



TECHNICAL SUPPORT DOCUMENT

**Air Discharge Permit 25-3712
Air Discharge Permit Application CL-3299**

Issued: June 11, 2025

Color Technology, Inc.

SWCAA ID – 2535

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ABBREVIATIONS

List of Acronyms

ADP.....	Air Discharge Permit	NOV	Notice of Violation/
AP-42	Compilation of Emission Factors, AP-42, 5th Edition, Volume 1, Stationary Point and Area Sources – published by EPA	NSPS	New Source Performance Standard
ASIL.....	Acceptable Source Impact Level	PSD	Prevention of Significant Deterioration
BACT	Best available control technology	RACT	Reasonably Available Control Technology
BART	Best Available Retrofit Technology	RCW	Revised Code of Washington
CAM	Compliance Assurance Monitoring	SCC	Source Classification Code
CAS#.....	Chemical Abstracts Service registry number	SDS	Safety Data Sheet
CFR.....	Code of Federal Regulations	SQER	Small Quantity Emission Rate listed in WAC 173-460
EPA	U.S. Environmental Protection Agency	Standard	Standard conditions at a temperature of 68°F (20°C) and a pressure of 29.92 in Hg (760 mm Hg)
EU	Emission Unit	SWCAA	Southwest Clean Air Agency
LAER	Lowest achievable emission rate	T-BACT	Best Available Control Technology for toxic air pollutants
MACT	Maximum Achievable Control Technologies	WAC	Washington Administrative Code
mfr.....	Manufacturer		
NESHAP	National Emission Standards for Hazardous Air Pollutants		

List of Units and Measures

µg/m ³	Micrograms per cubic meter	MMBtu.....	Million British thermal unit
µm	Micrometer (10 ⁻⁶ meter)	MMcf	Million cubic feet
acfm.....	Actual cubic foot per minute	ppm	Parts per million
bhp.....	Brake horsepower	ppmv	Parts per million by volume
dscfm.....	Dry Standard cubic foot per minute	ppmvd	Parts per million by volume, dry
g/dscm	Grams per dry Standard cubic meter	ppmw.....	Parts per million by weight
gpm	Gallon per minute	psig.....	Pounds per square inch, gauge
gr/dscf	Grain per dry standard cubic foot	rpm	Revolution per minute
hp.....	Horsepower	scfm.....	Standard cubic foot per minute
kW.....	Kilowatt	tph	Ton per hour
		tpy	Tons per year

List of Chemical Symbols, Formulas, and Pollutants

C ₃ H ₈	Propane	O ₃	Ozone
CH ₄	Methane	PM.....	Particulate Matter with an aerodynamic diameter 100 µm or less
CO	Carbon monoxide	PM ₁₀	PM with an aerodynamic diameter 10 µm or less
CO ₂	Carbon dioxide	PM _{2.5}	PM with an aerodynamic diameter 2.5 µm or less
CO ₂ e.....	Carbon dioxide equivalent	SO ₂	Sulfur dioxide
H ₂ S	Hydrogen sulfide	SO _x	Sulfur oxides
HAP.....	Hazardous air pollutant listed pursuant to Section 112 of the Federal Clean Air Act	TAP	Toxic air pollutant pursuant to Chapter 173-460 WAC
HCl.....	Hydrochloric acid	TGOC.....	Total Gaseous Organic Carbon
Hg.....	Mercury	TOC.....	Total Organic Carbon
N ₂ O	Nitrous oxide	TSP.....	Total Suspended Particulate
NH ₃	Ammonia	VOC	Volatile organic compound
NO ₂	Nitrogen dioxide		
NO _x	Nitrogen oxides		
O ₂	Oxygen		

Terms not otherwise defined have the meaning assigned to them in the referenced regulations or the dictionary definition, as appropriate.

1. FACILITY IDENTIFICATION

Applicant Name: Color Technology, Inc.
Applicant Address: 3000 Columbia House Blvd, Suite 110
Vancouver, WA 98661
Facility Name: Color Technology, Inc.
Facility Address: 3000 Columbia House Blvd, Suite 110
Vancouver, WA 98661
SWCAA Identification: 2535

Contact Person: Ralph Johnson, President

Primary Process: Preparation of Flexographic Plates
SIC/NAICS Code: 2796: Platemaking and Related Services
323120: Support Activities for Printing
Facility Latitude and Longitude: 45°37'13.08"N
122°38'21.77"W
Facility Classification: Natural Minor

2. FACILITY DESCRIPTION

Color Technology, Inc. (Color Technology) supplies flexographic printing plates and graphic art services for the wide and narrow web packaging and printing industries. The Vancouver facility designs and manufactures flexographic printing plates for third party clients.

