

Standard Operating Procedure and Checklist of Minimal Requisite Facilities for utilization of hazardous waste under Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016

Utilization of Used Oil and Off Specification Products (Shampoo, Detergent & Creams) for Recycling



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**Central Pollution Control Board
(Ministry of Environment, Forest & Climate Change,
Government of India)
Parivesh Bhawan, East Arjun Nagar,
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Utilization of Used Oil and Off Specification Products (Shampoo, Detergent & Creams) for Recycling

Procedure for grant of authorization by State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) for utilization of Hazardous waste

- 1) While granting authorization for utilization of hazardous wastes, SPCBs/PCCs shall ensure that authorization is given only to those wastes for which Standard Operating Procedures (SoPs) for utilisation have been circulated by Central Pollution Control Board (CPCB) ensuring the following:
 - a. The waste (intended for utilization) belongs to similar source of generation as specified in SoP.
 - b. The utilization shall be similar to as described in SoP.
 - c. End-use/ product produced from the waste shall be same as specified in SoP.
 - d. Authorization shall be granted only after verification of details and minimum requisite facilities as given in SoP.
 - e. Issuance of passbooks (similar to passbooks issued for recycling of used oil, waste oil, non-ferrous scraps, etc.) for maintaining records of receipt of hazardous waste for utilization.
- 2) After issuance of authorization, SPCBs/PCCs shall verify the compliance of checklist and SoP on quarterly basis for initial 2 years; followed by random checks during subsequent period for atleast once a year.
- 3) In-case of lack of requisite infrastructures with the SPCBs/PCCs, they may engage 3rd party institutions or laboratories having EPA, 1986/NABL/ISO17025 accreditation / recognition for monitoring and analysis of prescribed parameters in SoPs for verification purpose.
- 4) SPCBs/PCCs shall provide half yearly updated list of units permitted under Rule 9 of Hazardous & Other Wastes (Management & Transboundary Movement) Rules, 2016 (HOWM Rules, 2016) to CPCB and also upload the same on SPCB/PCC website, periodically. Such updated list shall be sent to CPCB on half yearly basis i.e., by July and January respectively.
- 5) Authorization for utilisation shall not be given to the units located in the State/Union Territory where there is no Common TSDF, unless the unit ensures authorised captive disposal of the hazardous waste (generated during utilisation) or its complete utilisation or arrangement of sharing with any other authorised disposal facility.
- 6) In case of the utilization proposal is not similar with respect to source of generation or utilization process or end-use as outlined in this SoP, the same may be referred to CPCB for clarification /conducting trial utilization studies and developing SoPs thereof.
- 7) The source and work zone standards suggested in the SoP are based on E(P)A notified and OSHA standard respectively, however, SPCBs/PCCs may impose more stringent standards based on the location or process specific conditions.



75.0 Utilization of hazardous waste (H.W):

Type of HW	Source of generation	Recovery/Product
Used Oil and Off Specification Products (Shampoo, Detergent & Creams), Category 5.1 and 28.4 of, Schedule I (of HOWM Rules, 2016) respectively.	Off Specification Products generated during manufacturing of health care product and used oil from service station/ other industries etc.	Car & floor washing solution, Tyre polishing, Tent houses to wash their tent cloths & carpets respectively. Used oil recycled and send to Tyre manufacturers and Bitumen companies

75.1 Source of Waste:

Off Specification Products generated during manufacturing of health care products and used oil from service station/ other industries etc. the hazardous wastes are listed under the Category 28.4 and 5.1 of, Schedule I of HOWM Rules, 2016.

75.2 Utilization Process

a.) Used oil:

Used oil generated from service stations and hydro power generation units is collected and undergoes pre-treatment, centrifugation and dehydration where the water from the oil and sludge gets separated. The sludge generated will be sent to TSDF and collected water will be treated in the ETP. The refined oil will be sold to tyre manufacturers and Bitumen companies.

