



# Safety Data Sheet (SDS)

Applicant: Foshan Jiali stationery Co.,Ltd

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Address: No. 6, Jiwei Road, Jili Industrial Zone, Nanzhuang Town,  
Chancheng District, Foshan City

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Sample Name: Glue stick

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## According to GHS

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### SECTION 1 Identification of the substance / mixture and of the company / undertaking

#### 1.1 Product Identifier

|              |            |
|--------------|------------|
| Product name | Glue stick |
|--------------|------------|

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

|                          |             |
|--------------------------|-------------|
| Relevant identified uses | Stick paper |
|--------------------------|-------------|

#### 1.3 Details of the supplier of the safety data sheet

|                      |                                                                                          |
|----------------------|------------------------------------------------------------------------------------------|
| Manufacture/Supplier | Foshan Jiali stationery Co.,Ltd                                                          |
| Address              | No. 6, Jiwei Road, Jili Industrial Zone, Nanzhuang Town, Chancheng District, Foshan City |
| Telephone            | 0757-85320283                                                                            |
| Fax                  | --                                                                                       |
| Email                | kingsley@bond-tec.com                                                                    |
| Export to            | GHS                                                                                      |
| Transport fashion    | Sea                                                                                      |

#### 1.4 Emergency telephone number

|                             |             |
|-----------------------------|-------------|
| Emergency telephone numbers | 13702555720 |
|-----------------------------|-------------|

### SECTION 2 Hazards identification

#### 2.1 Classification of the substance or mixture

Summary of Hazard in an Emergency Situation

Solid.Combustible.

|                |                                                                                                                                                                            |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Classification | Acute Toxicity (Oral) Category 5                                                                                                                                           |
| Legend:        | 1. Classified by Chemwatch; 2. China Classification Information Sheet of Hazardous Chemicals (Draft); 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI |

#### 2.2 Label elements







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|                     |                |
|---------------------|----------------|
| Hazard pictogram(s) | Not Applicable |
|---------------------|----------------|

|             |         |
|-------------|---------|
| Signal word | Warning |
|-------------|---------|

### Hazard statement(s)

|      |                              |
|------|------------------------------|
| H303 | May be harmful if swallowed. |
|------|------------------------------|

### Precautionary statement(s) Prevention

Not Applicable

### Precautionary statement(s) Response

|      |                                                                       |
|------|-----------------------------------------------------------------------|
| P312 | Call a POISON CENTER/doctor/physician/first aider/if you feel unwell. |
|------|-----------------------------------------------------------------------|

### Precautionary statement(s) Storage

Not Applicable

### Precautionary statement(s) Disposal

Not Applicable

### Physical and Chemical Hazard

Solid.Combustible.

Toxic smoke/fumes in a fire.

### Health Hazards

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhaled      | The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models).                                                                                                                                                                                                                                                                                                                                                        |
| Ingestion    | Accidental ingestion of the material may be damaging to the health of the individual.                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Skin Contact | The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models).                                                                                                                                                                                                                                                                                                                                                                                      |
| Eye          | Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.                                                                                                                                                                                                                                                                              |
| Chronic      | There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.<br>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.<br>Polyvinylpyrrolidone (PVP) is generally well-tolerated. It has been shown to cause sarcoma in rats but there is no evidence that it causes cancer in humans. The material may cause irritation or skin inflammation in some individuals upon prolonged contact. |

### Environmental Hazards

See Section 12





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### 2.3 Other hazards

Ingestion may produce health damage\*.

Cumulative effects may result following exposure\*.

Limited evidence of a carcinogenic effect\*.

