



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 SOAP AND DETERGENT UNITS

INTRODUCTION:

SOAP MANUFACTURING UNIT:

Soap is manufactured by treating animal fat and oil of natural sources, with caustic soda and adding the sodium or potassium silicates to have a soft lump of moldable cleaning agent. The chemical composition is mainly either potassium salt of fatty acid or sodium salt of fatty acid.

The process of soap manufacturing can be summarized as follows:

1. *Animal fats and acid oil from the neutralization of the cooking oil and ghee is taken in large utensil ad cooked for 2.5 hours.*
2. *When the mixtures boil, in the second step the oil is mixed with the caustic soda in solid form is added along with some amount of silicates and cooked for further 30 minutes. While stirring regularly*
3. *The cooked soap so formed is cooled down and then added to molding machines.*

Fatty acid + Caustic SodaHeating Cooking for 2.5 hours ---- addition of Silicates agitating for 30 minutes and ---- Cooling ---- Molding---- Rapping ----- Marketing

Types of soap manufacturing units:

A. Cottage or house hold :

The units are mostly manual in nature and consist of the following machinery

Large cooking kettles, mixer molding machine and cutting and rapping. The daily capacity the units range from 300 to 500 Kgs per day or in good season upto 1000 Kgs. Each soap is not more than 200 gs. The rate of each cake is 40 to 50 rupees. The suitable size of the plot is should not be less than 3 kanals and should go upto 6 kanals. In case of narrow plot the management may not be able to move easily.



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B. Large manufacturing plants:

These plants are mostly operating inside Ghee mills mostly having a capacity of 2000 to 4000 kg per day. Cooking is done through steam and usually having waste water issues.

ENVIRONMENTAL CONCERN WITH SOAP UNIT.

Air pollution;

As stated earlier the process involves cooking of fats with caustic soda for nearly 3 to 4 hours, during this whole period regular supply of heat is continued. The sources of fuel may be either natural gas or wood or furnace oil or waste plastic material. This point requires treatment of exhaust gases before emission into the environment. Special care is needed as the burning of plastic material may cause server air pollution. Therefore, the condition of the regulating should be that fuel used for the purpose of cooking should only be clean fuel. If wood is used then particulate retention system of cyclone origin should be installed. During the process of manufacturing we did not noticed the any bad smell. Neither the report of the poultry oil etc has been shared or accepted by the managmnet of the units.

Water Pollution:

The only water used during the process is that of washing of the kettles and bathing cleaning water used by labors. This usually does not have major impacts on environment and requires only construction of a small sized retention tank so that the discharge can be regulated.

Solid waste:

As stated earlier the final product is mostly the soap material that is only Molded and raped. Only solid waste of rapping material is witnessed and the ash of the burning process. This waste needs proper disposal.

Health Safety and Environment Concerns:

Boards regarding the inflammability are required to be affixed. Plantation of not less than 50 should be accepted. Goggles , mask, shoes and gloves should be worn by all the staff involved in production.

First aid kit should be provided for addressing minor injuries.

Detergents manufacturing unit:

It is a synthetic cleaning agent made from petrochemicals although some newer plants-based or bio-based options are becoming available. These are surface tension reducing agent having greater tendency and power of cleaning than soaps. They are efficient in hard water than soaps and works at low temperature than soap.



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Manufacturing Process:

Ingredients:

The Detergents are Manufactured From the Following Chemicals:

| | |
|-----------|------------------------------|
| Soda Ash | Sodium Bicarbonate |
| Acid oil | Alkyl Benzene Sulphonic acid |
| Abrasive | Calcium carbonate |
| Fragrance | Any type. |

The first step in the process is mixing of the appropriate amount of soda ash and sulphonic acid and letting it to cure for 2 to 3 hours. During the process of mixing the chemical reaction results in formation of the salt which is mostly sodium salt of alkyl benzene sulphonate used as cleaning agent. During the process of reaction heat is liberated which results in fumes formation, that if inhaled can be dangerous.

The process of mixing can be done in the hoppers or in case of small cottage type industry in close room mostly on the floor (manually) the curing is required in case of manual process. It is recommended that hoppers/mixers should be used. The mixture so formed is uniformed and packed in polyethylene or polystyrene plastic rapping.

During the uni-forming process the emission of dust was observed though confined to 100 feet radius and room.

