

1. Product and company identification

- a) Product Name : R321
- b) Recommended use of the chemical and restrictions on use
- Recommended use : Coated Abrasives. Used for sanding materials.
 - Restrictions on use : Use only for intended purpose, Sanding.
- c) Manufacturer/Supplier/Distributor Information
- Manufacturer : SUN ABRASIVES CO.,LTD
 - Address : SONGKOG-DONG ANSAN-CITY, KYONGGI-DO, KOREA (425-110)
 - Emergency phone number : + 82-31-495-6076 / Fax number : + 82-31-494-6878
 - Issued date : 2004. 10. 14
 - Supersedes date : 2015. 09. 04

2. Hazards identification

- a) Hazard Risk Classification : N/A.
- b) Label elements including precautionary statements
- Symbol : N/A.
 - Signal Word : N/A.
 - Hazard Risk Statement : N/A.
 - Precautionary Statement
 - Prevention : N/A.
 - Opposition : N/A.
 - Storage : N/A.
 - Abolition : Contaminated coated abrasives should be disposed according to Local Waste Control laws.
- c) Other Hazard Risks which are not included in the classification criteria
- Coated abrasives are inert products which do not create any risk when handled or stored. When used on grinding machines they require specific measures to protect the operators. During the grinding operation 90% or more of the particulates of the dust come from the material being ground and, for wet grinding, from aerosols generated by grinding fluid. Specific attention must therefore be given to the nature of the part and of the fluid and the appropriate protection devices must be installed.
 - Since coated abrasives contains resins of phenol / formaldehyde, the dust created during sanding also can contain a little amount of phenol / formaldehyde. Therefore, exposures to the dust for a long

time can cause difficulty in breathing and/or skin irritation.

- Eye contact : Signs / symptoms may include pain, redness, tearing and corneal abrasion..
- Skin contact : Signs / symptoms may include abrasion, redness, pain and itching.
- Inhalation : Dust from grinding, sanding or machining may cause irritation of the respiratory system. Signs / symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.
- Ingestion : No health effects are expected, but not recommended to eat.

3. Composition/Information on ingredients

Component	Material	CAS No.	Percent (%)
Backing	Cloth containing polyester	N/A	20 ~ 70
Abrasives Grain	Aluminum Oxide	1344-28-1	20 ~ 45
Bonding Resin	Cured Phenolic Resin	9003-35-4	5 ~ 20
Filler	Calcium Carbonate	16389-88-1	1 ~ 20

4. First aid measures

- a) Eye contact : Not possible, due to the form of the product.
- b) Skin contact : No harmful effects known.
- c) Inhalation : Not possible, due to the form of the product.
- d) Ingestion : Not likely, due to the form of the product; if necessary contact physician.
- e) Indication of immediate medical attention and notes for physician : Not available.

5. Fire-Fighting measures

- a) Suitable(and unsuitable) extinguishing media
 - Use normal fire extinguishing agent or sprinkle with little amount of water.
- b) Specific hazards arising from the chemical
 - N/A.
- c) Special protective equipment and precautions for fire-fighters
 - Do not inhale the substance or the product of combustion.

6. Accidental release measures

- a) Personal precautions, protective equipment and emergency procedures : N/A.
- b) Environmental precautions and protective procedures : N/A.
- c) Methods and materials for containment and cleaning up : N/A.

7. Handling and storage

- a) Precautions for safe handling : N/A.
- b) Conditions for safe storage(including any incompatibilities)
 - Keep the materials out of direct sunlight.
 - Do not place the materials on ground and concrete floor.
 - Avoid humid place and heating element such as heater and radiator.
 - Keep it in condition of Temperature, 15℃~27℃ and Humidity, 40%~50%.

