

ENGINEERING EVALUATION
Novartis Vaccines and Diagnostics, Inc.
PLANT NO. 8025
APPLICATION NO. 23308

BACKGROUND

Novartis Vaccines and Diagnostics, Inc. (Novartis) is applying for a modification to the Permit to Operate the following equipment:

S-53 Solvent Cleaning at Building 4

Novartis cleans surfaces for the development and manufacture of pharmaceutical products. Novartis uses either a solution of 70% isopropanol and 30% water or 70% ethanol and 30% water to clean surfaces.

EMISSIONS SUMMARY

Annual Emissions:

Novartis will increase the use of cleaning solutions at S-53 Solvent Cleaning from 225 gallons per year to 350 gallons per year. The cleaning solutions are 70% solvent and 30% water. The solvents are isopropyl alcohol and ethanol. For a conservative estimate of emissions, the solvent with the higher density will be used to calculate emissions. Assume 100% of the solvent in the solution is emitted into the atmosphere.

Isopropyl Alcohol (POC)	6.53 lb/gal
Ethanol (POC)	6.61 lb/gal

Total POC emissions = $(350 \text{ gal/yr})(0.70 \text{ solvent})(6.61 \text{ lb/gal}) = 1,620 \text{ lb/yr} = 0.81 \text{ tpy}$

Increase in POC emissions = $(350 - 225 \text{ gal/yr})(0.70 \text{ solvent})(6.61 \text{ lb/gal}) = 578 \text{ lb/yr} = 0.289 \text{ tpy}$

Maximum Daily Emissions:

Novartis operates 24 hrs/day, 7 days/wk, and 52 wks/yr.

S-53 Daily Maximum POC Emission = $(1,620 \text{ lb/yr}) / (7 \text{ days/wk} * 52 \text{ wks/yr}) = 4.5 \text{ lb/day}$

Plant Cumulative Increase: (tons/year):

Pollutant	Existing	New	Total
NOx	8.724	0	8.724
POC	12.516	0.289	12.805
CO	6.605	0	6.605
SO2	0.170	0	0.170
PM10	0.764	0	0.764
NPOC	0	0	0

Toxic Risk Screening:

Novartis may use at most 350 gallons of solvent solution at S-53. The solvent cleaning solution used will be either 70% isopropanol or 70% ethanol. Ethanol does not appear on the District Toxic Air Contaminant List of Table 2-5-1.

Toxic Pollutant	Emission Rate*		Risk Screening Trigger	
			Acute	Chronic
Isopropanol	0.19 lb/hr	1,620 lb/yr	7.1 lb/hr	270,000 lb/yr

* Based on the use 350 gallons of a 70% isopropanol solution 24 hrs/day, 7 days/wk, and 52 wks/yr.

The use of isopropanol by Novartis is substantially below the toxic air contaminant trigger level and a Risk Screening Analysis is not required.

STATEMENT OF COMPLIANCE

Solvent cleaning at S-53 requires the wiping down of manufacturing and laboratory surfaces at Novartis. The owner/operator is exempt from Regulation 8, Rule 16: Organic Compounds: Solvent Cleaning Operations per Regulation 8-16-111: Exemption, Wipe Cleaning. The owner/operator is subject to Regulation 8, Rule 4: Organic Compounds, General Solvent and Surface Coating Operations. The owner/operator will emit up to 0.81 tons per year of VOCs at S-53. The emissions are well below the limit of 5 tons per year in Regulation 8-4-302.1. The owner/operator shall meet the solvent evaporative loss minimization requirements of Regulation 8-4-312. The owner/operator shall use closed containers for the storage or disposal of cloth or paper used for solvent surface preparation and cleanup. The owner/operator shall close containers of solvent when not in use. Novartis is not subject to the solvent VOC limit of 50 g/l (0.42 lbs/gal) or the overall VOC control and abatement efficiency of 85% in Regulation 8-4-313 Solvent Preparation Standards. Novartis is a medical device and pharmaceutical manufacturer per Regulation 8-4-225 and is exempt from Regulation 8-4-313 per Regulation 8-4-116 Limited Exemption, Specific Surface Preparation and Cleaning Operations. The owner/operator will be subject to the recordkeeping requirements of Regulation 8-4-501.

