



EASTMAN KODAK COMPANY METHYLENE CHLORIDE RISK MANAGEMENT

February 2024

AGENDA



Kodak Today Overview



Kodak's role in the Entertainment & Film Industry



Kodak Applications & Usage



Discussion around potential recommendations.

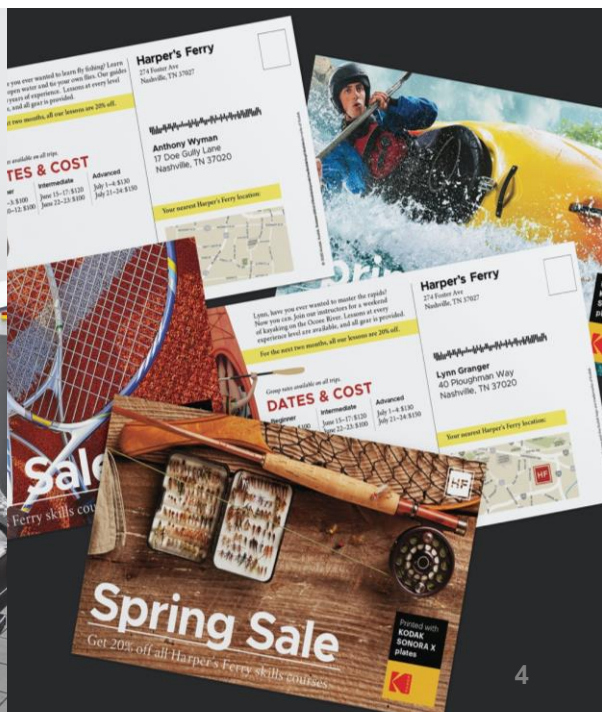
A GLOBAL COMPANY

Kodak locations worldwide



FAST FACTS

- **Incorporated:** Under the name Eastman Kodak Company in 1892
- **Corporate headquarters:** Rochester, N.Y.
- **NYSE listing:** KODK
- **Employees:** Approximately 4,300 worldwide
- **Global reach:** More than 25,000 customers with products available in 150+ countries
- **Revenue (2022):** \$1.2 billion

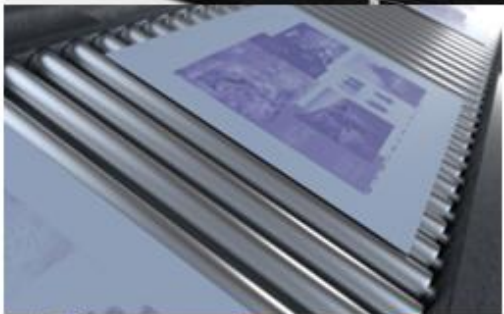


KODAK BUSINESSES TODAY



DIGITAL PRINT

KODAK PROSPER Inkjet Presses and imprinting systems, next-generation KODAK ULTRASTREAM Inkjet Technology, KODACHROME Inks and Coatings, and KODAK PRINERGY Workflow Software.



TRADITIONAL PRINT

Offset plates, including KODAK SONORA Process Free Plates and computer-to-plate imaging devices.



ADVANCED MATERIALS AND CHEMICALS

Films including motion picture, still films, aerial, and printed circuit boards; advanced materials for functional printing and light blocking technology; coating substrates for EV batteries and energy storage; synthetic chemicals and inks; solvent recovery, purification, and reuse.



MOTION PICTURE FILM

Award-winning camera and projection films in formats from 8 mm to 65 mm.



EASTMAN BUSINESS PARK

A 1,200-acre innovation hub and manufacturing center.



BRAND LICENSING

Licensing the Kodak brand.