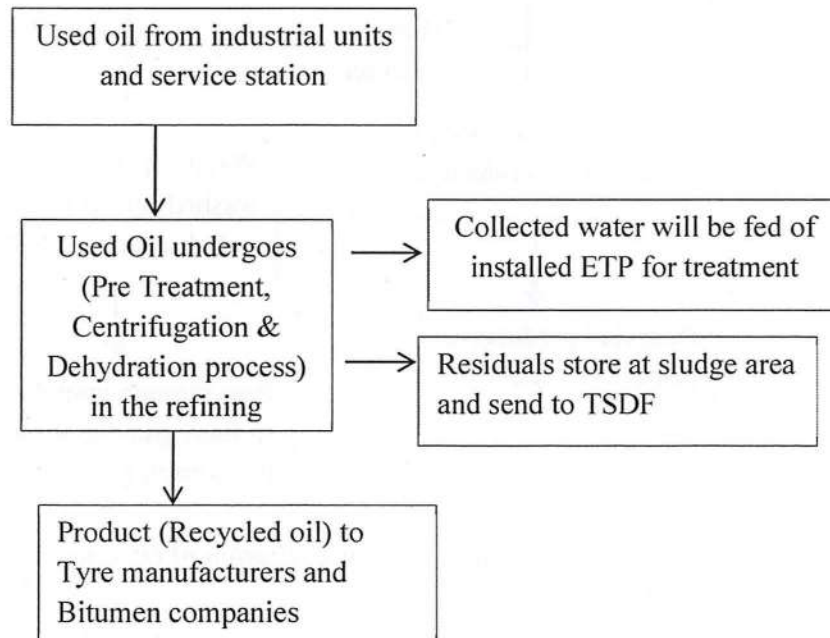


Figure: 1-Process flow diagram for utilization of Used oil.

b.) Off specification products:

Off specification products (i.e., shampoo/ cream/ detergent) will be collected from the factories. Removal of shampoo/ cream/ detergent from sachets/tubes/ bottles will be carried out at the unit primases. Further plastic tubes / bottles will be shredded. Plastic material and material (shampoo/ cream/ detergent) will get screened and the material is sent to recycler.

Plastic material will be washed and kept for drying on the mesh, effluent will be discharged to ETP. Cleaned plastic material will be sold to granular manufacturer plants. Color will be added to the material (shampoo/ cream/ detergent) and then recycled Shampoo shall sell to Car/floor washing solution manufacturers, recycled creams to Tyre polishing vendor and recycled detergent to tent houses to wash their tent cloths & carpets