Soda ash+ sulphonic acid----- mixing and curing ----- uni-forming-----packing-----marketing

Environmental issues:

Water issues:

No water is used in manufacturing process therefore no waste water is generated. The mixers and packing is always done in dry conditions and not washed.

Air Pollution:

During the process of mixing, uniforming and packing slight amount of dust is generated that is localized and remains within the production hall. However the employees working in the



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production area are at great risk due to inhalation of the detergent dust material. Proper PEPs should be provided to them.

Solid waste:

During the process of packing sometimes the rappers burst and become unusable these are then thrown as reject items and needs proper handling and disposal.

Health Safety and Environment Concerns:

Boards regarding the inflammability are required to be affixed. Plantation of not less than 50 should be accepted. Goggles mask shoes and gloves should be worn by all the staff involved in production.

First aid kit should be provided for addressing minor injuries.



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**FORMAT OF GEA REPORT TO BE FILLED BY
THE PROPONENT OR VISITING OFFICER.**

File No. _____

Date _____

General Information

1. Project Name or Title _____
2. Project Proponent (Department, organization, or owner) _____
3. Address _____
4. Telephone _____
5. E-mail _____
6. Representative of the Proponent _____
7. Designation _____
8. Name of the person who conducted this assessment _____
9. Designation _____

Project Information

10. Project Location & GPS Coordinates _____
11. Cost of the Project _____
12. Area of the proposed land for the project
Total _____ m^2
Proposed covered _____ m^2
Open space _____ m^2
13. Brief Project Description _____

14. Design production capacity of the unit _____

15. Number and type of qualification of required staff to run the project? _____



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Construction

16. Who owns the proposed land for the project? _____

17. What is the present use of the land? _____

18. Are there any settlements on the land? _____

19. If yes, please specify

Number of settlements _____

Will any compensation be paid to them? _____

20. Are there any structures on the proposed site now? Yes No

21. Are there any trees on the proposed site? Yes No

22. Will any tree be removed? Yes No

23. If yes, how many? _____

24. Period of construction (start and end dates) _____

25. Is construction work during the night planned? Yes No

26. Is the proposed project located in an ecologically sensitive area? Yes No

27. Whether any storage area is available for chemicals. Caustic soda and soda Ash, silicate, acid oil and animal fats.

Please specify and explain

28. What type of HSE equipment is needed or shall be supplied.

Details and numbers

29. Whether the industry is located in an area having TMA services. Yes No

30. What is the source of fuel in the area or proposed by the unit management.

Detail description -----

31. What is the type of air pollution system installed or proposed?

Detail description -----

32. Is there any surface water body (river, canal, stream, lake, and wetland) within 1, 00

Ft of the proposed site?

Yes

No

If yes, describe each water body:



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| Name (including type, i.e., river, canal or stream) | Dimensions | Status and Uses (Is it polluted? Is domestic or other wastewater discharged to it? What are its uses, eg, agriculture, domestic, industrial, washing, fishery) |
|---|------------|--|
| | | |
| | | |
| | | |
| | | |

33. Is there any groundwater well on the proposed site or within 200 ft of the proposed site?

Yes
 No

If yes, describe each well:

| Type (Dug well, tube well, hand pump) | Location (Village, road, mohalla, etc. and distance from the site) | Depth and Yield | Uses (Drinking, agriculture, domestic, industrial, washing, livestock) |
|---------------------------------------|--|-----------------|--|
| | | | |
| | | | |
| | | | |
| | | | |

34. Are there any reserved forest or protected area within 1,00 m of the proposed site?

Yes
 No

If yes, please describe? _____

35. What is the present land use in the vicinity (roughly a radius of 100 m) of the proposed site?

| | Residential (Thick, Moderate, Sparse) | Commercial (Office, Shops, Fuel Stations) | Open Land (Parks, Farmlands, unutilized plots, barren) | Industrial | Other |
|--|--|--|---|------------|-------|
| | | | | | |



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| | | | | | |
|-------------|--|--|------|--|--|
| | | | land | | |
| Description | | | | | |

36. Roughly, how many houses are within a radius of 100 Ft from the boundary wall of the proposed site?

37. What is the total population of the area? _____

38. What proportion of the houses in the area are *pukka, semi-pukka, and kucha*? _____

What are the main sources of income of the surrounding community?

39. Is there any site of cultural importance (graveyard, shrine, mosque, archeological site) within 100 m of the proposed scheme?

Yes

No

If yes, please describe? _____

Reporting officer

Decision of Director of the concerned Directorate

-sd-

**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)