

**DRAFT  
ENGINEERING EVALUATION  
Keysight Technologies, Plant: 279  
1400 Fountaingrove Parkway, Santa Rosa, CA 95403  
Application: 26961**

**Background**

Keysight Technologies is applying for an Authority to Construct (A/C) for the following proposed source S-112, and to separate the existing source S-97 (currently consisting of 13 individual parts washers) into individual sources, which will result in a modification of these sources due to a requested increase in emissions for each parts washer.

Existing permitted source to be modified:

**S-97 Safety-Kleen Model 60 Benchtop Parts Washers (13 total)**

After change:

**S-97 Safety-Kleen Model 60 Benchtop Parts Washer  
S-100 Safety-Kleen Model 60 Benchtop Parts Washer  
S-101 Safety-Kleen Model 60 Benchtop Parts Washer  
S-102 Safety-Kleen Model 60 Benchtop Parts Washer  
S-103 Safety-Kleen Model 60 Benchtop Parts Washer  
S-104 Safety-Kleen Model 60 Benchtop Parts Washer  
S-105 Safety-Kleen Model 60 Benchtop Parts Washer  
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S-109 Safety-Kleen Model 60 Benchtop Parts Washer  
S-110 Safety-Kleen Model 60 Benchtop Parts Washer  
S-111 Safety-Kleen Model 60 Benchtop Parts Washer**

Proposed new source:

**S-112 Safety-Kleen Model 60 Benchtop Parts Washer**

S-97 currently consists of 13 identical, unheated parts washers that are used in the product manufacturing process (precision machining and metal plating). S-112 will be identical to these existing parts washers. All 14 parts washers are located in Building 4 and use PF Solvent, which is 100% POC (precursor organic compounds).

The facility is also requesting gross usage limits for the existing parts washers and new parts washer, as it is not sustainable to constantly isolate and quantify the waste solvent from the gross usage. Permit Condition #24455 currently specifies a net solvent usage limit of 90 gal/yr of PF solvent at S-97 (for all 13 parts washers combined). The facility is requesting a gross solvent usage limit of 80 gal/yr of PF Solvent at each of the aforementioned 14 parts washers.

## Emissions Calculations

The gross usage of solvent at each parts washer will be 80 gal/yr. Most of the solvent will be recovered, as the cleaned parts are drained in a benchtop sink and the drained solvent returns to the remote reservoir. However, the facility will no longer track the waste solvent at these parts washers.

PF Solvent has a density of 6.51 lb/gal, all POC. The daily and annual emissions are calculated as follows:

Annual Emissions at each parts washer:

$$80 \text{ gal/yr} \times 6.51 \text{ lb/gal} = 520.8 \text{ lb/yr POC} = 0.26 \text{ tons/yr POC}$$

Daily Average Emissions at each parts washer (Based on 5 days/week, 52 weeks/yr):

$$520.8 \text{ lb/yr POC} \div (260 \text{ days/yr}) = 2.0 \text{ lb/day POC}$$

Based on the relatively low daily average emissions, maximum daily emissions are not expected to exceed 10 lb/highest day POC.

The POC consists of d-limonene and naphtha petroleum, hydrotreated heavy (a paraffinic hydrocarbon). According to the manufacturer, this solvent contains xylenes, naphthalene, and n-hexane.

The actual post-project emission increase is the difference between the post-project emissions and the pre-project baseline emissions. Per Regulation 2-2-605, the baseline emission level is the annual average POC emissions based on the previous 36 months of operation of S-97. The POC and NPOC (non-precursor organic compounds) emissions for the previous 36 months at S-97 are as follows. The post-project NPOC emissions are set equivalent to the post-project POC emissions to allow for operational flexibility.

For the purpose of determining the pre-project baseline POC emissions for each parts washer, it is assumed that the baseline solvent usage is evenly distributed among the 13 parts washers under the existing S-97. Such an approach is reasonable for the existing S-97 because S-97 is currently permitted as a single source and the pre-project (existing) permit conditions for S-97 do not require the tracking of usage by individual parts washer.

$$\text{Pre-project baseline POC emissions (lb/yr)} = 24.75 \text{ lb/yr}$$

$$\text{Post-project POC emissions (lb/yr)} = 7291.2 \text{ lb/yr (520.8 lb/yr POC per parts washer, 14 total)}$$

$$\text{Post-project NPOC emissions (lb/yr)} = 7291.2 \text{ lb/yr}$$

$$\text{Post-project POC emission increase} = 7291.2 - 24.75 = 7266.45 \text{ lb/yr} = 3.633 \text{ tons/yr}$$

$$\text{Post-project NPOC emission increase} = 7291.2 \text{ lb/yr} = 3.646 \text{ tons/yr}$$

