



ENVIRONMENTAL FRIENDLY AND BENEFICIAL IMMERSION OF GANESH IDOL

Rahul A Tapke¹, Mohammad Faisal A², Sumit A. Ade³, Prashant R. Tayade⁴

¹Chemical department of J.D.I.E.T Yavatmal, Maharashtra, India, rahultapke12@gmail.com

²Chemical department of J.D.I.E.T Yavatmal, Maharashtra, India, mohammadfaisal9325@gmail.com

³Chemical department of J.D.I.E.T Yavatmal, Maharashtra, India, sumitade143@gmail.com

⁴Chemical department of J.D.I.E.T Yavatmal, Maharashtra, India, prashanttayade1@rediffmail.com

Abstract

Shree Hindu deity pageant, one among the foremost widespread festivals in India is well known within the states of geographical region, Tamilnadu, Karnataka, province and alternative states but was historically the idols were graven out of clay (shadu) for worship and when the pageant it absolutely was came to the planet by immersing in water that gets disintegrated mechanically and therefore the same clay is reused next year. but in recent years as a result of respectable increase within the demand for additional idols also as larger idols, plaster of paris (POP) is being employed for Hindu deity idols preparation Plaster of Paris is extracted from mineral rock and is includes of Ca and sulfate. once mineral is heated at concerning a hundred and fifty degree Centigrade it losses water and produces powder PoPCa and metal concentration in water will increase considerably resulting in increase within the hardness of water. POP do not easily dissolve in water which is harmful and hazardous effect ceating in water. But the National atmosphere Engineering Institute (Neeri) here has developed a way to harmlessly dissolve plaster of paris (PoP) idols.

Keyword: POP Ganesh idols, caustic soda, water

1. INTRODUCTION

Shree Hindu deity pageant, one among the foremost widespread festivals in India is well known within the states of geographical region, Tamilnadu, Karnataka, province and alternative states. Particularly it's Maharashtrian tradition to worship shree Hindu deity throughout Hindu deity chaturthi to Anantchaturdashi for 10 days. The period of the worship varies from 5 day upto 10 days in several communities. When pageant the idols area unit immersed within the ocean or in watercourse. Historically the idols were graven out of clay (shadu) for worship and when the pageant it absolutely was came to the planet by immersing in water that gets disintegrated mechanically and therefore the same clay is reused next year. But in recent years as a result of respectable increase within the demand for additional idols also as larger idols, plaster of paris (POP) is being employed for Hindu deity idols preparation. The scale of family Hindu deity idols varies from one to two feet (~2 - ten kg) whereas the idols that area unit worshiped in common (sarvajanik) might vary from five to fifteen feet. In few cases the scale is also as massive as 25-30 feet tall. Processing Suggestions Done (Unique Article) This cycle was meant to represent the cycle of creation and disintegration in nature. Attributable to inaccessibility and fragility of clay idol currently day's Plaster of Paris (POP) is being

employed for the most part to create idols particularly larger idols attributable to the strength and stability of POP. POP isn't a present material and contains mineral, sulphur, phosphorus and metallic element. The POP idols don't dissolve in water and when immersion remains per se within the water and pollutes lake, ponds, rives and ocean. The chemical paint accustomed adorn the Hindu deity idol contain mercury, lead, metal and carbon and this will increase the acidity and serious metal content within the water. Careless selling of Hindu deity idols in water bodies blocks the natural flow of water and conjointly disturbs the aquatic life. This leads to stagnation and breeding of mosquitoes and alternative harmful pests. The impure water causes many diseases together with skin diseases. Therefore there's a necessity of a method which may utterly disintegrate the POP idols and create the method eco friendly.

1.1 Effect of POP idol immersion on environment

- 1) The immediate and most discernible impact of POP idol immersion is that it makes the water cloudy.
- 2) Non-biodegradable idols will block the natural flow of water bodies, permitting stagnation.
- 3) Mineral being natural material doesn't discount the actual fact that adding massive quantities of it to water

can raise its hardness and cut back its life-carrying capability.

4) The idol immersion in stream water show many vital impacts like steep rise in concentration of significant metals, dissolved solids, and acid content, and a visit dissolved chemical element. It's studied by testing the water quality before and when idol immersion.

5) In Pune, most of the immersions occur at the confluence of the Mula and Mutha rivers, and it's common expertise that the floating idols later grind to a halt in waterworks installations, intake wells

6) The paints used for decorating the idols ar of various sorts as water paints, fluorescent colours, water informant like warnish& polish.

7) In terms of health impacts, paints ar a larger supply of hazard and most of these used for decorating idols ar chemical-based. They contain significant metals like mercury, atomic number 48 and lead, that ar neurolysin (nerve poison) and toxin (poison to kidneys).

