QINGDAO SANHUAN COLORCHEM CO., LTD.

17 FLOOR, YUHENG BUILDING, NO.170
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## Section I - Identification of Substance:

| | |
|---|---|
| Product Code | SHL-18B/28B |
| Product Name | Polyvinyl Butyral Resin |
| Product CAS no. | 68648-78-2 |
| Manufacturer's Name | QINGDAO SANHUAN COLORCHEM CO., LTD.<br>17 FLOOR, YUHENG BUILDING, NO.170, XUZHOU NORTH ROAD, QINGDAO, CHINA |
| Telephone Number | (86) 532-88978177 |
| Fax Number | (86) 532-88962988 |

## Section II – Ingredient information

| Chemical name | Composition | CAS No. | Content (% wt) |
|---|---|---|---|
| Polyvinyl butyral resin | Vinyl acetate, vinyl alcohol, polyvinyl butyral, polyvinyl alcohol, butyral | 68648-72-2<br>63148-65-2 | >97.5 |
| Butyral | Butyral | 123-72-8 | <0.05 |
| Sodium chloride | Sodium chloride | 7647-14-5 | <0.05 |
| Water | Water | 7732-18-5 | 2.5 |

## Section III – Physical and Chemical Properties

| | |
|---|---|
| Form | Solid |
| Color | White |
| Odor | None or slight |
| pH | NA |
| Softening point | 60°C - 65°C |
| Melting Point | 135°C - 149°C |
| Boiling Point | NA |
| Bulk Density | 1.08 – 1.10 g/cm$^3$ (20°C) |
| Density | 2.4 – 3.0 g/cm$^3$ |
| Volatility | < 2.5% wt |
| Solid Content | > 97.5% wt |
| Water Solubility | Not soluble |
| Solubility | Alcohols are the best solvent, followed by esters and ethers |
| Ignition Point | >380°C |
| Decomposition Temperature | >220°C - 240°C |

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## Section IV - Hazards Identification

Hazardous ingredients

This product is not considered hazardous as defined by 29 CFR 1910.1200 and under the provisions of the Superfund Amendments and Reauthorization Act Title III, Section 311 and 312. However, dusting may occur under certain use conditions and nuisance dusts are regulated in 29 CFR 1910.1200, Table Z-1-A.

| WHMIS RATING |
|---|
| **HEALTH-1 FLAMMABILITY-1 REACTIVITY-0** |
| *Minimal…0 Slight…1 Moderate…2 Serious…3 Severe…4* |

| **Potential health effects:** | |
|---|---|
| **Eyes:** | Dust may cause mild eye irritation. |
| **Skin:** | May cause mild irritation in the form of redness, or dermatitis on hypersensitive individuals after prolonged contact. |
| **Ingestion:** | May cause abdominal discomfort, nausea, vomiting and diarrhea if swallowed. |
| **Inhalation:** | Not considered a respiratory hazard under normal use conditions, however dusting may cause minor irritation to mucous membranes in some individuals. Avoid breathing dusts whenever possible. |
| **Chronic:** | Higher risk of skin irritation, asthma and pneumonia |
| **Environment:** | None |

## Section V - First Aid Measures

| | |
|---|---|
| **After eye contact:** | Rinse opened eye for several minutes under running water. Seek medical help if irritation continues |
| **After skin contact:** | Wash with water and soap and rinse thoroughly. Seek medical help if irritation continues |
| **After inhalation:** | Move to well ventilated location. Seek medical help in case of symptoms. |
| **After swallowing:** | Wash mouth with water. In case of unconsciousness, take a large amount of water or mile. Seek medical help in case of persistent symptoms. |

## Section VI – Fire Fighting Measures

| | |
|---|---|
| **Flash Point:** | > 149°C (300°F) |
| **Extinguishing Media:** | Carbon Dioxide, Dry Chemical, Foam and Water Spray. |
| **Explosion Hazards:** | As with most organic solids, if a high concentration of dust is suspended in air, explosion hazard may exist. Need proper ground wiring. |
| **Hazardous Combustion Products:** | Oxides of carbon and noxious fumes. |
| **Hazardous Decomposition** | None |