Not Applicable

## SECTION 3 Composition / information on ingredients

### Substances/Mixtures

| Ingredient Name          | CAS No.   | EC No.    | Content (%) |
|--------------------------|-----------|-----------|-------------|
| Aqua                     | 7732-18-5 | 231-791-2 | 63.5%       |
| Polyvinylpyrrolidone PVP | 9003-39-8 | 618-363-4 | 22.5%       |
| Glycerin                 | 56-81-5   | 200-289-5 | 9%          |
| Sodium Stearate          | 822-16-2  | 212-490-5 | 5%          |

## SECTION 4 First aid measures

### 4.1 Description of first aid measures

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye Contact</b>  | If this product comes in contact with the eyes:<br>Wash out immediately with fresh running water.<br>Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.<br>Seek medical attention without delay; if pain persists or recurs seek medical attention.<br>Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| <b>Skin Contact</b> | If skin or hair contact occurs:<br>Flush skin and hair with running water (and soap if available).<br>Seek medical attention in event of irritation.                                                                                                                                                                                                                                                                                                        |
| <b>Inhalation</b>   | If fumes, aerosols or combustion products are inhaled remove from contaminated area.<br>Other measures are usually unnecessary.                                                                                                                                                                                                                                                                                                                             |
| <b>Ingestion</b>    | If swallowed do NOT induce vomiting.<br>If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.<br>Observe the patient carefully.                                                                                                                                                                                                                                  |



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|  |                                                                                                                                                                                                                                                                      |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</p> <p>Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</p> <p>Seek medical advice.</p> |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 4.2 Most important symptoms and effects, both acute and delayed

This product is not classified as harmful to human health.

### 4.3 Indication of any immediate medical attention and special treatment needed

If skin irritation or rash occurs, consult a doctor.

## SECTION 5 Firefighting measures

### 5.1 Extinguishing media

Foam.

Dry chemical powder.

BCF (where regulations permit).

Carbon dioxide.

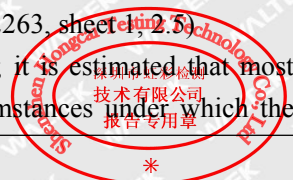
Water spray or fog - Large fires only.

### 5.2 Special hazards arising from the substrate or mixture

|             |                                                                                                                                        |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Fire</b> | Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------|

### 5.3 Advice for firefighters

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Fire Fighting</b>         | <p>Alert Fire Brigade and tell them location and nature of hazard.</p> <p>Wear breathing apparatus plus protective gloves.</p> <p>Prevent, by any means available, spillage from entering drains or water courses.</p> <p>Use water delivered as a fine spray to control fire and cool adjacent area.</p> <p>DO NOT approach containers suspected to be hot.</p> <p>Cool fire exposed containers with water spray from a protected location.</p> <p>If safe to do so, remove containers from path of fire.</p> <p>Equipment should be thoroughly decontaminated after use.</p> |
| <b>Fire/Explosion Hazard</b> | <p>Minimum Ignition Energy (MIE) 10-30 mJ, 1 bar approx. 23 C (VDI 2263, sheet 1, 2.5)</p> <p>Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the</p>                                                                                                                                                                                                                                                                                     |





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combustion process occurs, such materials may cause fires and / or dust explosions.

Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions).

Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.

In the same way as gases and vapours, dusts in the form of a cloud are only ignitable over a range of concentrations; in principle, the concepts of lower explosive limit (LEL) and upper explosive limit (UEL) are applicable to dust clouds but only the LEL is of practical use; - this is because of the inherent difficulty of achieving homogeneous dust clouds at high temperatures (for dusts the LEL is often called the "Minimum Explosible Concentration", MEC).

When processed with flammable liquids/vapors/mists, ignitable (hybrid) mixtures may be formed with combustible dusts. Ignitable mixtures will increase the rate of explosion pressure rise and the Minimum Ignition Energy (the minimum amount of energy required to ignite dust clouds - MIE) will be lower than the pure dust in air mixture. The Lower Explosive Limit (LEL) of the vapour/dust mixture will be lower than the individual LELs for the vapors/mists or dusts.

A dust explosion may release of large quantities of gaseous products; this in turn creates a subsequent pressure rise of explosive force capable of damaging plant and buildings and injuring people.

