

## ☺ Summary

↳ In order to protect the future of the earth and mankind, we want to study more about emulsion fuel.

## ☺ Further problems

- We haven't decided a clear definition of "separation".
- We weren't able to measure the size of particles.

↳ We should use a micrometer.

## Q & A

Q1: What is emulsion fuel used for now?

A: For boiler, engines

Q2: How does emulsion fuel smell?

A: Oil smell.

Q3: What is a micrometer?

A: It's a device to measure something tiny.



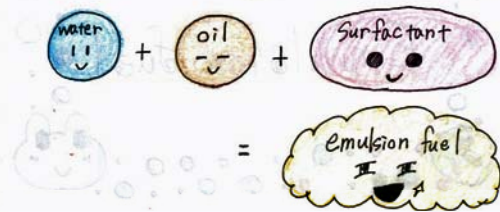
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~ member ~

☞ What is emulsion fuel?

- Emulsion fuel mixes water and a surfactant with oil.
- Surfactant is soaked with constituent.



☞ Emulsion fuel merit ☺ & demerit ☹

- low cost
- good for the environment

- separate easily
- can not be stored long
- Freezes easily
- Hard to burn

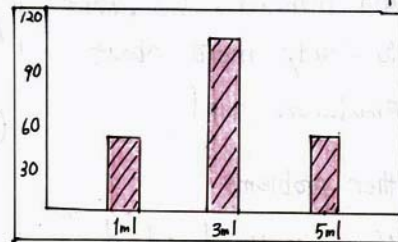
☞ We try to prevent emulsion oil from separating.

### Experiment 1

~ way ~ We changed the volume of active surface agent and examined it until separation.

Result

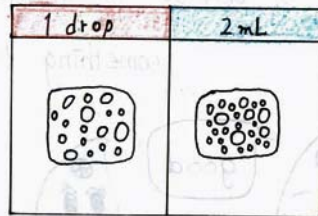
case		time
①	1ml	51分
②	3ml	105分
③	5ml	59分



### Experiment 2

~ way ~ Tinted the water red. We measured the amount of surfactant change and observed with a microscope.

Result



In case 1

each particle moves fast.  
so it separates quickly.

In case 2

each particle moves slowly.  
so it separates slowly.

☞ Conclusion

We assume there should be an appropriate amount of active surface agent.