Since each parts washer will have an identical usage limit (of 80 gallons/year), it is assumed that the post-project POC and NPOC emissions increase is:

Post-project POC emission increase, per source =  $(7266.45 \text{ lb/yr})/14 = 519.03 \text{ lb/yr} = 0.26 \text{ tons/yr}$   
 Post-project NPOC emission increase, per source =  $(7291.2 \text{ lb/yr})/14 = 520.8 \text{ lb/yr} = 0.26 \text{ tons/yr}$

**BACT Review and Determination**

In accordance with Regulation 2, Rule 2, Section 301, Best Available Control Technology (BACT) is triggered for any new or modified source with the potential to emit 10 pounds or more per highest day of POC, NPOC, NO<sub>x</sub> (nitrogen oxides), CO (carbon monoxide), SO<sub>2</sub> (sulfur dioxide) or PM<sub>10</sub> (particulate matter less than 10 microns in diameter).

Based on the emission calculations above, BACT is not required for POC, NPOC, NO<sub>x</sub>, CO, SO<sub>2</sub> or PM<sub>10</sub>.

**Plant Cumulative Increase and Offsets**

The table below summarizes the total Potential to Emit (PTE) for this facility. The pre-4/5/91 emissions shown below include the PTE for several grandfathered sources (as calculated in Application 20966, and accounting for several grandfathered sources that have been shut down).

**Facility PTE for POC (tons/yr)**

	Emissions (tons/yr)
Current Potential to Emit (pre- and post-4/5/91 emissions combined)	4.559
New Increase with Application 27000	0.554
New Increase with Application 26961	3.613
Total Facility PTE	8.726

Bay Area Air Quality Management District (BAAQMD) Regulation 2-2-302 was amended on December 21, 2004, so that facilities with a potential to emit of 35 tons or more of POC or NO<sub>x</sub> could not use offsets from the Small Facilities Bank. Facilities with a potential to emit between 10 and 35 tons/yr of POC or NO<sub>x</sub> can use offsets from the Small Facilities Bank. Therefore, offsets are not required for POC because the PTE of POC for this facility is below 10 tons/yr.

**Statement of Compliance**

**Toxics New Source Review (NSR)/ Best Available Control Technology for Toxics (TBACT)**

PF Solvent contains < 1 ppm (parts per million) of xylenes, <10 ppm of naphthalene, and <1 ppm of n-Hexane. These TACs are significantly below the respective risk triggers in Table 2-5-1 of Regulation 2-5. Therefore, a Health Risk Screening Analysis is not required.

The TAC emissions from two other pending applications are not included below. The project under Application 27000 involves an above ground waste solvent storage tank, and did not trigger an HRSA. The project under Application 23919 involves a change of conditions for an existing semiconductor fabrication area and triggered an HRSA. However, neither of these applications is (1) a reasonably foreseeable consequence of the previous project, nor (2) a critical element or integral part of the previous project. Therefore, per the definition of a project in Regulation 2-1-301, the projects under Applications 23919 and 27000 are considered separate from the project under Application 26961.

HAP	Annual Emissions (lb/yr)	Regulation 2-5 Chronic Trigger Levels (lb/yr)	Chronic Triggered?	Hourly Emissions (lb/hr)	Regulation 2-5 Acute Trigger Levels (lb/hr)	Acute Triggered?
Xylenes	<0.007	27000	No	<0.007	49	No
Naphthalene	<0.073	3.2	No	<0.073	N/A	No
n-Hexane	<0.007	270000	No	<0.007	N/A	No

### District Rules

Each cold cleaner is subject to the requirements for cold cleaners (Section 303) in Regulation 8-16, Solvent Cleaning Operations. The solvent ("PF Solvent") has a boiling point of 193 C and is therefore defined as a low-volatility compound pursuant to Regulation 8-16-205. Therefore, each cold cleaner is eligible for the limited exemption for low-volatility compounds in Regulation 8-16-118, which thereby exempts each cold cleaner from the requirement for control devices in 8-16-303.4.

Each cold cleaner utilizes a covered container for the solvent and articles being cleaned, in accordance with Regulation 8-16-303.1.4. These cold cleaners are not subject to the 50 g/l cleaning solution limit and the other requirements in Regulation 8-16-303.5 because they are not used for repair and maintenance cleaning. No solvent spray is used. The facility will comply with the recordkeeping provisions in Regulation 8-16-501.

### Federal Rules

Prevention of Significant Deterioration (PSD), New Source Performance Standards (NSPS), and National Emission Standards for Hazardous Air Pollutants (NESHAPS) are not triggered for this source.

### CEQA

This application is considered to be ministerial under the District's Regulation 2-1-311 and therefore is not subject to California Environmental Quality Act (CEQA) review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 6.1.