1.2 Uses of Plaster of Paris

- It is employed within the industry either as a artefact or rock combination for road building.
- It is additionally employed in hospitals to allow support for the bones burned throughout the accidents.
- Plaster of Paris is employed to form block decorations.
- Statues that used for the decoration are created of POP attributable to its strength and its hardness with water. Ammonium sulphate derived after dissolving plaster of paris idols can be used as a fertiliser for plants.

2. LITERATURE SURVEY

2.1 Hyderabad

The leavening soda in your room will currently save a lake. In its latest breakthrough, the National atmosphere Engineering Institute (NEERI) here has developed a way to harmlessly dissolve plaster of paris (PoP) idols. Neeri plans to undertake out the strategy at several immersion ghats within the town. NEERI would be mistreatment leavening soda, or ammonium ion carbonate, to dissolve the PoP idols, which might otherwise stay as poisonous sludge within the water, taking months to decompose. The ammonium ion carbonate would be another to the water within the stairway, leading to the PoP disintegrating into bicarbonate and ammonium ion salt. Ammonium salt could be a famous fertilizer which will be directly applied to the plants, same associate environmental engineer with NEERI. This salt would float on high of the water in liquid form; it will be accustomed scale back the pH of the soil. carbonate settles at rock bottom, and may be dredged up and accustomed manufacture cement. This project would be concerned on associate experimental basis this year.

“When the idols square measure discharged into the water, the PoP and poisonous serious metals augment the hardness of the water, poignant atomic number 8 levels and aquatic life greatly

2.2 Pune

According to NCL officials, a solution made of ammonium bicarbonate, a common rising agent used by bakeries, can dissolve idols made of plaster of Paris (PoP) which would produce sludge and calcium sulphate, a widely used fertilizer. “About 20% ammonium bicarbonate, in the powder form, will be dissolved in water to make this solution. Plaster of Paris is made of gypsum and will react with this solution to form.

Calcium sulphate which may be used as a fertilizer and sludge or carbonate that may build chalk,” aforesaid senior NCL somebody Shubhangi Umbarkar. the main target was on employing a chemical which might not hurt the setting. “We experimented with bicarbonate that is hydrogen carbonate, however sulfate, the by-product, was unusable,” intercalary Umbarkar. The project is that the effort of 1 and [*fr1] years, involving the Pune Municipal Corporation (PMC), Cummins Bharat and therefore the NCL to prevent pollution of the city’s water bodies on immersion day.

3. RESULT AND DISCUSSION

3.1 Plaster of Paris Ganesha Idols

Plaster of Paris is extracted from mineral rock and includes of Ca and sulphate. Once mineral is heated at concerning a hundred and fifty degree Centigrade it losses water and produces powder Pop .i.e. salt dehydrate is dismissed at relatively coldness and so reduced to fine kind is Pop. When Pop is mixed with water, it sets inside jiffy owing to growth and its surface become swish. owing to this property, it's employed in molds. PoP is not easily soluble in water however bit by bit goes in bed over an extended time period. great deal of PoP once comes directly connected with skin, causes serious burns due to heat made. Material used for creating PoP idols contain the PoP (Gypsum) eightieth and above and paper (cellulose) up to 100% and alternative material inside 1-2% like starch, Boric Acid, atomic number 19 salt, Vermiculite, fiber, paraffin and Crystalline oxide. Colours used square measure principally chemical and contains metals such as Copper, Chromium, Cadmium, Nickel, Lead, Mercury etc. POP makes water base-forming if deposited overly. Ca and metal concentration in water will increase considerably resulting in increase within the hardness of water.

| Sr. No. | Hrs/Days | Physical Observation |
|---------|----------|---------------------------------------|
| 1 | 6 hrs | No change/ disintegration is noticed. |

| | | |
|---|--------|---|
| 2 | 12 hrs | No change/ disintegration is noticed. |
| 3 | 18 hrs | No change/ disintegration is noticed. |
| 4 | 24 hrs | Slight hair cracks to Color at base observed |
| 5 | 30 hrs | Hair crack observed is slightly widened |
| 6 | 36 hrs | White Color of rear side of idol is disintegrated |
| 7 | 42 hrs | Body color started disintegrating |
| 8 | 48 hrs | No change |
| 9 | 54 hrs | No change |

3.2 Clay Ganesh Idols

Traditionally, Ganesh Idols are created from clay from bank of watercourse. Natural clay was wide used for preparation of Idol however creating idol from clay could be a very skilful job. These clay idols are fragile, and therefore limit transportation over longer distance. Attributable to this property, it's utilized in molds. Clay is from natural supply and is definitely soluble in water. Material used for creating clay idols contain the clay popularly known as "Shadu" now a day's largely sourced from Gujarat. Different material like starch etc. and colors used are largely natural / eco-friendly, aside from the Golden color. Due to disintegration of Hindu undivided families and urbanization demand of house hold idols is hyperbolic. This has hyperbolic demand of 'Shadu Clay', which isn't simply obtainable ensuing into hyperbolic price of Ganesh Idols made from Shadu Clay. Since, these idols get chop-chop dissolved in water turbidity of water tends to extend straightaway.