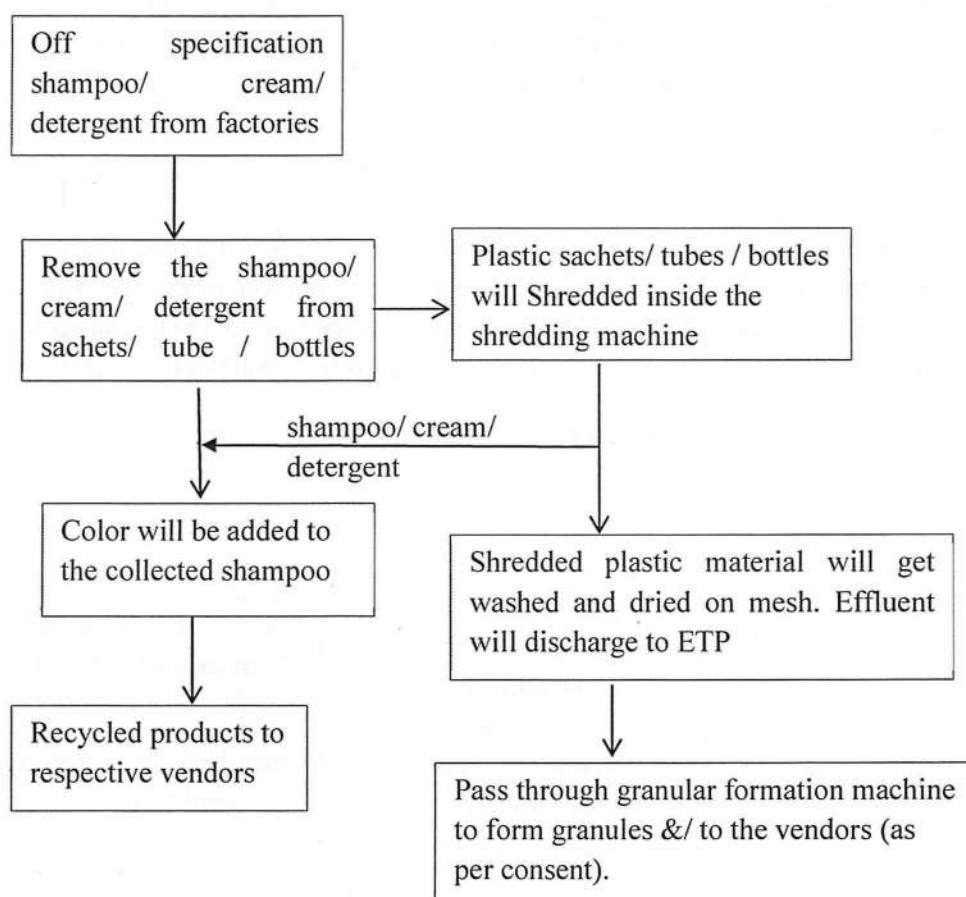


Figure: 2-Process flow diagram for utilization of Off-specification product.

75.3 Product Usage / Utilization

Off-specification products i.e., shampoo, cream and detergent recycled to produce Car & floor washing solution, Tyre polishing and for tent houses to wash their tent cloths & carpets respectively. Used oil recycled and send to Tyre manufacturers and Bitumen companies.

75.4 Standard Operating Procedure for utilization

This SoP is applicable only for utilization of Used oil and Off specification products (Shampoo, Detergent & Creams) for Recycling.

- 1) The unit shall ensure the removal of shampoo/ cream/ detergent from plastics (sachets/ tubes / bottles) through proper segregation method and further plastics contents shall be handled (i.e., recycled &/ disposed) in accordance with "Plastic Waste Management Rules, 2016".
- 2) Used oil procured for recycling shall meet the specification mentioned in the part A of Schedule V (HOWM Rules, 2016).
- 3) The unit shall install firefighting system specially in the Used oil handling area.
- 4) Used oil and its recycled product shall be handled in compatible containers with an unbroken screw top lid.
- 5) The unit shall ensure control of fugitive emissions through dust/fumes extraction system followed by APCD such as wet scrubber (As prescribed in the consent) near plastic shredding and extruder machine area.
- 6) Products recovered from recycling the off specification products shall not be sell as products that intend to intended to be rubbed, poured, sprinkled or sprayed on, or introduced into, or otherwise applied to, the human body or any part thereof for cleansing, beautifying, promoting attractiveness or altering the appearance.
- 7) Treatment and disposal of wastewater: Wastewater generated from floor-washings, spillages, washing plastics, collected water while recycling the used oil, scrubber bleed shall be treated in an Effluent Treatment Plant (ETP) or may sent to Common Effluent Treatment Plant (CETP) for final disposal or be treated further in a captive facility to comply with surface water discharge standards. In case of zero discharge, the treated waste water from ETP may be managed as per conditions stipulated by the concerned SPCB/PCC.
- 8) The treated effluent shall be discharged in accordance with the conditions stipulated in the Consent to Operate issued by concerned SPCB/PCC under the Water (Prevention and Control of Pollution) Act, 1974.
- 9) Shampoo, Detergent, Creams & Used oil shall be collected and stored under cool, dry, well ventilated covered storage shed(s) with impervious floor within premises, so as to eliminate rain water intrusion. Further, the storage sheds shall have proper slope and collection pit so as to collect seepage/floor washings. The collected seepage/floor washings shall be channelized to ETP for treatment.
- 10) The unit shall maintain proper ventilation in the work zone and process areas. All personnel involved in the plant operation shall wear proper personal protective equipment (PPE) specific to the process operations involved and type of chemicals handled as per Material Safety Data Sheet (MSDS). The safety precautions of the worker shall be in accordance with the Factory Act, 1948, as amended from time to time.

