

TCS-5

- **TCS-5** does not contain silicate, phosphate, toxic chloride, or abrasants, is safe for the environment and is mainly made of special non-ion component, low-foaming animal and vegetable oil with exclusive fatty acids, and is a tank cleaner that predominantly removes oil. Its alkalinity is easily removed when washed with the animal and vegetable fatty acid due to not forming soap.
- It has superior penetration to not only wash the cargo tanks (NSL TANK) of vessels, but is also suitable to remove the animal and vegetable oil fatty acid base with a special non-ion surfactant role, prevents pollution and is effective for anti-rust and corrosion of every facility. It is also a tank cleaner with excellent biodegradability that is approved by the IMO.

1. Features and merits

- A. Excellent decomposition of pollution material and predominant washing
- B. Low irritation and excellence of biodegradability
- C. Multipurpose cleaner
- D. Prevention of repeat pollution
- E. Extensive dilution ratio
- F. Stability in light, soft water and seawater
- G. Improvement in workplace due to water solubility
- H. Stability in heat (nonflammable)
- I. Restrains effects of bacteria
- J. Does not contain petroleum, chlorine
- K. Special handling and storage isn't necessary
- L. Strong deodorization and disinfection effects
- M. Stability on metal and plastic
- N. Effective application on wide range of dirty material
- O. Usage in cargo tanks and engine rooms for vessel cleaning
- P. Does not contain phosphate

2. Physical chemical properties

Appearance (original liquid)	Colorless transparent liquid
Specific Gravity (water = 1)	1.08
pH (original liquid)	12.5-13.0

Solubility (menstruum = water)	Completely soluble in fresh water or seawater
Influence to non-ferrous metals discoloration and corrosion test	Original liquid has discoloration and corrosion terrible
Influence to rubber & plastic	No
Ignition point (°C)	No
Odor	Herb and mild odor

3. Usage scoup

- A tank cleaner exclusively for animal and vegetable oil with fatty acids, and multipurpose detergent

4. Usage tips and dilution ratio

- A. Direct spray method: Use a high-pressure tank washing machine
- B. Dilution ratio: Generally 1-10%, 10-100 L mixing per 1TON for washing water

5. Usage with high-pressure tank washing machine

- A. Initiate cleaning: Recommend washing inside tank with seawater or fresh water at 50-60°C before using TCS-5
- B. TCS-5 usage tips
 - 1) Put 1-10% original liquid (washing water 1TON: original liquid 10-100 L) into mixture tank
 - 2) And washing water capacity accounts for about 5-10% of the chemical tank so as to increase occurrence of the water current
 - 3) The dilution ratio varies according to the extent of contamination, and it is good to keep a washing water temperature of 30-50°C in order to get the best effect, and one pail of original liquid can wash one or two tanks, when comparing the extent of contamination
- C. Final cleaning: After cleaning with the chemical, wash with seawater or fresh water before drying

6. Recycling method

- A. Prepare 1-10% TCS-5 solution in a tank near a pump room
- B. Do recycling for one hour keeping at 30-50°C using a tank high-pressure washing machine
- C. Put in sufficient recycling washing water in order to have continuous recycling

7. Hand spray method for inside tank

- A. Keep one meter from washing part or wall, spray original liquid or dilutions three or our times
- B. Leave on at least 2-20 minutes after spraying
- C. Wash with tank washing machine or high-pressure spray machine
- D. Keep washing water temperature at 30-50°C in order to get the best effect

E. Store (slop) washing water in tank to continuously strip during washing

8. Immersion washing method

- Use original liquid that was severely polluted, and wash with dilution liquid after dipping for at least 10-30 minutes in a 1-20% dilution in the case of slight pollution, including filter cleaning
 - ⊙ Be usable to make adjustment workplace to dilute ratio suitably according to the terms above
 - ⊙ Use with a soft sponge or brush when washing machinery and facilities, and use warm water

9. Packaging unit

A. Drum packing: actual capacity 210.00 L plastic drum packing

B. Pail packing: actual capacity 25.00 L plastic pail packing

10. Care in storage and usage by Korea Products Safety Law

A. Keep out of the reach of children

B. Don't directly spray on places with food

C. Be careful to keep away from children, such as playing with soap bubbles, balloons, etc.

D. Take the first aid measures below if swallowed or there is contact with eyes or skin

1) Contact with eyes: Immediately clear the eyes for at least 5 minutes with clean flowing water, if problems continue, consult a doctor

2) Contact with skin: Clean the skin with plenty of water and soap, if problems continue, consult a doctor

3) If swallowed: Wash the mouth out with water and consult a doctor

E. Do not use with sodium hypochlorite or decolorant sodium

F. Use with a sponge or cloth when applying higher than eye level

G. Wear protective equipment with rubber gloves, etc.

H. Do not drink or inhale

I. Close cap after use

J. Do not freeze or leave in sunlight or high temperatures

K. Use only for the stated purpose

L. Use at room temperature for better effects

M. Do not load more than three stages

N. Refer to technical data and MSDS about other information details