



GOVERNMENT OF KHYBER PAKHTUNKHWA
CLIMATE CHANGE, FORESTRY, ENVIRONMENT
AND WILDLIFE DEPARTMENT
(SECTION ENVIRONMENT)

NOTIFICATION

Peshawar Dated the 25/07/2025

No. SO(ENVT)/CCFE&WD/1-8/EPC-2025: In exercise of powers conferred under Clause xxii of Section 7 of the Khyber Pakhtunkhwa Environmental Protection Act, 2014, (Khyber Pakhtunkhwa Act No. XXX of 2022), the Khyber Pakhtunkhwa Environmental Protection Council (EPC) in its 3rd Meeting held on 13.05.2025 has been pleased to approve the following guidelines for General Environmental Approval (GEA);

GUIDELINES FOR GLUE MANUFACTURING

Introduction

The glue industry plays a significant role in various manufacturing processes, producing adhesives for industrial, commercial, and domestic use. However, glue manufacturing can have substantial environmental impacts if not managed properly. These guidelines are designed to help glue manufacturers minimize environmental hazards, comply with environmental regulations, and adopt sustainable practices.

Key Environmental Concerns

1. **Air Emissions**
 - i. Release of volatile organic compounds (VOCs) during manufacturing and application.
 - ii. Dust emissions from raw material handling and processing.
2. **Water Pollution**
 - i. Discharge of untreated or partially treated wastewater containing chemicals, resins, and other contaminants.
 - ii. Spillage and runoff during production and storage.
3. **Solid and Hazardous Waste**
 - i. Generation of non-biodegradable waste from raw material packaging.
 - ii. Hazardous waste, such as leftover adhesives and chemical residues.
4. **Energy and Resource Consumption**
 - i. High energy usage in production processes.
 - ii. Use of non-renewable raw materials.
5. **Occupational Health and Safety Risks**
 - i. Exposure of workers to harmful chemicals, fumes, and dust.

Guidelines for Environmental Management

1. Air Pollution Control

- i. Install and maintain air pollution control devices, such as scrubbers and carbon filters (charcoal & wood for adsorption of VOCs), to capture VOCs and dust emissions.
- ii. Use low-VOC or water-based adhesives to reduce emissions. (Examples; animal Gelatin (from Animal Hides, Bones and Connective tissues), plant based adhesives like starch



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and petroleum adhesives that contains low VOCs (epoxy resins, triethylene tetramine (TETA)).

- iii. Implement closed-loop systems to prevent the escape of harmful gases.
- iv. Conduct regular air quality monitoring to ensure compliance with local air emission standards.

2. Wastewater Management

- i. Treat all wastewater before discharge using technologies such as chemical treatment (neutralization of pH), biological treatment (use of microorganism), and membrane filtration (Physical Treatment).
- ii. Design containment systems to prevent accidental spillage or runoff.
- iii. Recycle and reuse treated water in non-critical processes.
- iv. Monitor effluent quality regularly to meet National Environmental Quality Standards (NEQS).

3. Solid and Hazardous Waste Management

- i. Develop a waste segregation system for recyclable, non-recyclable, and hazardous waste.
- ii. Use certified hazardous waste disposal facilities for chemical residues and expired products.
- iii. Promote recycling of raw material packaging and adopt bulk packaging to reduce waste.
- iv. Train employees on safe handling and disposal of hazardous waste.

4. Resource and Energy Efficiency

- i. Optimize production processes to reduce energy consumption.
- ii. Use energy-efficient equipment and renewable energy sources where feasible. (LPG instead of fuel wood).
- iii. Source sustainable raw materials to minimize environmental degradation.
- iv. Implement a raw material inventory system to reduce overstocking and waste.

5. Occupational Health and Safety

- i. Provide appropriate personal protective equipment (PPE) to workers handling hazardous substances.
- ii. Ensure proper ventilation in production areas to minimize inhalation of harmful fumes.
- iii. Conduct regular health checkups and safety training for workers.
- iv. Display Material Safety Data Sheets (MSDS) for all chemicals used in the facility.

6. Environmental Monitoring and Reporting

- i. Conduct regular environmental audits to identify and mitigate risks.
- ii. Maintain records of emissions, waste generation, and treatment processes.
- iii. Submit periodic environmental compliance reports to relevant authorities.

Regulatory Compliance



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- i. Adhere to local, national, and international environmental regulations and standards applicable to the glue industry.
- ii. Obtain and renew necessary environmental permits and licenses.

Best Practices for Sustainability

- i. Adopt cleaner production technologies and eco-friendly raw materials.
- ii. Engage in research and development to create biodegradable and non-toxic adhesives.
- iii. Collaborate with industry peers and regulatory bodies to share knowledge and improve environmental practices.
- iv. Educate customers on the safe use and disposal of glue products.

Emergency Preparedness

- i. Develop and implement an emergency response plan for chemical spills, fire incidents, and other potential hazards.
- ii. Train employees on emergency procedures and conduct regular drills.
- iii. Equip the facility with spill kits, fire extinguishers, and first-aid stations.

Conclusion

By following these guidelines, the glue industry can significantly reduce its environmental footprint, ensure regulatory compliance, and promote sustainable practices. Commitment to environmental stewardship not only safeguards natural resources but also enhances the industry's reputation and long-term viability.

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**Secretary to Govt. of Khyber Pakhtunkhwa
Climate Change, Forestry, Environment & Wildlife
Department**

No. SO(ENVT)/CCFE&WD/1-8/EPC-2025:

Copy for information to;

1. All members of Environmental Protection Council (EPC) Khyber Pakhtunkhwa
2. PS to Secretary Climate Change, Forestry, Environment & Wildlife Department, Khyber Pakhtunkhwa


**Muhammad Ishaq
Section Officer (Environment)**