1. General Characteristics of Textile Wastewater:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Category | BOD(ppm) | COD (ppm) | PH | Temperature © |
| High | 500 | 1500 | 10 | 28 |
| Average | 270 | 970 | 9 | 28 |
| Low | 100 | 460 | 10 | 31 |

Table 1: Characteristic of dye effluents

|  |  |
| --- | --- |
| Metals | Mg/l |
| Cr | 19.2 |
| Cd | 16.7 |
| Ni | 8.5 |
| Zn | 15.8 |
| Cu | 47.7 |
| Fe | 7.5 |
| Pb | 32.2 |

Table 2: Metal present in dye effluents

1. TREATMENT OF TEXTILE EFFLUENTS

Textile industry generates highly polluting wastewater which contains high colour, TDS, toxic metals. Many methods are used for removal of dye by conventional methods including chemical oxidation, coagulation and adsorption process, biological process but they cannot be individually enough to remove dye from wastewater. Degradation of dyes from textile effluent is very tricky because of complex structure and recalcitrant nature of dyes. Advance oxidation processes (AOPs) has great potential to degrade the dyes than conventional methods and it has proved itself as a promising alternative to biological, chemical and physical technique to remove the dyes from textile effluents.

Most of the dye effluent is generated from preparation processes rather than dying operation in textile industry. Normal wastewater treatment plants are not suitable for removing the reactive dyes from textile effluent due to their retardation towards the aerobic and short period anaerobic treatment. Mainly 3 methods are used for treatment of textile effluent. Those methods have been detail categorized on the basis of their working principle involved.

1. Physical Treatment
2. Chemical Treatment
3. Biological Treatment

* Advanced Oxidation Process: Advance oxidation processes (AOPs) has great potential to degrade the dyes than conventional methods and it has proved itself as a promising alternative to biological, chemical and physical technique to remove the dyes from textile effluents. AOPs are operating at near atmospheric pressure and temperature which are based on formation of hydroxyl radicals to initiate the oxidation of organic pollutants. AOP can thoroughly oxidize the organic pollutants to CO2, H2O, salt. AOP are used for degrading the dissolved organic pollutants such as cyclic compounds, halogenated hydrocarbons, phenols, pesticides as well as more suitable for inorganic pollutants such as nitrile, sulfide and cyanide.
* Cultivation of Microalgae in textile wastewater
* Mechanism of pollutant removal in bioremediation of textile wastewater.
* Microalgal species employed in bioremediation of textile wastewater.