

Otomo Machine Manufacturing Co., Ltd.

## Eco Blue Three

- A definitive alternative to metallic cutting oil, Eco Blue Three is born as ecological cutting water that makes a difference in production process.

### Features

- Metal can be cut by water, which realizes simplification of the degreasing cleansing process.
- Cutting water solves various problems formerly caused by oil cutting, or rust, scattering of mist, foul smell, skin damage, or soil pollution.
- Use of water for cutting can reduce the total cost for the entire plant.

### Overview (Technical principles, actions, etc.)

This is alkaline water produced from purified tap water by photo catalysis and the artificial zeolite catalyst circulation mechanism in order to improve the workplace environmental improvement oil. Eco Blue Three is produced by adding highly concentrated hydrogen ions (about  $9 \pm 0.5$  in pH) to tap water for about 2.5 hours (50 L per production). Production time increases as the production process is repeated twice or three times, with the maximum production of eco water per a whole set of process being 600 to 800 L. Since only about 1.5% rust preventive is added to the produced water, there occur no oiliness in water even though it is scattered around. When it is taken in by the human, it has almost no negative impact. To use Eco Blue Three requires no change of the existing plant. No change in durability will also result from its use. Eco Blue Three is currently being put to practical use by many users, and we hope to increase its sale.



Machine to product cutting water for metallic processing



## Introductory Track Record

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- One cutter unit and 200 L of cutting water to China
- One cutter unit to USA
- 400 L of cutting water to South Korea

## Effects

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| Comparison between conventional cutting oil and our oil-free cutting water (Eco Blue Three) |   |
|---|---|
| Conventional cutting water (water-soluble oil)  | Oil-free cutting water (Eco Blue Three)   |
| (1) Full cleaning of processed items is necessary.  | (1) Item is cut while being cleaned. Therefore, only rinsing is necessary after cutting.  |
| (2) Fire extinguishing equipment is necessary because of the use of oil.                    | (2) No fire extinguishing equipment is necessary as the water contains no oil.  |
| (3) Cutting heat may negatively affect the processing machine or work precision.            | (3) Since the water contains no oil, it provides good cooling performance.  |
| (4) Oil smoke or oil mist may have negative impact on the human body.                       | (4) No negative impact will occur to the human even if the water is inhaled.  |
| (5) Foul smell around the factory, sticky floor, risk of slipping.                          | (5) Safety is ensured as the water has no odor, it evaporates, and it thus causes no slipping.  |
| (6) The total running cost for the production process is high.                              | (6) Some 50% total running cost reduction may be achieved by elimination of the oil problem. Excellent in environmental protection and energy saving performance. |

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