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- 11) The hazardous wastes generated during recycling of Shampoo, Detergent, Creams and used oil (namely Oil sludge, APCD residue, ETP sludge etc.) shall be collected and temporarily stored in non-reactive drums/ bags under a dedicated hazardous waste storage area and sent to authorized common TSDF or other authorized facility within 90 days from generation of the waste in accordance with the authorization issued by the concerned SPCB/PCC.
- 12) The Used Oil and Off Specification Products shall be procured from authorized industries under HOWM Rules, 2016.
- 13) Transportation of Used Oil and Off Specification Products shall be carried out by sender (generator) or receiver (utilizer) only after obtaining authorization from the concerned SPCB/PCC under HOWM Rules, 2016. Requisite manifest document shall be followed as laid down under the said Rules.
- 14) Prior to utilization of Used Oil and Off Specification Products, the unit shall obtain authorization for storage, utilization and disposal of Used oil and Off specification products (Shampoo, Detergent & Creams) from the concerned SPCB/PCC under HOWM Rules, 2016.
- 15) In case of environmental damages arising due to improper handling of hazardous wastes including accidental spillage during generation, storage, processing, transportation and disposal, the occupier (sender or receiver, as the case may be) shall be liable to implement immediate response measures, environmental site assessment and remediation of contaminated soil/ groundwater/ sediment etc. as per the "*Guidelines on Implementing Liabilities for Environmental Damages due to Handling & Disposal of Hazardous Wastes and Penalty*" published by CPCB.
- 16) The unit shall provide suitable fire safety arrangements and flame proof electrical fittings.
- 17) During the process of utilization and handling of hazardous waste the unit shall comply with requirement in accordance with the Public Liability Insurance Act, 1991 as amended, wherever applicable.

75.5 Record>Returns Filing

- 1) The unit shall maintain a passbook issued by concern SPCB/PCC and maintain details of each procurement of Used oil and Off specification products as mentioned below:
 - Address of the sender
 - Date of dispatch
 - Quantity procured
 - Seal and signature of the sender
 - Date of Receipt in the premises
- 2) A log book with information on source and date of procurement of Used oil and Off specification products, date wise utilization of the same, hazardous waste generation and its disposal, etc. shall be maintained including analysis report of fugitive emission monitoring & effluent discharged, as applicable.
- 3) The unit shall maintain record of hazardous waste generated, utilized and disposed as per



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Form 3 & file annual returns in Form 4 as per Rule 20 (1) and (2) of the HOWM Rules, 2016.

- 4) The unit shall submit quarterly and annual information on hazardous wastes consumed, its source, products generated or resources conserved (specifying the details like, type and quantity of resources conserved) to the concerned SPCB/PCC.

75.6 Standards

- 1) Fugitive emission in the work zone area shall comply with the standards as prescribed by the concerned SPCB/PCC.
- 2) Monitoring of the Fugitive emission shall be carried out quarterly for first year followed by at least annually in the subsequent year of utilization. The monitoring shall be carried out by ISO 17025 accredited or EPA, 1986 approved laboratories and the results shall be submitted to the concerned SPCB/PCC on a quarterly basis.
- 3) Standard for wastewater discharge: Treated effluent shall be discharged in accordance with the conditions stipulated in Consent to Operate issued by concerned SPCB/PCC under the Water (Prevention and Control of Pollution) Act, 1974. In case of zero discharge or no discharge condition stipulated in the said consent or non-availability of CETP, zero discharge shall be met.

75.7 Siting of Industry

Facilities for utilization of Used oil and Off specification products shall be preferably located in a notified industrial area or industrial park/estate/cluster and in accordance with Consent to Establish issued by the concerned SPCB/PCC.

75.8 Size of Plant and Efficiency of Utilisation

This SoP is applicable for utilization of Used oil and Off specification products recycling. The yield of recycling during trial run is observed around 96 – 99 % for Off specification products and 84 – 87 % for Used oil. Therefore, requisite facilities of adequate size of storage shed and other plant & machineries shall be installed accordingly.

75.9 Checklist of Minimal Requisite Facilities

Sl. No	Particulars
1.	Cool, dry well-ventilated covered sheds for Used oil and Off specification products and process activities within premises and dedicated hazardous storage area for temporary storage of hazardous waste generated during utilization process.
2.	Compatible containers with an unbroken screw top lid for used oil.
3.	Firefighting system with alarm in the Used oil handling area.
4.	Shredder and ETP
5.	Fumes extraction system followed by APCD like wet scrubber near plastic shredding and extruding area.