Usually the initial or primary explosion takes place in a confined space such as plant or machinery, and can be of sufficient force to damage or rupture the plant. If the shock wave from the primary explosion enters the surrounding area, it will disturb any settled dust layers, forming a second dust cloud, and often initiate a much larger secondary explosion. All large scale explosions have resulted from chain reactions of this type.

Dry dust can be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport.

Build-up of electrostatic charge may be prevented by bonding and grounding.

Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.

All movable parts coming in contact with this material should have a speed of less than 1-meter/sec.

A sudden release of statically charged materials from storage or process equipment, particularly at elevated temperatures and/ or pressure, may result in ignition especially in the absence of an







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apparent ignition source.

One important effect of the particulate nature of powders is that the surface area and surface structure (and often moisture content) can vary widely from sample to sample, depending of how the powder was manufactured and handled; this means that it is virtually impossible to use flammability data published in the literature for dusts (in contrast to that published for gases and vapours).

Autoignition temperatures are often quoted for dust clouds (minimum ignition temperature (MIT)) and dust layers (layer ignition temperature (LIT)); LIT generally falls as the thickness of the layer increases.

Combustion products include:

carbon monoxide (CO)

carbon dioxide (CO<sub>2</sub>)

nitrogen oxides (NO<sub>x</sub>)

other pyrolysis products typical of burning organic material.

May emit poisonous fumes.

Dusts with Minimum Ignition Energies (MIEs) ranging between 10 and 20 mJ are highly sensitive to ignition. They require that:

plant is grounded

personnel might also need to be grounded

the use of high resistivity materials (such as plastics) should be restricted or avoided during handling or in packaging

electrostatic hazards from bulk powders of high resistivity are considered.

The MIE of a dust/air mix depends on the particle size the water content and the temperature of the dust. The finer and the dryer the dust the lower the MIE. Higher temperatures cause lower MIE and an increased risk of dust explosion.

Quoted values for MIE generally are only representative. Characteristics may change depending upon the process and conditions of use or any changes made to the dust during use, including further grinding or mixing with other products. In order to obtain more specific data for dust, as used, it is recommended that further characterisation testing is performed.

### SECTION 6 Accidental release measures

#### **6.1 Personal precautions, protective equipment and emergency procedures**

See section 8

Measures for Preventing Secondary Contamination

Refer to section above

#### **6.2 Environmental precautions**





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See section 12

### 6.3 Methods and material for containment and cleaning up

|              |               |
|--------------|---------------|
| Minor Spills | Clean up all. |
| Major Spills | Clean up all. |

Personal Protective Equipment advice is contained in Section 8 of the SDS.

### 6.4 Reference to other sections

For information on safe operation, see section 7.

For information on personal protective equipment, see section 8.

## SECTION 7 Handling and storage

### 7.1 Precautions for safe handling

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Safe handling | <p>Avoid generation of static electricity. Earth all lines and equipment.</p> <p>Avoid all personal contact, including inhalation.</p> <p>Wear protective clothing when risk of exposure occurs.</p> <p>Use in a well-ventilated area.</p> <p>Prevent concentration in hollows and sumps.</p> <p>DO NOT enter confined spaces until atmosphere has been checked.</p> <p>DO NOT allow material to contact humans, exposed food or food utensils.</p> <p>Avoid contact with incompatible materials.</p> <p>When handling, DO NOT eat, drink or smoke.</p> <p>Keep containers securely sealed when not in use.</p> <p>Avoid physical damage to containers.</p> <p>Always wash hands with soap and water after handling.</p> <p>Work clothes should be laundered separately. Launder contaminated clothing before re-use.</p> <p>Use good occupational work practice.</p> <p>Observe manufacturer's storage and handling recommendations contained within this SDS.</p> <p>Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</p> <p>Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions)</p> <p>Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame.</p> <p>Establish good housekeeping practices.</p> |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|







