid or medical assistance if needed. |
| Eye Contact | Dust may irritate eyes. | Wash with large amount of water. Obtain medical assistance, if needed. |
| Other Potential Health Risks | During use on some materials elevated sound levels may be created which affect hearing if not protected. | Obtain medical assistance. |

SECTION VI - CORROSIVITY AND REACTIVITY DATA

| | | | | |
|--------------------------------------|--|-------------------------------------|----------------|-------------------------------------|
| STABILITY: | STABLE | <input checked="" type="checkbox"/> | UNSTABLE | <input type="checkbox"/> |
| POLIMERIZATION: | MAY OCCUR | <input type="checkbox"/> | WILL NOT OCCUR | <input checked="" type="checkbox"/> |
| INCOMPATIBILITY: (Material to Avoid) | N/A | <input type="checkbox"/> | NONE | <input type="checkbox"/> |
| CONDITIONS TO BE AVOIDED: | NONE | | | |
| DECOMPOSITION PRODUCTS | In use, dust and some decomposing resin fumes are generated. In most cases, the material removed from the work place will be significantly greater than the coated abrasive product components, released by the grinding action. | | | |

SECTION VII - STORAGE, HANDLING AND USE PROCEDURES

| | |
|-----------------------------|---|
| NORMAL STORAGE HANDLING: | Handle with adequate ventilation. See OSHA 29CFR1910,94 (Ventilation) and OSHA 29CFR 1910,1000 (Air contaminates) |
| NORMAL USE: | Handle with adequate ventilation. See OSHA 29CFR1910,94 (Ventilation) and OSHA 29CFR 1910,1000 (Air contaminates) |
| IN CASE OF LEAKS OF SPILLS: | Normal clean up procedures. Vacuum dust. |
| WASTE DISPOSAL METHOD: | Standard landfill methods consistent with applicable Federal, State and Local Laws |

SECTION VIII - PERSONAL PROTECTION INFORMATION

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|---|---|
| RESPIRATORY/PROTECTION: | As needed, approved dust respirator OSHA 24 CFR 1910-134 NOISH/MSHA |
| VENTILATION: | LOCAL: Recommended MECHANICAL: Recommended |
| PROTECTIVE GLOVES: | Leather gloves as desired by user. |
| EYE PROTECTION: | Recommended OSHA 29 CFR 1910,133 (Face and Eye Protection). |
| OTHER EQUIPMENT: | As needed, hearing protection - OSHA 29CFR 1910,215 (Hearing Protection) All recommendations as per ANSI 37,1 Safety Guidelines. |
| MEASURES TO BE TAKEN DURING REPAIR AND MAINTENANCE OF CONTAMINATED EQUIPMENT THAT HAS BEEN IN CONTACT WITH THIS MATERIAL: No special precautions necessary. | |
| SAFETY ON SANDING MACHINES: | See: OSHA 29 CFR 1910.213 (p) (1,2,3 & 4) OSHA 29 CFR 1910.243 (a) (3) |