8. Exposure controls & personal protection

- a) Control parameters : N/A.
- b) Appropriate Engineering Controls : Ventilator
 - Local Ventilation System : Use general dilution ventilation and / or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits and / or control dust, fume, or airborne particles.
 - Electric Precipitator : Use when there are more atmospheric pollutants than the allowable limit
- c) Personal protective equipment
 - Respiratory protection : Use respiratory protective equipment.
 - Eye protection : Wear protective goggles or face shield.
 - Hand protection : Wear protective gloves.
 - Hearing protection : Use hearing protection.
 - Note : Hazardous dust of the work piece material may be generated during grinding and/or sanding operation
National regulations for dust exposure limit values have to be taken into consideration.

9. Physical and chemical Properties

a) Appearance	Solid
b) Odor	N/A
c) Odor threshold	N/A
d) pH	N/A
e) Melting point/Freezing point	N/A
f) Initial boiling point and boiling range	N/A
g) Flashing point	N/A
h) Evaporation	N/A
i) Flammability(solid, gas)	N/A
j) Upper/lower flammability or explosive limits	N/A
k) Vapor pressure	N/A
l) Solubility	N/A
m) Vapor density	N/A
n) Relative density	N/A
o) Partition coefficient(n-octanol/water)	N/A
p) Auto-ignition temperature	N/A

q) Decomposition temperature	N/A
r) Viscosity	N/A
s) Formula mass	N/A

10. Stability and Reactivity

- a) Chemical stability and possibility of hazardous reactions : Stable.
- b) Conditions to avoid : None
- c) Incompatible material : Strong acids, Strong bases & Strong oxidizing agents may modify the mechanical characteristics of the products and create safety hazards when used on machines.
- d) Hazardous decomposition products : In use, dust and decomposing odors may be generated. In most cases, the material removed from the workplace will be significantly greater than the coated abrasives components.

11. Toxicological Information

- a) Information on the likely routes of exposure
 - Inhalation : N/A.
 - Ingestion : N/A.
 - Skin contact : N/A.
 - Eye contact : N/A.
- b) Health hazards information
 - Acute toxic : Not determined.
 - Skin corrosive/irritant : Not determined.
 - Serious eye damage/eye irritation : Not determined.
 - Respiratory sensitization : Not determined.
 - Skin sensitization : Not determined.
 - Carcinogenicity : Not determined.
 - Germ Cell Mutagenicity : Not determined.
 - Reproductive toxicity : Not determined.
 - Specific target organ toxicity(single exposure) : Not determined.
 - Specific target organ toxicity(repeated exposure) : Not determined.
 - Aspiration hazard : Not determined.

12. Ecological Information

- a) Aquatic and terrestrial ecotoxicity : Not determined.
- b) Persistence and degradability : Not determined.
- c) Bioaccumulative potential : Not determined.
- d) Mobility in soil : Not determined.
- e) Other adverse effects : Not determined.

13. Disposal Considerations

- a) Disposal method : Follow relevant local regulations.
- b) Disposal precaution : Refer to #8. Exposure controls & personal protection.

14. Transport Information

- a) UN number : N/A.
- b) UN proper shipping name : N/A.
- c) Transport hazard class : N/A.
- d) Packing group : N/A.
- e) Marine pollution : N/A.
- f) Special precaution which a user to be aware of or needs to comply with in connection with transport or conveyance either within or outside their premises : N/A.

15. Regulatory information

- a) Industrial safety and Health Act : N/A.
- b) Toxic Chemical Control Act : N/A.
- c) Dangerous Material Safety Control Act : N/A.
- d) Wastes Management Act : N/A.
- e) Other requirements in domestic and other countries : N/A.

16. Other Information

- a) Information source and references
 - Occupational Safety & Health Administration(<http://www.osha.gov>)
 - Korea Occupational Safety & Health Agency (<http://www.kosha.or.kr>)
 - National Institute of Environmental Research(<http://ncis.nier.go.kr>)
- b) Issuing date : 2004.10.14
- c) Revision number and date : 2015.09.04(2nd)
- d) Others

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