KODAK'S CURRENT USAGE OF METHYLENE CHLORIDE

Description of Use	Proposed Regulatory Action	Primary Alternative
Industrial and commercial use as a laboratory chemical	WCPP	WCPP
Disposal of generated waste streams of methylene chloride	WCPP	WCPP
Processing: incorporation into a formulation, mixture, or reaction product.	WCPP	WCPP
Industrial and commercial use as a processing aid (to manufacture chemicals)	Prohibited	WCPP
Industrial and commercial use in adhesives, sealants and calks, sub-use for film cartridge adhesives (use in Kodak film manufacturing to weld Super 8 film cartridges)	Requesting flexibility for sub-uses not contemplated by rule	
TSCA Section 6(g)(1)(A) exemption (Kodak Professional Film Cement used by a very small number of global uses for film editing and restoration)	Requesting flexibility for sub-uses not contemplated by rule	



POTENTIAL ADVERSE IMPACTS UNDER PROPOSAL

The proposed rule has a detrimental impact on important domestic processes and products in the film and print industries. As proposed it could:

- Risk the infrastructure of photographic film that rely on legacy workflows and equipment
- Discontinue or significantly disrupt the Super 8 Film product line that has been in existence for nearly 60 years and remains culturally significant.
- Substantially hinder the institutional use for preservation and restoration of socially and historically significant motion picture art and cultural materials.
- Eliminate a valued traditional art form used in America's Motion Picture Industry.

RECOMMENDATIONS FOR CONSIDERATION

1. Adopt the “primary alternative regulatory action” that allows companies to implement the WCPP and other requirements when used as a processing aid and in cellulose triacetate film production.
2. Allow a sub-use to the condition of use for industrial and commercial use in adhesives, sealants and caulks to enable use in Kodak film manufacturing to weld Super 8 film cartridges pursuant to the WCPP.
 - Sub-Use: industrial adhesive in photographic film cartridges
3. Adopt 10-year exemption under TSCA Section 6(g)(1)(A) for commercial use of Kodak Professional Film Cement

SUPER 8 FILM CARTRIDGES

SUPER 8 FILM

In 1965 a revolutionary new movie film format was introduced, and the world of movie-making has not been the same since.

Notable names in the Motion Picture Industry began their filmmaking careers using Super 8 film and continue capturing their works with professional film formats.

Gateway to analog filmmaking.

Super 8 film is also used extensively in professionally made music videos, commercials, television, and feature films.

The film medium, including the distinct look of Super 8, is still considered the gold standard within the industry.

This year, 44 OSCAR® nominations, including 5 for best picture, were captured on Kodak film.

Super 8 sales have grown substantially year over year since 2020.



KODAK SUPER 8 CAMERA



- Kodak spent eight years developing a new Super 8 movie camera and launched it in December 2023.
- It is the first new cartridge-load Super 8 Camera brought to market in ~40 years.
- Kodak made this significant investment to preserve the artform and meet the needs of passionate users that desire to keep vintage cameras functional as a media for their artform.
- Thousands of users have signed up in advance to buy one at a price point of \$5,495, demonstrating customer enthusiasm and commitment to the format.

SUPER 8 FILM CARTRIDGE

- Automated equipment assembles the film cartridge:
 - Spools film inside of a black plastic cartridge
 - Applies methylene chloride to weld the 2-piece box in a semi-enclosed area
 - Incorporates several engineering controls (local ventilation)
- Potential worker exposure tasks:
 - Fill reservoir with 1 liter Methylene Chloride, once daily
 - Operator attendance required during assembly, to feed parts and remove finished cartridges