### Public Notices

Because this equipment will be located within 1000 ft of Hidden Valley Satellite School, the project is subject to the public notification requirements of Regulation 2-1-412 due to the increase in emissions from the project. A public notice will be sent to all parents of students of the above-mentioned school and all residents within 1000 feet of the facility. There will be a 30-day public comment period.

### Permit Conditions (Condition #24455)

COND# 24455 -----

Conditions for: ~~S-97~~

~~S-97 Safety-Kleen Model 60 Benchtop Parts Washer~~  
~~S-100 Safety-Kleen Model 60 Benchtop Parts Washer~~  
~~S-101 Safety-Kleen Model 60 Benchtop Parts Washer~~  
~~S-102 Safety-Kleen Model 60 Benchtop Parts Washer~~  
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~~S-111 Safety-Kleen Model 60 Benchtop Parts Washer~~  
~~S-112 Safety-Kleen Model 60 Benchtop Parts Washer~~

1. ~~The owner/operator shall ensure that Net~~gross solvent usage at ~~each parts washer S-97, S-100, S-101, S-102, S-103, S-104, S-105, S-106, S-107, S-108, S-109, S-110, S-111, and S-112~~ shall not exceed ~~980~~ gallons of PF Solvent totaled over any consecutive twelve month Period. ~~+~~  
(basis: cumulative increase)
2. ~~The owner/operator may use M~~materials other than those specified in part 1 ~~may be used at each parts washer S-97, S-100, S-101, S-102, S-103, S-104, S-105, S-106, S-107, S-108, S-109, S-110, S-111, and S-112~~ provided that the owner/operator can demonstrate that all of the following requirements are satisfied:
  - a. Total precursor organic compound (POC) emissions

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from each parts washer S-97, S-100, S-101, S-102, S-103, S-104, S-105, S-106, S-107, S-108, S-109, S-110, S-111, and S-112 do not exceed ~~674~~521 pounds in any consecutive 12-month period.

- b. ~~No non-precursor organic compounds (NPOC) are used. Total non-precursor organic compound (NPOC) emissions from each parts washer S-97, S-100, S-101, S-102, S-103, S-104, S-105, S-106, S-107, S-108, S-109, S-110, S-111, and S-112 do not exceed 521 pounds in any consecutive 12-month period.~~
- c. No toxic air contaminant, as defined by Table 2-5-1 in Regulation 2, Rule 5, is used.

(Basis: cumulative increase; ~~7~~ BAAQMD Regulation 2-1-412; Regulation 2, Rule 5)

3. To determine compliance with the above parts, the owner/operator of each parts washer S-97, S-100, S-101, S-102, S-103, S-104, S-105, S-106, S-107, S-108, S-109, S-110, S-111, and S-112 shall maintain the following records and provide all of the data necessary to evaluate compliance with the above parts, including the following information:

- a. Quantities of each type of solvent used at ~~this~~each source on a monthly basis.
- b. If a material other than those specified in Part 1 is used, POC/NPOC, toxic component contents, and class (if applicable) of each material used; and mass emission calculations to demonstrate compliance with Part 2, on a monthly basis;
- c. Monthly usage and/or emission calculations shall be totaled for each consecutive twelve-month period.

All records shall be retained on-site for two years, from the date of entry, and made available for inspection by District staff upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations.

(Basis: Cumulative Increase; Toxics)

~~4. The owner/operator shall ensure that S97 complies with the requirements of BAAQMD Regulation 8-16-303. (8-16-303)~~

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## Recommendation

The District has reviewed the materials contained in the permit application for the proposed project and has made a preliminary determination that the project is expected to comply with all applicable requirements of District, state, and federal air quality-related regulations. The preliminary recommendation is to issue an Authority to Construct for the equipment listed below. However, the proposed sources will be located within 1,000 feet of at least one school, which triggers the public notification requirements of Regulation 2-1-412. After the comments are received and reviewed, the District will make a final determination on the permit.

I recommend that the District initiate a public notice and consider any comments received prior to taking any final action on issuance of:

A modified Permit to Operate to Keysight Technologies and source description revision (to specify only one parts washer), for:

**S-97 Safety-Kleen Model 60 Benchtop Parts Washer**

A Permit To Operate to Keysight Technologies, for:

**S-100 Safety-Kleen Model 60 Benchtop Parts Washer**

**S-101 Safety-Kleen Model 60 Benchtop Parts Washer**

**S-102 Safety-Kleen Model 60 Benchtop Parts Washer**

**S-103 Safety-Kleen Model 60 Benchtop Parts Washer**

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**S-111 Safety-Kleen Model 60 Benchtop Parts Washer**

An Authority to Construct to Keysight Technologies, for:

**S-112 Safety-Kleen Model 60 Benchtop Parts Washer**

By: \_\_\_\_\_

Jimmy Cheng  
Air Quality Engineer

Date: \_\_\_\_\_