1 Identification of substance:

- **Product details:**
  - **Trade name:** Alkyl Ketene Dimer (AKD Wax)
  - **Application of the substance / the preparation** Sizing material (paper)

- **Supplier/Manufacturer:**
  Xiamen Joyforce Chemical Industrial Co., Ltd
  No. 5 Building
  Shuangli Industrial Park
  Huli District, Xiamen 361009
  China
  Tel: +86 592 586 4569
  Fax: +86 592 511 7592

- **Email competent person:** Joyforce@cnjoyforce.com

- **Information department:** See supplier/manufacturer

2 Hazards identification

- **Hazard description:** not applicable

- **Information pertaining to particular dangers for man and environment:**
  According to current European laws and regulations the product is not dangerous or toxic material (based on the available data). No hazards to be particularly mentioned. Please note the information of this Material Safety Data Sheet.

- **Classification system:**
  The classification was made according to the latest editions of the EU-lists, and expanded using company data and specialized literature.

3 Composition/information on ingredients

- **Chemical characterization:**
  - **CAS No. Description:** 84989-41-3 2-Oxetanone, 3-C12-16-alkyl-4-C13-17-alkylidene derivs.

- **Identification number(s):**
  - **EINECS Number:** 284-932-5

4 First aid measures

- **General information:** If symptoms persist or in case of doubt seek medical advice.

- **After inhalation:** Supply fresh air; consult doctor in case of complaints.

- **After skin contact:** Clean effected skin thoroughly with water and a mild cleansing agent. No residues shall remain on the skin.

- **After eye contact:** Rinse opened eye for several minutes under running water.

- **After swallowing:** If symptoms occur or after swallowing of larger quantities consult a doctor.

- **Information for doctor:**
  - **Treatment:** Symptomatic treatment

5 Fire fighting measures

- **Suitable extinguishing agents:**
  CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Use fire fighting measures that suit the environment.

- **For safety reasons unsuitable extinguishing agents:** Direct jet water

- **Special hazards caused by the material, its products of combustion or resulting gases:**
  Dangerous decomposition product see chapter 10: stability and reactivity

- **Protective equipment:** Wear self-contained respiratory protective device.
Safety Data Sheet

Trade name: Alkyl Ketene Dimer (AKD Wax)

6 Accidental release measures

- Person-related safety precautions: Wear protective clothing.
- Measures for environmental protection: No special measures required.
- Measures for cleaning/collecting:
  - Pick up mechanically.
  - Send for recovery or disposal in suitable receptacles.

7 Handling and storage

- Handling
  - Information for safe handling: No special precautions are necessary if used correctly.
  - Information about protection against explosions and fires:
    - Keep ignition sources away - Do not smoke.

- Storage
  - Requirements to be met by storerooms and receptacles: Store at ambient temperatures and at dry conditions.
  - Information about storage in one common storage facility:
    - Store away from foodstuffs.
    - Store away from feed.
  - Further information about storage conditions:
    - Keep receptacle tightly sealed.
    - Protect from heat and direct sunlight.
  - Storage class 11 Combustible solids

8 Exposure controls and personal protection

- Additional information about design of technical systems: No further data; see item 7.
- Components with limit values that require monitoring at the workplace: Not required.
- Additional information: The lists that were valid during the creation were used as basis.
  - Personal protective equipment
    - General protective and hygienic measures:
      - The usual precautionary measures should be adhered to when handling chemicals.
      - Wash hands before breaks and at the end of work.
      - Avoid close or long term contact with the skin.
      - Use skin protection cream for skin protection.
    - Breathing equipment: Not necessary if room is well-ventilated.
    - Protection of hands:
      - At longer contact: protective gloves
      - To avoid skin problems reduce the wearing of gloves to the required minimum.
      - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
      - Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
      - After use of gloves apply skin-cleaning agents and skin cosmetics.
    - Material of gloves:
      - For undissolved solid substances following materials may be suitable:
        - Polychloroprene rubber (CR)
        - Nitrile rubber, NBR
        - Butyl rubber, BR

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Fluorocarbon rubber (FKM)
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material:**
The exact break-through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Not required.
- **Body protection:** Protective work clothing.

### 9 Physical and chemical properties:

#### General Information
- **Form:** Solid.
- **Colour:** -
- **Odour:** Characteristic

- **Change in condition:**
  - **Melting point/Melting range:** 43-56°C
  - **Boiling point/Boiling range:** undetermined

- **Flash point:** > 100°C

- **Flammability (solid, gaseous):** Product is not flammable.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Density at 20°C:** 0.85 g/cm³

- **Solubility in / Miscibility with Water:** Insoluble

- **Segregation coefficient (n-octanol/water):** 15.4 log POW

### 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications.

- **Dangerous reactions:** No dangerous reactions known

- **Dangerous products of decomposition:**
  In the case of fire or at high temperatures the formation of the following decomposition products is possible.
  Carbon monoxide and carbon dioxide

### 11 Toxicological information

- **Acute toxicity:**
  
  - **LD/LC50 values that are relevant for classification:**
    - Oral LD₅₀ > 10000 mg/kg (rat)
    - Dermal LD₅₀ 6730 mg/kg (rabbit)

- **Primary irritant effect:**
  - **on the skin:** No irritating effect.
  - **on the eye:** No irritating effect.

- **Sensitization:**
  A sensitization may be possible.
  In various tests positive as well as negative results were obtained.

- **Additional toxicological information:**
  The toxicity data mentioned in this chapter are literature data. The product itself has not been tested.
  When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
Safety Data Sheet

Trade name: Alkyl Ketene Dimer (AKD Wax)

The substance is not subject to classification according to the latest version of the EU lists.

12 Ecological information

- Ecotoxic effects:
- Aquatic toxicity:
  EC₅₀/24h > 500 mg/l (daphnia magna)
  LC₅₀/96h > 10000 mg/l (brachydanio rerio)
  NOEC 5000 mg/l (brachydanio rerio)
- Remark: (literature data)
- General notes: Not hazardous for water. Classification according to appendix 3 of VwVwS (German regulation) dated 17.05.1999.

13 Disposal considerations

- Product:
  - Recommendation: Disposal according to instructions of local authorities.
- Uncleaned packagings:
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- Land transport ADR/RID (cross-border):
  - ADR/RID class: No hazardous good according to the regulation.
- Maritime transport IMDG:
  - IMDG Class: No hazardous good according to the regulation.
- Air transport ICAO-TI and IATA-DGR:
  - ICAO/IATA Class: No hazardous good according to the regulation.

15 Regulations

- Markings according to EC guidelines:
  The substance(product) is not subject to classification according to EC-directives and other sources of literature known to us. Observe the general safety regulations when handling chemicals.
- National regulations
- Water hazard class: Not hazardous for water

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.