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|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          | <p>Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds.</p> <p>Use continuous suction at points of dust generation to capture and minimise the accumulation of dusts. Particular attention should be given to overhead and hidden horizontal surfaces to minimise the probability of a "secondary" explosion. According to NFPA Standard 654, dust layers 1/32 in.(0.8 mm) thick can be sufficient to warrant immediate cleaning of the area.</p> <p>Do not use air hoses for cleaning.</p> <p>Minimise dry sweeping to avoid generation of dust clouds. Vacuum dust-accumulating surfaces and remove to a chemical disposal area. Vacuums with explosion-proof motors should be used.</p> <p>Control sources of static electricity. Dusts or their packages may accumulate static charges, and static discharge can be a source of ignition.</p> <p>Solids handling systems must be designed in accordance with applicable standards (e.g. NFPA including 654 and 77) and other national guidance.</p> <p>Do not empty directly into flammable solvents or in the presence of flammable vapors.</p> <p>The operator, the packaging container and all equipment must be grounded with electrical bonding and grounding systems. Plastic bags and plastics cannot be grounded, and antistatic bags do not completely protect against development of static charges.</p> <p>Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.</p> <p>Do NOT cut, drill, grind or weld such containers.</p> <p>In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.</p> |
| <b>Other information</b> | <p>Store in original containers.</p> <p>Keep containers securely sealed.</p> <p>Store in a cool, dry area protected from environmental extremes.</p> <p>Store away from incompatible materials and foodstuff containers.</p> <p>Protect containers against physical damage and check regularly for leaks.</p> <p>Observe manufacturer's storage and handling recommendations contained within this SDS.</p> <p>For major quantities:</p> <p>Consider storage in banded areas - ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes and streams}.</p> <p>Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan; this may require consultation with local authorities.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

### 7.2 Conditions for safe storage, including any incompatibilities

|                           |                                                                                                                       |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------|
| <b>Suitable container</b> | <p>Polyethylene or polypropylene container.</p> <p>Check all containers are clearly labelled and free from leaks.</p> |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------|



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|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Storage incompatibility</b> | Avoid storage chlorinated organic compounds.<br>Avoid storage with reducing agents.<br>Avoid strong acids, bases. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|

### 7.3 Specific end use(s)

Not Available

## SECTION 8 Exposure controls / personal protection

### 8.1 Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Not Available

Emergency Limits

| Ingredient                   | TEEL-1   | TEEL-2    | TEEL-3       |
|------------------------------|----------|-----------|--------------|
| vinylpyrrolidone homopolymer | 51 mg/m3 | 560 mg/m3 | 20,000 mg/m3 |
| 2-pyrrolidinone              | 6.9 ppm  | 76 ppm    | 460 ppm      |

| Ingredient                   | Original IDLH | Revised IDLH  |
|------------------------------|---------------|---------------|
| vinylpyrrolidone homopolymer | Not Available | Not Available |
| 2-pyrrolidinone              | Not Available | Not Available |

### Occupational Exposure Banding

| Ingredient      | Occupational Exposure Band Rating                                                                                                                                                                                                                                                                                                                                  | Occupational Exposure Band Limit |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| 2-pyrrolidinone | E                                                                                                                                                                                                                                                                                                                                                                  | ≤ 0.1 ppm                        |
| Notes:          | Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health. |                                  |

### 8.2 Exposure controls







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### Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.

Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.

If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered. Such protection might consist of:

- (a): particle dust respirators, if necessary, combined with an absorption cartridge;
- (b): filter respirators with absorption cartridge or canister of the right type;
- (c): fresh-air hoods or masks

Build-up of electrostatic charge on the dust particle, may be prevented by bonding and grounding.

Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to efficiently remove the contaminant.

| Type of Contaminant:                                                                                                                                           | Air Speed:                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion) | 1-2.5 m/s (200-500 ft/min)   |
| grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).           | 2.5-10 m/s (500-2000 ft/min) |

Within each range the appropriate value depends on:

|                        |                        |
|------------------------|------------------------|
| Lower end of the range | Upper end of the range |
|------------------------|------------------------|



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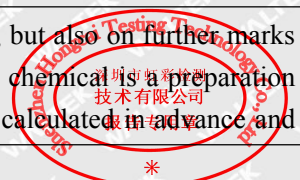
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|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|---------------------------------|-----------------------------------------------------------|----------------------------------|----------------------------------|-------------------------------|-------------------------------------------|----------------------------------|
|                                                           | <table><tr><td>1: Room air currents minimal or favourable to capture</td><td>1: Disturbing room air currents</td></tr><tr><td>2: Contaminants of low toxicity or of nuisance value only</td><td>2: Contaminants of high toxicity</td></tr><tr><td>3: Intermittent, low production.</td><td>3: High production, heavy use</td></tr><tr><td>4: Large hood or large air mass in motion</td><td>4: Small hood-local control only</td></tr></table> <p>Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 4-10 m/s (800-2000 ft/min) for extraction of crusher dusts generated 2 metres distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.</p> | 1: Room air currents minimal or favourable to capture | 1: Disturbing room air currents | 2: Contaminants of low toxicity or of nuisance value only | 2: Contaminants of high toxicity | 3: Intermittent, low production. | 3: High production, heavy use | 4: Large hood or large air mass in motion | 4: Small hood-local control only |
| 1: Room air currents minimal or favourable to capture     | 1: Disturbing room air currents                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                       |                                 |                                                           |                                  |                                  |                               |                                           |                                  |
| 2: Contaminants of low toxicity or of nuisance value only | 2: Contaminants of high toxicity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                       |                                 |                                                           |                                  |                                  |                               |                                           |                                  |
| 3: Intermittent, low production.                          | 3: High production, heavy use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                       |                                 |                                                           |                                  |                                  |                               |                                           |                                  |
| 4: Large hood or large air mass in motion                 | 4: Small hood-local control only                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                       |                                 |                                                           |                                  |                                  |                               |                                           |                                  |
| <b>Personal protection</b>                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                       |                                 |                                                           |                                  |                                  |                               |                                           |                                  |
| <b>Eye and face protection</b>                            | <p>Safety glasses with side shields<br/>Chemical goggles.</p> <p>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]</p>                                                                                                                                                                                                                                                                                                              |                                                       |                                 |                                                           |                                  |                                  |                               |                                           |                                  |
| <b>Skin protection</b>                                    | See Hand protection below                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                       |                                 |                                                           |                                  |                                  |                               |                                           |                                  |
| <b>Hands/feet protection</b>                              | The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                       |                                 |                                                           |                                  |                                  |                               |                                           |                                  |







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has therefore to be checked prior to the application.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.

Contaminated gloves should be replaced.

As defined in ASTM F-739-96 in any application, gloves are rated as:

- Excellent when breakthrough time > 480 min
- Good when breakthrough time > 20 min
- Fair when breakthrough time < 20 min
- Poor when glove material degrades

For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.

It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.

Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required





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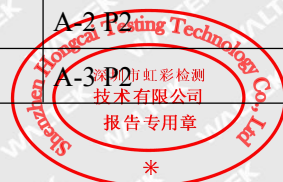
|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | <p>for specific tasks. For example:</p> <p>Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.</p> <p>Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential</p> <p>Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p> <p>Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.</p> <p>polychloroprene.<br/>nitrile rubber.<br/>butyl rubber.<br/>fluorocaoutchouc.<br/>polyvinyl chloride.</p> <p>Gloves should be examined for wear and/ or degradation constantly.</p> |
| <b>Body protection</b>  | See Other protection below                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Other protection</b> | <p>Overalls.<br/>P.V.C apron.<br/>Barrier cream.<br/>Skin cleansing cream.<br/>Eye wash unit.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

### Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

| Required minimum protection factor | Maximum gas/vapour concentration present in air p.p.m. (by volume) | Half-face Respirator | Full-Face Respirator |
|------------------------------------|--------------------------------------------------------------------|----------------------|----------------------|
| up to 10                           | 1000                                                               | A-AUS / Class1 P2    | -                    |
| up to 50                           | 1000                                                               | -                    | A-AUS / Class 1 P2   |
| up to 50                           | 5000                                                               | Airline *            | -                    |
| up to 100                          | 5000                                                               | -                    | A-2 P2               |
| up to 100                          | 10000                                                              | -                    | A-3 P2               |







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|      |  |  |           |
|------|--|--|-----------|
| 100+ |  |  | Airline** |
|------|--|--|-----------|

\* - Continuous Flow \*\* - Continuous-flow or positive pressure demand

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.

The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).

Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.

Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.

Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)

Use approved positive flow mask if significant quantities of dust becomes airborne.

Try to avoid creating dust conditions.

## SECTION 9 Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|                           |                                 |
|---------------------------|---------------------------------|
| Color                     | White                           |
| Form                      | Cylindrical slightly hard paste |
| Odour                     | None                            |
| Melting Range (°C)        | No data                         |
| Boiling Range (°C)        | No data                         |
| Flash Point (°C)          | No data                         |
| Decomposition Temp (°C)   | No data                         |
| Autoignition Temp (°C)    | No data                         |
| Upper Explosive Limit (%) | No data                         |
| Lower Explosive Limit (%) | No data                         |
| Volatile Component (%vol) | No data                         |





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|                                 |         |
|---------------------------------|---------|
| Molecular Weight                | No data |
| Viscosity                       | No data |
| Solubility in water (g/L)       | No data |
| pH (1% solution)                | No data |
| pH (as supplied)                | No data |
| Vapour Pressure (kPa)           | No data |
| Specific Gravity (water=1)      | No data |
| Relative Vapour Density (air=1) | No data |
| Evaporation Rate                | No data |

### 9.2 Other information

Not Available

## SECTION 10 Stability and reactivity

|                                    |                                                                           |
|------------------------------------|---------------------------------------------------------------------------|
| Reactivity                         | See section 7                                                             |
| Chemical stability                 | Product is considered stable and hazardous polymerisation will not occur. |
| Possibility of hazardous reactions | See section 7                                                             |
| Conditions to avoid                | See section 7                                                             |
| Incompatible materials             | See section 7                                                             |
| Hazardous decomposition products   | See section 5                                                             |

## SECTION 11 Toxicological information

### 11.1 Information on toxicological affects

|                                            |          |
|--------------------------------------------|----------|
| Acute Toxicity                             |          |
| LD/LC50 values relevant for classification | No data. |
| Primary irritant effect                    |          |
| On the skin                                | No data. |
| On the eyes                                | No data. |
| Inhaled                                    | No data. |



\*





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|                                     |                                                                                                                                                                                                                                                                         |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Sensitization</b>                | No known sensitizing effects.                                                                                                                                                                                                                                           |
| <b>More information on toxicity</b> | According to the calculation method of the general EU classification guidelines for preparations (printed in the latest edition), there are no classification restrictions for this product. There are no obvious acute toxicity data to confirm the literature search. |

### 11.2 Information on other hazards

No data.