The project is considered to be ministerial under the District's CEQA regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emissions factors and therefore is not discretionary as defined by CEQA. (Permit Handbook Chapter 6.3)

The project is within 1000 feet of Pacific Rim School (K-6th Grade) and is therefore subject to the public notification requirements of Reg. 2-1-412. A public notice will be prepared and sent to:

- All addresses within 1000 feet of the solvent cleaning stations.
- Parents and guardians of students at the Pacific Rim School
- Parents and guardians of students at Emery Secondary School

Comments will be addressed after the end of the 30-day public comment period.

Best Available Control Technology: In accordance with Regulation 2, Rule 2, Section 301, 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_x, CO, SO₂ or PM₁₀. Based on the emissions calculations above, the owner/operator is not subject to BACT.

Offsets: Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NO_x per Regulation 2-2-302. The District may provide offsets from the Small Facility

Banking Account for a facility with emissions between 10 and 35 tons/yr of POC or NO_x, provided that facility has no available offsets. Based on the emission calculations above, offsets of POC are required from the Small Facility Banking Account for this application.

PSD, NSPS, and NESHAPS do not apply.

PERMIT CONDITIONS

Changes to permit condition 23720 for S-53 are in strikeout/underline format.

Condition 23720

Application 16257 (September 2007).

Application 18714 (August 2008): Increase from 100 to 225 gal/yr of solvent solution at S-53.

Application 23308 (May 2011): Increase from 225 to 350 gal/yr of solvent solution at S-53.

S-53 Solvent Cleaning at Building 4

S-54 Solvent Cleaning at Buildings D, F, G, H, M, N, O, Q, R, T and X

1. The owner/operator of S-53 shall not use more than 350 ~~225~~ gallons of cleaning solution containing 70% solvent (isopropyl alcohol or ethanol) in any consecutive 12-month period.
(basis: Cumulative increase)
2. The owner/operator of S-54 shall not use more than 250 gallons of cleaning solution containing 70% solvent (isopropyl alcohol or ethanol) in any consecutive 12-month period.
(basis: Cumulative increase)
3. Solvents other than the material specified in parts 1 and 2, and/or usages in excess of that specified in parts 1 and 2, may be used provided that the owner/operator can demonstrate that the following are satisfied:
 - a. Total POC emissions from S-53 do not exceed 1620 ~~1,041~~ lbs. in any consecutive 12-month period.
 - b. Total POC emissions from S-54 do not exceed 1,157 lbs. in any consecutive 12-month period.
 - c. The use of these materials does not increase toxic emissions above any risk screening trigger level.
(basis: Cumulative increase)
4. In order to minimize solvent losses, the owner/operator shall use only controlled flow solvent dispensers (e.g., squeeze bottles) to dispense solvent for wipe cleaning. In addition, the owner/operator must keep all solvent impregnated cloths or papers not in active use in closed containers.
(basis: Regulation 8-4-312)
5. To determine compliance with the above conditions, the owner/operator shall maintain the following records and provide all of the data necessary to evaluate compliance with the above conditions, including, but not necessarily limited to, the following information:
 - a. Record on a monthly basis the type, amount, and POC content of each cleanup solvent used.
 - b. If a material other than those specified in parts 1 and 2 is used or a material specified in parts 1 and 2 is used in excess of the limit in parts 1 and 2, POC and toxic component contents of each material used; and mass emission calculations to demonstrate compliance with part 3, on a monthly basis.
 - c. Monthly usage and/or emission calculations shall be totaled for each consecutive 12-month period.

The owner/operator shall record all records in a District-approved log. The owner/operator shall retain all records on-site for two years, from the date of entry, and make them available for inspection by District staff upon request. These record-keeping requirements shall not replace the record-keeping requirements contained in any applicable District Regulations.
(basis: Cumulative Increase, Recordkeeping Regulation 8-4-501)

RECOMMENDATION

Issue a change of condition to the Permit to Operate to Novartis Vaccines and Diagnostics, Inc. for the following equipment:

S-53 Solvent Cleaning at Building 4

EXEMPTIONS

None

By: _____

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