3. CURRENT PERMITTING ACTION

This permitting action is in response to Air Discharge Permit (ADP) application number CL-3299 dated May 20, 2025. Color Technology submitted ADP application CL-3299 requesting the following:

- Increase in VOC emission limit. The facility received Notice of Violation (NOV) #11350 for exceeding their emission limit. They also expect to expand soon, which will also result in increased emissions.
- There are no equipment changes due to this permitting action.

ADP 25-3712 will supersede ADP 19-3348 in its entirety.

4. PROCESS DESCRIPTION

- 4.a. Photo Polymer Plate Manufacturing. This facility produces flexographic printing plates by exposing blank, uncured photo polymeric plates to ultraviolet light (etching). A graphic design is laid over the uncured plate to block exposure in desired areas. After exposure, the

plate is washed/brushed with a solvent solution to remove non-reacted plate material. This produces a printing plate surface matching the graphic design. Residual solvent absorbed by the plate is removed in a dryer to complete the process. Finished plates may be mounted on a backing made of various materials (plastic, rubber, metal, etc.) Spent wash solvent is collected in the washers and pumped to a distillation unit for cleaning. Recovered solvent is pumped back to the washers for reuse.

Volatile emissions from the etchers, washers, dryer, and distillation unit are vented to a central exhaust system that discharges to the ambient atmosphere through the building roof.

5. EQUIPMENT/ACTIVITY IDENTIFICATION

- 5.a. Flexographic Printing Plate Production. The facility produces printing plates using two plate washers and one multi-drawer plate dryer. The equipment is described as follows:

Plate Washer #1	Make/Model:	Nyloflex / Digital Washer FV
	Max Plate Size:	52.0" x 80.0"
	Exhaust Rate:	118 cfm
Plate Washer #2	Make/Model:	DuPont / Cyrel 3000 BP
	Max Plate Size:	52.0" x 88.0"
	Exhaust Rate:	118 cfm
Plate Dryer	Make/Model:	DuPont / Cyrel 3000 D
	Max Plate Size:	52.0" x 80.0"
	Exhaust Rate:	117 cfm

The DuPont plate washer is currently a stand-by unit, and the facility is expecting to replace it in the next few years.

- 5.b. Solvent Recovery Still. The facility uses one solvent recovery unit to clean/recycle spent washout solvent. The unit is described as follows:

Make / Model:	Progressive Recovery / PV-300 (s/n 03-2519-H)
Solvent Recovery:	Up to 97%

- 5.c. Insignificant Emission Units. The following pieces of facility equipment have been determined to have insignificant emissions, and are not registered as emission units:

Plate Etchers. Printing plates are etched using UV light. There is no use of solvent or chemical solutions in this portion of the process.

- 5.d. Equipment/Activity Summary.

ID No.	Equipment/Activity	Control Equipment/Measure
1	Three Flexographic Printing Plate Units	Process Enclosure, Solvent Recovery

ID No.	Equipment/Activity	Control Equipment/Measure
2	Solvent Recovery Still	Process Enclosure, Solvent Recovery

6. EMISSIONS DETERMINATION

Unless otherwise specified by SWCAA, actual emissions must be determined using the specified input parameter listed for each emission unit and the following hierarchy of methodologies:

- Continuous emissions monitoring system (CEMS) data;
- Source emissions test data (EPA reference method). When source emissions test data conflicts with CEMS data for the time period of a source test, source test data must be used;
- Source emissions test data (other test method); and
- Emission factors or methodology provided in this TSD.

Nothing precludes the use, including the exclusive use of any credible evidence or information relevant to identifying or quantifying emissions if methods identified above, in the ADP, or elsewhere in this TSD have not provided adequate quantification of actual emissions.

- 6.a. Flexographic Printing Plate Production – Solvent Emissions. VOC and TAP/HAP emissions are calculated using a mass balance approach, using the facility-wide usage of solvent products. VOC and TAP/HAP emissions for each product are determined by taking the percent VOC (or percent volatiles minus water and exempt) and percent TAP and multiplying by the usage (by weight). VOC and TAP/HAP content and product density are found in the SDS or the Technical Data Sheet (TDS) for the product. Particulate matter emissions are assumed to be negligible.

