SAFETY KLEEN DEGREASERS

Date Initiated:

October 29, 1998

Dates Modified / Updated:

PROCESS DESCRIPTION:

District Rule Development staff conducted a study of Safety Kleen degreasers in 1996. These enclosed degreasing units are distributed throughout the County and used by many facilities. Safety Kleen owns the equipment and provides a regular solvent disposal and recharge service to the user. The actual solvent usage for each device at each site is often unrecorded or overeported as the full capacity of the degreasing unit. Generally, these solvent are low-volatile hydrocarbon mixtures with trace quantities of benzene, toluene, and xylenes. Emissions are typically a very small percentage of the overall solvent throughput. The following average emission estimates by equipment type were developed by the District (L. Yannayon).and can be used in cases where solvent records are unavailable;

SAFETY KLEEN EMISSION FACTORS (by Model Type)

Model Number (1st two digits)	Unit Type	Surface Area (ft2)	Solvent Type	Emission Factor (lbs/day)
10, 11	Dip Tank	1.07	SK150 or SK699	0.12
14	Remote Reservoir	1.78	SK105	0.17
16,17	Remote Reservoir	4.27	SK105	0.44
23	Remote Reservoir	3.42	SK105, SK140, or PC95	0.10
30	Remote Reservoir	6.50	SK105, SK140, or PC95	0.67
33	Remote Reservoir	6.50	SK105	0.67
34, 34.1	Remote	5.50	SK105	1.34

	Reservoir			
44, 46	Dip Tank	4.60	SK105	2.00
60	Remote Reservoir	1.78	SK105	0.17
81	Dip Tank	8.44	SK105, SK140, SK150, or PC95	1.20

Emissions will be estimated in accordance with the following procedures;

Ea = #Units x EF x Ci x 365

Eh = #Units x EF x Ci / 24

Where:

Ea = Annual emissions of each contaminant, (lbs/year)

Eh = Maximum hourly emissions of each contaminant, (lbs/hour)

#Units = Number of each type of Safety Kleen Unit used on site, (dimensionless)

EF = Daily emission factor per unit type, (lbs TOG/day)

Ci = Weight percent of each listed substance in the TOG emissions (lbs/lb)

EMISSIONS INFORMATION:

The above estimation procedures should only be used for facilities with incomplete or unrepresentative usage solvent records. If valid information does exist, use the mass balance procedure in the standard degreasing form to estimate emissions.

Safety Kleen solvents are repeatedly recycled and redistributed to the end users. Trace organics are common and actual compositions vary. Based on MSDS information, the District will assume the following default composition of TOG emissions from the various solvents used;

SAFETY KLEEN SOLVENT EMISSIONS (DEFAULT COMPOSITION)

Trace Organic Compound	Weight Fraction (lbs/lb TOG emissions)
Dichlorobenzene	0.0020
Ethyl benzene	0.0050
Glycol Ethers, unspecified	0.0100

Methylene Chloride	0.0015
Naphthalene	0.0300
Perchloroethylene	0.0025
Toluene	0.0025
1,1,1-Trichloroethane	0.0025
Xylenes	0.0100

ASSUMPTIONS / LIMITATIONS:

- The average daily emission rates developed by the District should be used only when representative solvent throughput records are unavailable. These average emission rates may not be representative of all industrial sites.

- All similar Safety Kleen degreasing units should be listed on a single reporting form unless emissions are being calculated according to mass balance procedures.

- An alternative Safety Kleen estimation technique based on mass balance (same as degreasing) can be used to calculate emissions if the model based factors are unrepresentative. The mass balance procedure assumes total annual usage is already correctly adjusted for annual waste disposal. However, many sites do not have the accurate annual usage and waste information necessary to do this type of calculation.

FORMS:

Report all similar Safety Kleen units on site on the same inventory reporting form.