
Table of applications
Petroleum / Petrochemical industry

<u>Application</u>	<u>Substance</u>	<u>Sensi- tape</u>	<u>Comments</u>
Gasoline	Sulfur	H ₂ S	No regulatory requirements; however, excess sulfur causes corrosion and odors
Feedstocks	sulfur	H ₂ S	Early detection of sulfur contamination helps prevent subsequent processing problems.
	Nitrogen	NH ₃	Nitrogen compound can poison some petrochemical and chemical processing catalysts
	Chlorine	HCl	Feedstocks transported by ship may be contaminated by sea eater. Early detection helps prevent subsequent processing problems.
Natural gas	Sulfur	H ₂ S	Mercaptans added as odorants to natural gas oxidize to sulfides and disulfides. Total sulfur content is about 2 ppm, spread over six or more different sulfur compounds.
Propane / Propylene Distillation or reforming units	Sulfur	H ₂ S	COS
	Sulfur	H ₂ S	Sulfur contamination can cause corrosion, catalysts poisoning, and other undesirable, effects.
	Nitrogen	NH ₃	Nitrogen contamination can cause corrosion, catalysts poisoning, and other undesirable effects.
Plastics packaging	Halogens	HCl	Halogenated compounds can cause corrosion, catalysts poisoning, and other undesirable effects.
	Halogens	HCl	Assess quality of ethylene and methane feedstock
Flare gas	Nitrogen	NH ₃	Gases going to "flare" need to be monitored for oxides of nitrogen
Cold boxes	Nitrogen	NH ₃	Ethylene and propylene produce nitrogen oxides which can form explosive compounds in cold boxes.
Waste oil	Chlorine	HCl	Waste oils are burned as boiler fuel; government regulations limit the total chlorine content to these oils. Intermediates facilities collectors, processors, blenders, and refiners must perform analysis to certify chlorine content limits are met. Includes transformer, crankcase, lubricating, and blended fuel oils.

Environmental and industrial hygiene

<u>Application</u>	<u>Substance</u>	<u>Sensi- tape</u>	<u>Comments</u>
Cooling / boiler water	Halogens	HCl	Halogenated compounds used as degreasers, dry cleaning solvents, etc.
	Phosphorous	Hydrides	Phosphates used to control scale and corrosion
Drinking water	Nitrogen	NH ₃	Excessive nitrate concentrations (due to fertilizer runoff, improper wastewater treatment, etc.) can result in infant methemoglobinemia ("blue" babies) and / or algal blooms. Maximum allowable limit in drinking water is 10 ppm.
Waste water / effluents	Nitrogen	NH ₃	National Pollution Discharge Elimination System (NPDES) requires wastewater effluents to be monitored for total nitrogen (ammonia, organic nitrogen, nitrite, nitrates, etc.)
	Phosphorous	Hydrides	Phosphate runoff increases unwanted plant growth in rivers, lakes, etc.
	Halogens	HCl	Included in the EPA list of priority pollutants are a number of organochlorine pesticides and polychlorinated bi-phenyls which must be monitored in order to comply with NPDES regulations.

**Agriculture
Industry**

<u>Application</u>	<u>Substance</u>	<u>Sensi- tape</u>	<u>Comments</u>
Wine	Sulfur	H ₂ S	Registration authorities require quantification of trace levels of pesticides.
	Chlorine	HCl	Pesticide residue.
Lemon juice	Sulfur	H ₂ S	Registration authorities require quantification of trace levels of pesticides.
Lettuce	Phosphorus	Hydrides	Phosphorous compounds used in pesticides and fertilizers (Dimethoate, parathion).
Celery	Phosphorus	Hydrides	Phosphorous compounds used in pesticides and fertilizers (Parathion, diazion).
Pood products	Halogens	HCl	Halogenated compounds used in pesticides and herbicides; also used to ripen fruits and in animal feed supplements. Residue may remain after processing.