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| | |
|---|---|
| **Products:** | |
| **Personal Protection Equipment:** | Wear full protective equipment and a NIOSH-approved Self-Contained Breathing Apparatus (SCBA) with full face piece operated in the pressure demand mode. For small outdoor fires, which may be extinguishable with a portable fire extinguisher, use of a SCBA may not be required. |

## Section VII – Accidental Release Measures

Personal protection:
Ware proper personal protection equipment

Environmental protection:
Avoid contamination of soil, water source, and sewage system. Large scale spills need to be reported to regulatory authority

Spill clean-up:
Collect large spills with special vacuum or broom and salvage if possible. Material should not be permitted to enter into public sewage systems or waterways. Do not use pressured air to clean. For waste storage, see part 13.

## Section VIII – Handling & Storage

Handling:
Manually or use the proper handling equipment to lift and move the package. Avoid dust dispersion. Operate in well ventilated areas. Use proper PPE defined in Part 8.

Storage:
Store under dry condition in sealed packages. Keep away from heat, sparks and open flames. Avoid contact with strong oxidizers. Stacking height should not be over 12 stories. Under these conditions, the shelf life of the product will be at least 12 months from the delivery.
After expiration, the product still can be used if quality inspection is passed.

## Section IX – Exposure Guidelines & Personal Protective Equipment

Exposure Guidelines:
Operate in well ventilated locations and monitor airborne dust level to ensure within the allowed limit. If higher level of dust is detected, the work place must be equipped with anti-explosion ventilation system.

Personal Protective Equipment:
The usual precautionary measures should be adhered to general rules for handling chemicals.
Breathing equipment: Dust mask
Protection of hands: Protective gloves, chemical resistant and antistatic

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Eye protection: Safety glasses

Work Place Exposure Limits

| Chemical | Regulation | Type | Limit | Comment |
|---|---|---|---|---|
| Polyvinyl Butyral | GBZ 2.1-2007 | TWA – inhalable dust | 8 mg/m$^3$ | General dust |
| | | TWZ- respirable dust | - | |
| | EH40/2008 | TWA – inhalable dust | 10 mg/m$^3$ | |
| | | TWZ- respirable dust | 4 mg/m$^3$ | |

## Section X – Stability and Reactivity

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|---|---|
| Stability: | Stable under normal conditions |
| Hazardous polymerization: | Will not occur under normal conditions |
| Conditions to avoid: | Heat, open flame or other sources of ignition. |
| Substance to avoid: | Strong oxidants, strong acids |
| Hazardous decomposition substances: | Carbon monoxide, carbon dioxide |

## Section XI – Toxicological Information

When used according to manufacture intent and specifications, this product will not cause any adverse toxicological effects, e.g. corrosion, acute toxicity, carcinogenic, mutagenic, reproduction toxicity, and allergies.

Additional effect: See Section IV.

## Section XII – Ecological Information

| | |
|---|---|
| Ecological toxicity: | This product may be harmful to environment |
| Mobility: | This product is not water soluble |
| Persistence & decomposition: | NA |
| Bio accumulation: | NA |

## Section XIII – Disposal Considerations

This product is not allowed to enter sewage system, water source or soil.

Disposal according to official regulations and notification to the authorities is be made.

## Section XIV – Transport Information

This product is not classified as dangerous goods (e.g. ARD/RID, IMDG AND ICAO/IATA) according to transport regulations.

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## Section XV – Regulatory Information

This product is not subject to regulations under EC Directives and the Ordinance on Hazardous Materials (GefStoffV).

This product is not considered to be a hazardous substance under the OSHA Hazard Communication Standard, 29 CFR 1910.1200

## Section XVI – Other information

The information of this Material Safety Data Sheet (MSDS) is based on the present state of our knowledge and laws. It is the responsibility of users to take all the precautions. The information in this MSDS is not to be considered as a guarantee of the product's performance.