| Sr. No. | Hrs/Days | Observations |
|---------|----------|---|
| 1 | 15 min | Bubbling started. Dissolving of idol began colors (except Golden) started dissolving. |
| 2 | 1 hrs. | Colors started disintegrating. minor crack are observed. Bubbles started coming from idol |
| 3 | 2 hrs. | The crack widens, bubbling rate increased, |
| 4 | 3 hrs. | The idol disintegrated into parts |

3.3 ECO-Ganesh idols

"Eco-Ganesh" idols are created from Shadu Clay and Paper pulp, Natural gum, eco-friendly colours and natural fiber from palm / coco. These idols have advantage of sunshine weight, near ancient belief and having lesser metal contents. The idols have good thing about straightforward disintegration in water.

| Sr. No. | Minutes /Hrs | Observations |
|---------|--------------|--------------|
| | | |

| | | |
|---|--------|--|
| 1 | 5 min | Bubbling started. Dissolving of idol began. colors (except Golden) started dissolving |
| 2 | 10 min | Back hand of right side & left hand, collapsed. Bubbles started coming from right hand of idol |
| 3 | 15 min | Trunk collapsed head and trunk is collapsed |
| 4 | 30 min | Observed bubbles from all sides. Total idol is disintegrated in to small parts |

CONCLUSION

Study of your time taken to disintegrate the various idols has confirmed that, Pop idols take terribly long-standing to disintegrate; during this case it's not dissolved even once fifteenth Day once immersion. Whereas, the Shadu idol is disintegrated at intervals concerning thirty minutes and Eco-idol has disintegrated steady at intervals concerning three.00 hrs once immersion. Comparison of water quality when immersion of PoP idols on numerous days when immersion until fifteenth day has discovered steady increase of physical phenomenon from 131 to 1751 $\mu\text{S}/\text{cm}$, Total Hardness from fifty six to 1500mg/l, metallic element hardness from thirty six to 1430mg/l, metallic element hardness from twenty to 70mg/l, sulfate from four.0 to 818 mg/l, Total solids from ninety five to 2422mg/l and COD from twelve to 24mg/l. Dissolved chemical element has shown trend of depletion over the amount i.e. from 7.4 to 5.7mg/l on fifth Day.

RECOMANDATION

- The present study confirms that idols made from PoP don't seem to be simply soluble in water. Even when fifteenth day of immersion the PoP idols don't disintegrate/deform. Further, gradual disintegration of chemical constituents of PoP idols has shown steady increase in hardness and COD and reduction of dissolved gas in water. The big scale immersion of PoP idols could result in gradual and protracted modification of water quality, significantly in water bodies like wells, ponds etc. having restricted dilution issue, therefore, could have marked adverse impact on aquatic life likewise as natural quality of receiving body of water. However, the work scale study doesn't aim to review impact on life and health of aquatic flora and Fauna.
- The idols made from PoP square measure lightweight in weight; don't disintegrate for extended amount. In distinction, idols made from "Shadu" and "Eco-idols" made from mixture of "Shadu, Paper pulp disintegrate simply in water at intervals few hours. Immersion of idols made from PoP ends up in mutilated idols resurging on surface of the water or the bank of water body, significantly on the ocean

coast, inflicting serious jolt to the spiritual sentiments of individuals. Whereas, the later one (Shadu and Eco idols) avoids mutilated idols resurging on surface of the water or the bank of water body, significantly on the ocean coast l waters once the highwater is over. The sight of such mutilated idols inflicting serious jolt to the spiritual sentiments of individuals will so be avoided.

- PoP isn't virulent. Immersion of PoP idols having used chemical colors, in sizable amount, in river/sea or ponds, etc., cause gradual changes/ nuisance in characteristics of a water body, that is roofed by definition of "pollution" among the that means of section 2(e) of the Water Act.
- It's suggested to avoid use of get into manufacture of idols to be immersed in natural water bodies and instead promote use of idol producing exploitation

material and producing method which is able to have benefits of PoP idols like use of moulds, fast drying, lightweight weight and easy handling throughout transportation.

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- [1] Mr. S. V. Bhosale, Scientific Officer, Regional Laboratory MPCB, Thane.
- [2] Mr. B. S. Gadhari, Jr. Scientific Officer, Central Laboratory. MPCB, Navi Mumbai.
- [3] Ms. Ragini Butale, Jr. Scientific Officer, PSO Division, MPC Board, Mumbai.
- [4] Mrs. Swapna Satam, Jr. Scientific Assistant, Central Lab., MPCB, Navi Mumbai