SPAKS LUBE PRIVATE LIMITED
J-896, Matsya Industrial Area, Alwar, Rajasthan - 301030
Email: support@spakslube.com | Website: www.spakslube.com

Polyurethane Coating Technical Data Sheet

Product Description

Polyurethane Coating is a high-performance protective coating designed to provide a durable, long-lasting finish for a wide range of surfaces. Known for its excellent abrasion resistance, chemical resistance, and flexibility, this coating is ideal for both industrial and commercial applications. Polyurethane Coating forms a strong, protective layer that resists wear, weathering, and harsh environmental conditions, making it an ideal choice for surfaces exposed to heavy traffic, mechanical stress, or chemical exposure.

This coating is formulated using advanced polyurethane resins, which give it superior bonding strength and outstanding durability. It cures to form a tough, resilient finish that withstands impacts, stains, UV radiation, and various chemicals. It is commonly used to protect surfaces like concrete, wood, metal, and other substrates in both interior and exterior environments.

Polyurethane Coating offers excellent gloss retention, color stability, and resistance to fading over time. It is available in both gloss and satin finishes, allowing it to meet various aesthetic preferences. Additionally, its versatility allows it to be applied in a wide variety of industries including automotive, construction, manufacturing, and aerospace.

This coating is also valued for its ease of application and quick drying properties, making it a cost-effective solution for large-scale industrial applications as well as smaller residential or commercial projects. Its excellent weatherability makes it suitable for both indoor and outdoor applications.

Recommended Use

1. **Industrial Flooring**: Polyurethane Coating is widely used in industrial flooring systems due to its superior durability and resistance to chemicals, abrasion, and physical wear. It is ideal for factories, warehouses, and manufacturing plants where heavy machinery or foot traffic can cause significant wear to floors. The coating ensures a longer service life for the flooring while reducing maintenance costs.
2. **Automotive Applications**: Used for vehicle parts, such as bumpers and chassis, Polyurethane Coating is commonly found in the automotive industry. Its resistance to UV, chemicals, and environmental factors helps maintain the integrity of the surfaces over time, providing long-lasting protection and a polished finish.
3. **Wood Protection**: Polyurethane Coating is frequently applied to wood surfaces such as furniture, cabinetry, and floors. It enhances the wood's natural beauty while protecting it from moisture, abrasion, and everyday wear. Its smooth finish adds to the aesthetic appeal, making it suitable for both residential and commercial spaces.
4. **Metal Surfaces**: Polyurethane Coating is ideal for use on metal surfaces such as bridges, railings, fences, and steel structures exposed to harsh environmental conditions. The coating protects metals from rust, corrosion, and the damaging effects of outdoor elements, ensuring a longer lifespan for metal structures.
5. **Concrete and Masonry**: For concrete surfaces such as countertops, walls, and floors, Polyurethane Coating provides an extra layer of protection against stains, moisture, and abrasions. It enhances the durability of concrete in both residential and commercial settings, while also offering easy cleaning and maintenance.
6. **Marine Applications**: Polyurethane Coating’s excellent resistance to water, salt, and UV radiation makes it perfect for marine environments. It can be used on boats, docks, and other marine structures, offering protection against harsh saltwater exposure and environmental wear.

7. **Outdoor Furniture**: Polyurethane Coating is commonly applied to outdoor furniture, providing protection against the elements. Whether for benches, tables, or chairs, the coating helps preserve the furniture's appearance and structural integrity, even in areas exposed to high moisture or temperature fluctuations.
8. **Construction Equipment**: Polyurethane Coating is often used to coat construction equipment and machinery. Its resistance to abrasions, oils, and solvents ensures that equipment remains in good condition despite the harsh working environments typically found on construction sites.