## SECTION 12 Ecological information

### 12.1 Toxicity

|                                     |                                                                                                                                                                                                                                                                                                                          |                    |                               |           |               |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------|-----------|---------------|
| <b>vinylpyrrolidone homopolymer</b> | Endpoint                                                                                                                                                                                                                                                                                                                 | Test Duration (hr) | Species                       | Value     | Source        |
|                                     | LC50                                                                                                                                                                                                                                                                                                                     | 96h                | Fish                          | 000mg/l   | Not Available |
| <b>2-pyrrolidinone</b>              | Endpoint                                                                                                                                                                                                                                                                                                                 | Test Duration (hr) | Species                       | Value     | Source        |
|                                     | LC50                                                                                                                                                                                                                                                                                                                     | 96h                | Fish                          | >100mg/l  | 4             |
|                                     | EC50                                                                                                                                                                                                                                                                                                                     | 96h                | Algae or other aquatic plants | 84mg/l    | 1             |
|                                     | EC10(ECx)                                                                                                                                                                                                                                                                                                                | 72h                | Algae or other aquatic plants | 4mg/l     | 1             |
|                                     | EC50                                                                                                                                                                                                                                                                                                                     | 72h                | Algae or other aquatic plants | 250mg/l   | 1             |
|                                     | EC50                                                                                                                                                                                                                                                                                                                     | 48h                | Crustacea                     | 13.21mg/l | 1             |
| <b>Legend:</b>                      | Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data |                    |                               |           |               |

### 12.2 Persistence and degradability

|                              |                                |                         |
|------------------------------|--------------------------------|-------------------------|
| <b>Ingredient</b>            | <b>Persistence: Water/Soil</b> | <b>Persistence: Air</b> |
| vinylpyrrolidone homopolymer | LOW                            | LOW                     |
| 2-pyrrolidinone              | LOW                            | LOW                     |

### 12.3 Bioaccumulative potential

|                   |                        |
|-------------------|------------------------|
| <b>Ingredient</b> | <b>Bioaccumulation</b> |
|-------------------|------------------------|





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| Ingredient                   | Bioaccumulation       |
|------------------------------|-----------------------|
| vinylpyrrolidone homopolymer | LOW (LogKOW = 0.2484) |
| 2-pyrrolidinone              | LOW (LogKOW = -0.85)  |

### 12.4 Mobility in soil

| Ingredient                   | Mobility          |
|------------------------------|-------------------|
| vinylpyrrolidone homopolymer | LOW (KOC = 40.46) |
| 2-pyrrolidinone              | LOW (KOC = 16.86) |

### 12.5 Results of PBT and vPvB assessment

No Data.

### 12.6 Endocrine disrupting properties

No Data.

### 12.7 Other adverse effects

No Data.

## SECTION 13 Disposal considerations

### 13.1 Waste treatment methods

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Waste chemicals:</b> | <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <p>Reduction</p> <p>Reuse</p> <p>Recycling</p> <p>Disposal (if all else fails)</p> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. In most instances the supplier of the material should be consulted.</p> <p>DO NOT allow wash water from cleaning or process equipment to enter drains</p> |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|







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|                                        |                                                                                                                                                                                                                                                        |
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|                                        | It may be necessary to collect all wash water for treatment before disposal.<br>In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.<br>Where in doubt contact the responsible authority. |
| <b>Contaminated packing materials:</b> | Refer to section above                                                                                                                                                                                                                                 |
| <b>Precautions for Transport:</b>      | Refer to section above                                                                                                                                                                                                                                 |

### SECTION 14 Transport information

#### 14.1 UN number or ID number

Not Applicable

#### 14.2 UN proper shipping name

Not Applicable

#### 14.3 Transport hazard class(es)

Not Applicable

#### 14.4 Packing group

Not Applicable

#### 14.5 Environmental hazards

Not Applicable

#### 14.6 Special precautions for user

Not Applicable

#### 14.7 Maritime transport in bulk according to IMO instruments

Not Applicable

### SECTION 15: Regulatory information

#### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

The product should follow the relevant regulations of EU Directive/Hazardous substances regulations.

#### 15.2 Chemical safety assessment

No chemical safety assessment has been carried out





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### **SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

The SDS should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Statement:

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2. This information of section 1, 3 and 9 was provided by the applicant who should be responsible for the authenticity which HCT hasn't verified;
3. The content shown in this report refer only to the sample applied;
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\*\*\*End\*\*\*

