



Sodium thiosulfate pentahydrate can be used as a neutralizing agent for RemOx® S and L ISCO reagents (potassium and sodium permanganates).

PRODUCT SPECIFICATIONS

Assay	≥99.0%
Water Insolubles	≤ 0.01%
Sulfide (as Na₂S)	≤ 0.001%
pH	6.9
Iron (Fe)	≤ 0.002%

CHEMICAL/PHYSICAL DATA

Formula	Na ₂ S ₂ O ₃ • 5H ₂ O
Specific Gravity	1.73 g/mL
Melting Point	45° C / 113° F

SHIPPING CONTAINERS

22.7-kg pail (50-lb) net, with handle, made of high-density polyethylene (HDPE), weighs 3.1 lbs (1.4 kg). It stands approximately 20.5 in (52.1 cm) high and has an outside diameter of 12.5 in (31.7 cm). (Domestic)

SHIPPING

Sodium thiosulfate pentahydrate is not a Department of Transportation (DOT) controlled material (United States).

HANDLING, STORAGE, AND INCOMPATIBILITY

Proper personal protective equipment should be worn when handling sodium thiosulfate pentahydrate. Do not breathe dust. Avoid contact with eyes. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid dust generation. Keep from contact with clothing and other material. Refer to MSDS for more information.

Keep container tightly closed. Store in a cool, dry place. Avoid contact with oxidizing materials, highly oxygenated or halogenated compounds, acids, ammonia, water, reactive materials (i.e. sodium, mercury salts, lead, silver, iodides, mercury) and organic compounds with reducible functional groups.

Sodium thiosulfate pentahydrate is stable under normal conditions. Contamination, high temperatures, sparks, open flames, and all other sources of ignition may impact stability. Fires may be controlled and extinguished by using dry chemical, carbon dioxide, foam or water spray. To clean up spills and for more first aid measures, refer to the MSDS.

NEUTRALIZATION REACTION

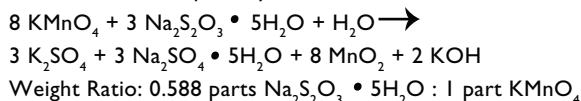
Both RemOx S and RemOx L are strong oxidizers and require careful handling. During the course of the application of permanganate, there is the chance that the neutralization and/or disposal of excess permanganate may be required. Regardless of whether the need is for the clean up and removal of a small spill, the neutralization of excess permanganate solution from equipment, the rinse water produced when cleaning buckets and drums or any other activity where excess permanganate may cause a concern, following a few simple rules will ensure that the process will be safe and easy.

If neutralization is required because of a spill, and the spill is a dry RemOx S product, it can be swept or shoveled and transferred to a clean, metal container. Dilute RemOx S with water, and mix the solution until all the crystals are dissolved prior to neutralization.

If the spill is a liquid RemOx S solution, contain the liquid by diking or collecting and neutralize. If the spill is RemOx L, the first step is to contain or collect the spill. Prior to any neutralization, sodium permanganate **MUST BE DILUTED** with water to a concentration of 6% or less. Once the product has been diluted, it can be safely neutralized.

Below is the reaction with permanganate and the stoichiometric requirement.

Sodium thiosulfate pentahydrate



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PREPARATION OF A NEUTRALIZING BATH

A 1.5% or 10% neutralizing bath for part cleaning may be prepared using sodium thiosulfate pentahydrate and water. Adjustments may be necessary based on field conditions depending on whether the bath is used for neutralizing or used to quench permanganate samples.

A nominally 1.5 % (about 0.06N) neutralizing bath for part cleaning or spill neutralization.

For a large bath: Add 4 cups of sodium thiosulfate pentahydrate to 35 gallons water. Mix until all of the sodium thiosulfate pentahydrate is dissolved. As needed bath can be replenished by adding additional sodium thiosulfate one cup at a time.

A smaller version of this bath may be prepared by adding ½ cup sodium thiosulfate to about 3.5 to 4 gallons of water.

25 gallons water = 94.63 liter

A nominally 10 % (about 0.4 N) sodium thiosulfate neutralizing bath for part cleaning or permanganate quenching may be prepared by adding 1 cup of sodium thiosulfate per gallon water. Mix until all of the sodium thiosulfate pentahydrate is dissolved.

In a 5 gallon pail: Add 4 cups sodium thiosulfate to about 4 gallons of water

Or in a 30-55 gallon container: Add 30 cups sodium thiosulfate to about 30 gallons of water

As needed, the bath can be replenished by adding additional sodium thiosulfate one cup at a time.

4 cups $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$ = 1,637 grams
4 gallons water = 15.14 liter (15,140 grams)
% solution = $1,637 / (15,140 + 1,637) = 9.8\%$

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