Technical Data Specification

- **Colour**: Clear, Custom Colours Available
- **Finish**: Gloss, Satin
- **Viscosity**: 70–80 KU (Krebs Units)
- **Gloss**: 80–90% (at 60° angle)
- **Flash Point**: 40°C (Closed Cup)
- **Binder Solid**: 50–60%
- **Volume Solid**: 45–55%
- **Dry Film Thickness (DFT)**: 50–75 microns per coat
- **Coverage**: 10–12 m² per liter (depending on the surface texture)
- **Curing Time**: Touch dry in 30 minutes, fully cured in 24 hours
- **Durability**: High resistance to UV, chemicals, abrasion, and impacts
- **Chemical Resistance**: Excellent
- **Moisture Resistance**: Excellent
- **Temperature Resistance**: Up to 120°C (dry heat)
- **Adhesion**: Strong adhesion to metal, wood, concrete, and plastic
- **Thinner**: Recommended Polyurethane Thinner
- **Recommended Coats**: Two coats for optimal durability and protection

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Dosage, Addition, and Method of Application

1. **Dosage**:
    - The recommended coverage for Polyurethane Coating is between 10–12 m² per liter, depending on the surface porosity and texture. For rougher or more porous surfaces, coverage may be lower, so more product may be required for full coverage.
2. **Addition**:
    - **Thinning**: If thinning is required, use the recommended Polyurethane Thinner to adjust the viscosity for spray or brush applications. Typically, 5-10% thinner is added depending on the method of application.
    - **Pigments**: Custom colors can be mixed into the base Polyurethane Coating. Ensure that the pigments are compatible with polyurethane resins to maintain optimal performance.
    - **Hardener**: In certain formulations, a hardener or curing agent is added to enhance the durability and performance of the coating, especially in industrial applications.
3. **Method of Application**:
    - **Surface Preparation**:
        - Surfaces must be clean, dry, and free from dust, oils, grease, or any contaminants before applying Polyurethane Coating. For previously painted surfaces, ensure that the old paint is well-adhered and intact, or remove any peeling paint.
        - Concrete surfaces should be sanded or mechanically abraded to ensure good adhesion.

    - For metal surfaces, any rust or corrosion should be removed before application.
  - **Mixing**:
    - Stir the Polyurethane Coating thoroughly before application to ensure even distribution of the components.
    - If thinning is required, add the recommended amount of thinner and mix well.
  - **Brush or Roller Application**:
    - For small areas or detailed work, apply with a high-quality brush or roller. Apply a thin, even coat and allow it to dry for the recommended time.
    - Re-coat with the second layer after the first coat is touch-dry.
  - **Spray Application**:
    - For large areas or to achieve a smooth finish, use an airless spray gun. Set the spray pressure according to the manufacturer's guidelines.
    - Apply in light, even coats, overlapping each stroke to ensure uniform coverage.
  - **Drying Time**:
    - The coating is touch-dry within 30 minutes and can be recoated after 1-2 hours under standard conditions. Full curing typically takes 24 hours, depending on temperature and humidity.
    - For optimal results, allow the coating to fully cure before exposing the surface to heavy traffic or environmental stress.
  - **Cleaning**:
    - Clean brushes, rollers, and spray equipment immediately after use with Polyurethane Thinner. Once the coating has dried, it may be difficult to remove.

Safety Instructions

1. **Personal Protection**:
   - Always wear gloves, safety goggles, and suitable protective clothing to avoid skin and eye contact with the coating.
   - Use a suitable respiratory mask if working in poorly ventilated areas or if applying large quantities of the coating.
2. **Ventilation**:
   - Ensure proper ventilation in the application area to avoid inhalation of fumes. Work in an open space or use exhaust fans to maintain airflow.
3. **First Aid**:
   - **Inhalation**: If inhaled, move the person to fresh air immediately and seek medical advice if symptoms persist.
   - **Skin Contact**: In case of contact with skin, wash thoroughly with soap and water. Seek medical attention if irritation persists.
   - **Eye Contact**: Rinse eyes immediately with water for at least 15 minutes. Seek medical attention if irritation persists.
   - **Ingestion**: Do not induce vomiting. If swallowed, seek medical attention immediately.
4. **Storage**:
   - Store the coating in a cool, dry place, away from heat, flames, and direct sunlight. Keep containers tightly sealed to prevent contamination.
5. **Disposal**:
   - Dispose of empty containers and leftover product in accordance with local regulations. Do not dispose of the product in water systems, soil, or drains.

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Polyurethane Coating is a versatile and reliable solution for protecting surfaces from the harshest environmental factors. With excellent durability and versatility, it is an ideal choice for industrial, commercial, and residential applications where lasting protection is a priority.