Example. Given a specific coating with a density of 8.5 lb/gal, a VOC content of 7.5 lb/gal, and a toluene content of 2%, assuming 10 gal/yr of usage, emissions of toluene can be determined:

$$\begin{aligned}
 10 \text{ gal/yr} \times 8.5 \text{ lb/gal VOC} &= 85 \text{ lb/yr total usage} \\
 10 \text{ gal/yr} \times 7.5 \text{ lb/gal VOC} &= 75 \text{ lb/yr VOC} \\
 85 \text{ lb/yr total usage} \times 2\% \text{ toluene} &= 1.7 \text{ lb/yr toluene}
 \end{aligned}$$

Maximum intended solvent consumption is equivalent to the use of (2) 55-gal drums of Nylosolv A and (72) 55-gal drums of Nylosolv C per year. Annual emissions will be calculated from actual solvent consumption and documented waste disposal records.

<u>Pollutant</u>	<u>Emissions</u>
VOC	14.45 tpy
Cyclohexanol	157.30 lbs

Emissions must be determined by mass balance procedures as outlined above. Alternate emission calculation methodologies may be accepted or specified by SWCAA.

6.b. Emissions Summary

Air Pollutant	Potential to Emit (tpy)	Project Impact (tpy)
NO _x	--	--
CO	--	--
VOC	14.45	+7.23
SO ₂	--	--
PM	--	--
PM ₁₀	--	--
PM _{2.5}	--	--
Toxic Air Pollutants	0.08	+0.04
Hazardous Air Pollutants	--	--

Toxic/Hazardous Air Pollutant	Potential to Emit (tpy)	Project Impact (tpy)
Cyclohexanol [108-93-0]	0.08	+0.04

7. **REGULATIONS AND EMISSION STANDARDS**

Regulations have been established for the control of emissions of air pollutants to the ambient air. Regulations applicable to the proposed facility that have been used to evaluate the acceptability of the proposed facility and establish emission limits and control requirements include, but are not limited to, the following regulations, codes, or requirements. These items establish maximum emissions limits that could be allowed and are not to be exceeded for new or existing facilities. More stringent limits are established in this Permit consistent with implementation of Best Available Control Technology (BACT):

- 7.a. Revised Code of Washington (RCW) 70A.15.2040 empowers any activated air pollution control authority to prepare and develop a comprehensive plan or plans for the prevention, abatement and control of air pollution within its jurisdiction. An air pollution control authority may issue such orders as may be necessary to effectuate the purposes of the Washington Clean Air Act (RCW 70A.15) and enforce the same by all appropriate administrative and judicial proceedings subject to the rights of appeal as provided in Chapter 62, Laws of 1970 ex. sess. This law applies to the facility.
- 7.b. RCW 70A.15.2210 provides for the inclusion of conditions of operation as are reasonably necessary to assure the maintenance of compliance with the applicable ordinances, resolutions, rules and regulations when issuing an ADP for installation and establishment of an air contaminant source. This law applies to the facility.

- 7.c. Washington Administrative Code (WAC) 173-460 "Controls for New Sources of Toxic Air Pollutants" requires BACT for toxic air pollutants (T-BACT), identification and quantification of emissions of toxic air pollutants, and demonstration of protection of human health and safety.

The facility emits TAPs; therefore, this regulation applies to the facility.

