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|  | Environmental Health and SafetySTANDARD OPERATING GUIDELINE Peroxide Formers Test SOP |
| Section: | Environmental Health & Safety Management System | Date of Issue: | 12/22/2017 |
| Issued By: | Environmental Health &Safety |
| Part: | Health & Safety Guidelines | Revision #: | 2 |
| Revision Date: | 12/21/2017 |
| Pages: |  5 | Revised By: | Judith A. Foster |
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1. *Purpose/Scope*
	1. The purpose of this SOP is to document the Peroxide Test Method for inorganic peroxides in aqueous solutions and organic solvents.
2. *Responsibilities*
	1. Environmental Health & Safety: Prepare procedure for peroxide tests and regulate the processes according to applicable regulations.
	2. Peroxide Users: Execute the procedure when managing chemical peroxides in the store rooms.
3. *References*
	1. Quantofix® Peroxide 25 – Appendix 1
	2. Peroxide Former Labels – Appendix 2
	3. RIT Chemical Hygiene Plan
4. *Methodology*
	1. Peroxidase transfers peroxide oxygen to an organic redox indicator. This produces a blue oxidation product. The peroxide concentration is measured semi-quantitatively by visual comparison of the reaction zone of the test strip with the fields of a color scale.
5. *Applications*
	1. This test measures inorganic peroxides in aqueous solutions and organic solvents. Polymeric peroxides are not at all or only incompletely measured.
	2. This test will be conducted every 3 OR 6 months according to the RITListingofParticularlyHazardousChemical2017final.xls (Found on the EHS Lab Safety webpage).
6. *Measuring Range and Limitations*
	1. **All peroxide chemicals must be disposed after 18 months in inventory or if the peroxide concentration is greater than or equal to 5 mg/l.**
	2. The test strips can be used for peroxide concentrations up to 25 mg/l. A solution that has a peroxide concentration of more than 5 mg/l must be diluted with distilled water or peroxide-free ether.
	3. **The test strips must be stored away from sunlight and moisture. Keep container cool and < 30°C. They are stable up to the expiration date on the box.**
	4. The pH of the solution must be between 2-12.
7. *Interferences*
	1. Strong acidic solutions must be buffered with sodium acetate and alkaline solutions with citric acid to bring the pH to a range between 5-7.
8. *Procedure*
	1. Aqueous Solutions
		1. Immerse the reaction zone of the test strip in the sample for 1 second.
		2. Allow excess liquid to drip off the end of the test strip.
		3. Gently fan the test strip by waving it back and forth in the hood. After about 15 seconds the reaction zone should have changed color according to the peroxide concentration.
		4. Read the peroxide concentration from the corresponding color on the scale.
		5. Record concentration on the special Peroxide Formers Label associated with the chemical container by marking “Greater than or equal to 5 mg/l” or “Less than 5 mg/l.”
		6. **If the peroxide concentration is greater than or equal to 5 mg/l, the chemical is to be disposed of as soon as possible.**
		7. Place used strips in with regular trash.
	2. Organic Solvents
		1. Immerse the reaction zone of the test strip in the sample for 1 second.
		2. Allow excess liquid to drip off the end of the test strip.
		3. After the solvent has evaporated, humidify the reaction zone with a drop of distilled water and allow the excess to drip off the strip.
		4. Gently fan the test strip by waving it back and forth in the hood. After about 15 seconds the reaction zone should have changed color according to the peroxide concentration.
		5. Read the peroxide concentration from the corresponding color on the scale.
		6. Record concentration on the special Peroxide Formers Label associated with the chemical container by marking “Greater than or equal to 5 mg/l” or “Less than 5 mg/l.”
		7. **If the peroxide concentration is greater than or equal to 5 mg/l, the chemical is to be disposed of as soon as possible.**
		8. Place used strips in with regular trash.
9. *Appendices*
	1. Appendix 1 – QUANTOFIX Peroxide 25 Test Document (Q:\EMS\EMS SOGs\Health and Safety\Peroxide Formers)



* 1. Appendix 2 – Peroxide Former Labels

**3-Month Peroxide Former Label**



**6-Month Peroxide Former Label**