- 7.d. WAC 173-476 "Ambient Air Quality Standards" establishes ambient air quality standards for PM₁₀, PM_{2.5}, lead, SO₂, NO_x, ozone, and CO in the ambient air, which must not be exceeded. The facility emits PM₁₀, PM_{2.5}, SO_x, NO_x, and CO; therefore, certain sections of this regulation apply. The facility does not emit lead; therefore, the lead regulation section does not apply.
- 7.e. SWCAA 400-040 "General Standards for Maximum Emissions" requires all new and existing sources and emission units to meet certain performance standards with respect to Reasonably Available Control Technology (RACT), visible emissions, fallout, fugitive emissions, odors, emissions detrimental to persons or property, SO₂, concealment and masking, and fugitive dust. This regulation applies to the facility.
- 7.f. SWCAA 400-040(1) "Visible Emissions" requires that emissions of an air contaminant from any emissions unit must not exceed twenty percent opacity for more than three minutes in any one hour at the emission point, or within a reasonable distance of the emission point. This regulation applies to the facility.
- 7.g. SWCAA 400-040(4) "Odors" requires any source which generates odors that may unreasonably interfere with any other property owner's use and enjoyment of their property to use recognized good practice and procedures to reduce these odors to a reasonable minimum. This source must be managed properly to maintain compliance with this regulation. This regulation applies to the facility.
- 7.h. SWCAA 400-060 "Emission Standards for General Process Units" requires that all new and existing general process units do not emit PM in excess of 0.23 g/Nm³_{dry} (0.1 gr/dscf) of exhaust gas. The facility has general process units; therefore, this regulation applies to the facility.
- 7.i. SWCAA 400-109 "Air Discharge Permit Applications" requires that an ADP application be submitted for all new installations, modifications, changes, or alterations to process and emission control equipment consistent with the definition of "new source". Sources wishing to modify existing permit terms may submit an ADP application to request such changes. An ADP must be issued, or written confirmation of exempt status must be received, before beginning any actual construction, or implementing any other modification, change, or alteration of existing equipment, processes, or permits. This regulation applies to the facility.
- 7.j. SWCAA 400-110 "New Source Review" requires that SWCAA issue an ADP in response to an ADP application prior to establishment of the new source, emission unit,

or modification. The new units meet the definition of a new source; therefore, this regulation applies to the facility.

- 7.k. SWCAA 400-111 "Requirements for Sources in a Maintenance Plan Area" requires that no approval to construct or alter an air contaminant source will be granted unless it is evidenced that:
- (1) The equipment or technology is designed and will be installed to operate without causing a violation of the applicable emission standards;
 - (2) Emissions will be minimized to the extent that the new source will not exceed emission levels or other requirements provided in the maintenance plan;
 - (3) BACT will be employed for all air contaminants to be emitted by the proposed equipment;
 - (4) The proposed equipment will not cause any ambient air quality standard to be exceeded; and
 - (5) If the proposed equipment or facility will emit any toxic air pollutant regulated under WAC 173-460, the proposed equipment and control measures will meet all the requirements of that Chapter.

The facility is located in a maintenance plan area; therefore, this regulation applies to the facility.

8. RACT/BACT/BART/LAER/PSD/CAM DETERMINATIONS

The proposed equipment and control systems incorporate BACT for the types and amounts of air contaminants emitted by the processes as described below:

BACT Determination(s)

- 8.a. BACT Determination – Flexographic Printing Plate Manufacturing. The use of process enclosure and high efficiency solvent recovery has been determined to meet the requirements of BACT for flexographic printing plate manufacturing operations at this facility.
- 8.b. Prevention of Significant Deterioration (PSD) Applicability Determination. This permitting action will not result in a potential increase in emissions equal to or greater than the PSD thresholds. Therefore, PSD review is not applicable to this action.
- 8.c. Compliance Assurance Monitoring (CAM) Applicability Determination. CAM is not applicable to any emission unit at this facility because it is not a major source and is not required to obtain a Part 70 (Title V) permit.

9. AMBIENT IMPACT ANALYSIS

- 9.a. Criteria Air Pollutant Review. Emissions of NO_x, CO, PM, VOC (as a precursor to O₃), and SO₂ are emitted at levels where no adverse ambient air quality impact is anticipated.

- 9.b. Toxic Air Pollutant Review. Approved BACT measures at the facility will limit emissions of Class A and B toxic air pollutants to below the applicable Small Quantity Emission Rates (SQER) or Acceptable Source Impact Level (ASILs) specified in WAC 173-460.

Conclusions

- 9.c. Increasing the VOC limit, as proposed in ADP application CL-3299, will not cause the ambient air quality requirements of 40 CFR 50 "National Primary and Secondary Ambient Air Quality Standards" to be violated.
- 9.d. Increasing the VOC limit, as proposed in ADP application CL-3299, will not cause the requirements of WAC 173-460 "Controls for New Sources of Toxic Air Pollutants" or WAC 173-476 "Ambient Air Quality Standards" to be violated.
- 9.e. The increased VOC limit, as proposed in ADP application CL-3299, will not violate emission standards for sources as established under SWCAA General Regulations Sections 400-040 "General Standards for Maximum Emissions," 400-050 "Emission Standards for Combustion and Incineration Units," and 400-060 "Emission Standards for General Process Units."

10. DISCUSSION OF APPROVAL CONDITIONS

SWCAA has made a determination to issue ADP 25-3712 in response to ADP application CL-3299. ADP 25-3712 contains approval requirements deemed necessary to assure compliance with applicable regulations and emission standards as discussed below.

- 10.a. Supersession of Previous Permits. ADP 25-3712 supersedes ADP 19-3348 in its entirety. Compliance will be determined under this ADP, not previously superseded ADPs. Existing approval conditions for units not affected by this project have been carried forward unchanged.
- 10.b. General Basis. Permit requirements for equipment affected by this permitting action incorporate the operating schemes proposed by the applicant in ADP application CL-3299. Permit requirements established by this action are intended to implement BACT, minimize emissions, and ensure compliance with applicable requirements on a continuous basis. Emission limits for approved equipment are based on the maximum potential emissions calculated in Section 6 of this TSD.
- 10.c. Monitoring and Recordkeeping Requirements. Sufficient reporting and recordkeeping requirements were established to document compliance with the established emission limits, provide for general requirements (upset reporting, annual emission inventory submission), and assist in the compliance assessment during on-site inspections. Records of maintenance activities and the results of periodic inspections conducted by facility personnel are required because they are valuable tools for regulatory inspectors and plant personnel. In addition, these records can be used to determine appropriate operating and maintenance requirements in a future permitting action.

- 10.d. Reporting Requirements. General reporting requirements were established for annual air emissions, upset conditions and excess emissions. Specific reporting requirements are established for coating consumption, fuel consumption, and material throughput. Reports are to be submitted on a semi-annual basis.

11. START-UP AND SHUTDOWN/ALTERNATIVE OPERATING SCENARIOS/POLLUTION PREVENTION

- 11.a. Start-up and Shutdown Provisions. Pursuant to SWCAA 400-081 "Start-up and Shutdown", technology-based emission standards and control technology determinations must take into consideration the physical and operational ability of a source to comply with the applicable standards during start-up or shutdown. Where it is determined that a source is not capable of achieving continuous compliance with an emission standard during start-up or shutdown, SWCAA will include appropriate emission limitations, operating parameters, or other criteria to regulate performance of the source during start-up or shutdown.

To SWCAA's knowledge, this facility can comply with all applicable standards during start-up and shutdown.

- 11.b. Alternate Operating Scenarios. SWCAA conducted a review of alternate operating scenarios applicable to equipment affected by this permitting action. The permittee did not propose or identify any applicable alternate operating scenarios. Therefore, none were included in the approval conditions.
- 11.c. Pollution Prevention Measures. SWCAA conducted a review of possible pollution prevention measures for the facility. No pollution prevention measures were identified by either the permittee or SWCAA separate or in addition to those measures required under BACT considerations. Therefore, none were included in the approval conditions.

12. EMISSION MONITORING AND TESTING

There are no emission monitoring or testing requirements established as part of this permitting action.

13. FACILITY HISTORY

- 13.a. Previous Permitting Actions. The following past permitting actions have been taken by SWCAA for this facility:

Permit	Application	Date Issued	Description
19-3348	CL-3085	July 18, 2019	Permitting an existing flexographic printing plate manufacturing operation.

- 13.b. Compliance History. The following compliance issues have been identified for this facility within the past five years:

NOV	Date	Violation
10742	July 27, 2023	Failure to pay registration fee.
11350	December 31, 2024	Exceeded VOC emission limit.

14. PUBLIC INVOLVEMENT OPPORTUNITY

- 14.a. Public Notice for ADP Application CL-3299. Public notice for ADP application CL-3299 was published on the SWCAA website for a minimum of fifteen (15) days beginning on May 21, 2025.
- 14.b. Public/Applicant Comment for ADP Application CL-3299. SWCAA did not receive specific comments, a comment period request, or any other inquiry from the public or the applicant regarding ADP application CL-3299. Therefore, no public comment period was provided for this permitting action.
- 14.c. State Environmental Policy Act. After review of the SEPA Checklist for this project, SWCAA has determined that the project does not have a probable significant impact on the environment and has issued Determination of Non-Significance 25-027. An Environmental Impact Statement is not required under RCW 43.21C.030(2)(c).