RISK MANAGEMENT CONTROLS

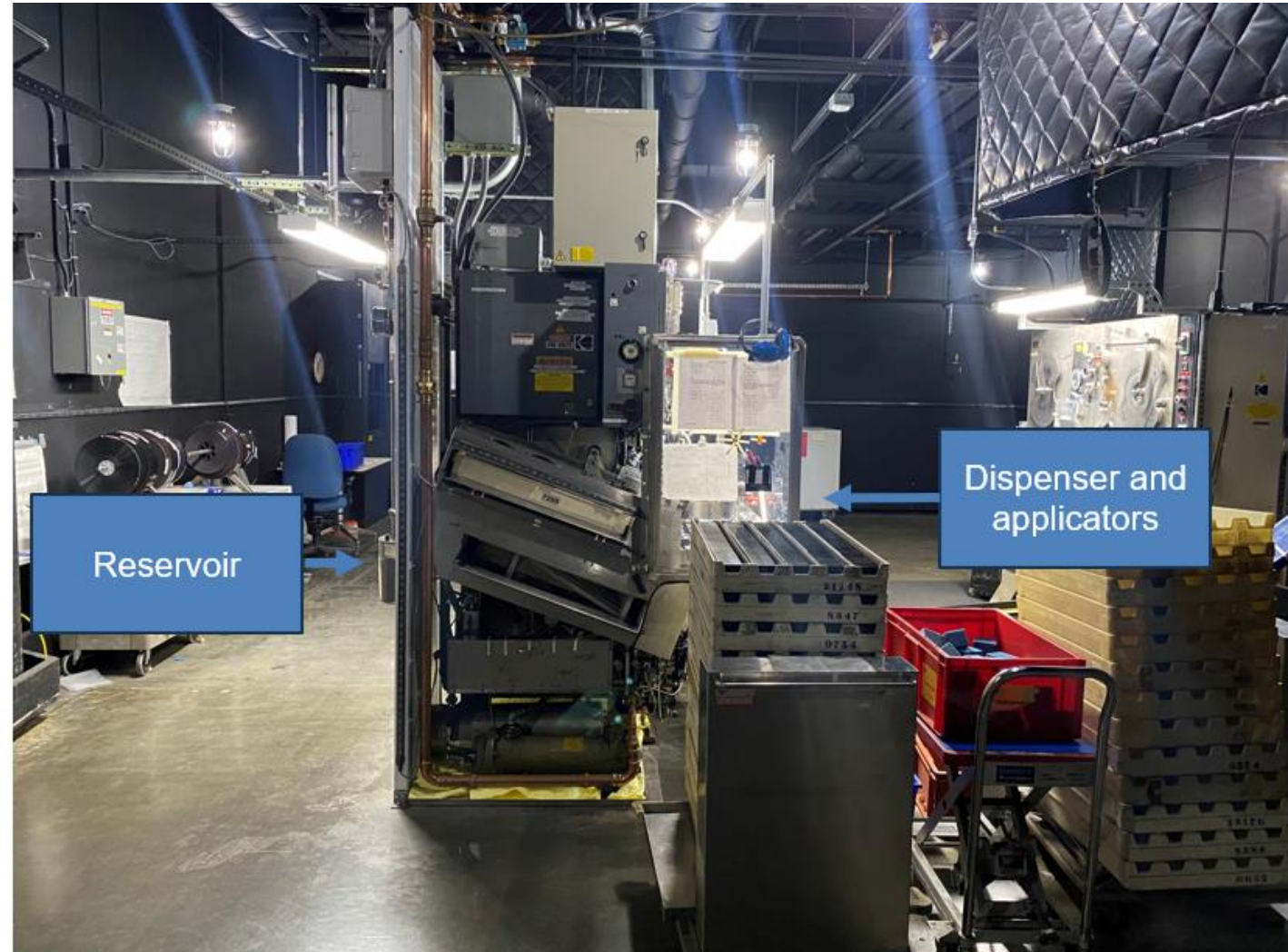
CONTROLS	SPECIFICS
Engineering Controls	<ul style="list-style-type: none">• General and Local ventilation• Semi-enclosed welding area• Additional controls can be implemented to comply with a WCPP.
Administrative Controls	Training and procedures
PPE	<ul style="list-style-type: none">• Safety glasses with side shields• Hearing protection• Nitrile gloves when filling reservoir
Industrial Hygiene	Monitoring studies demonstrate compliance with both OSHA and ACGIH occupation exposure limits.
Respiratory Protection Program	Can be implemented to comply with a WCPP.

EQUIPMENT DEMONSTRATION

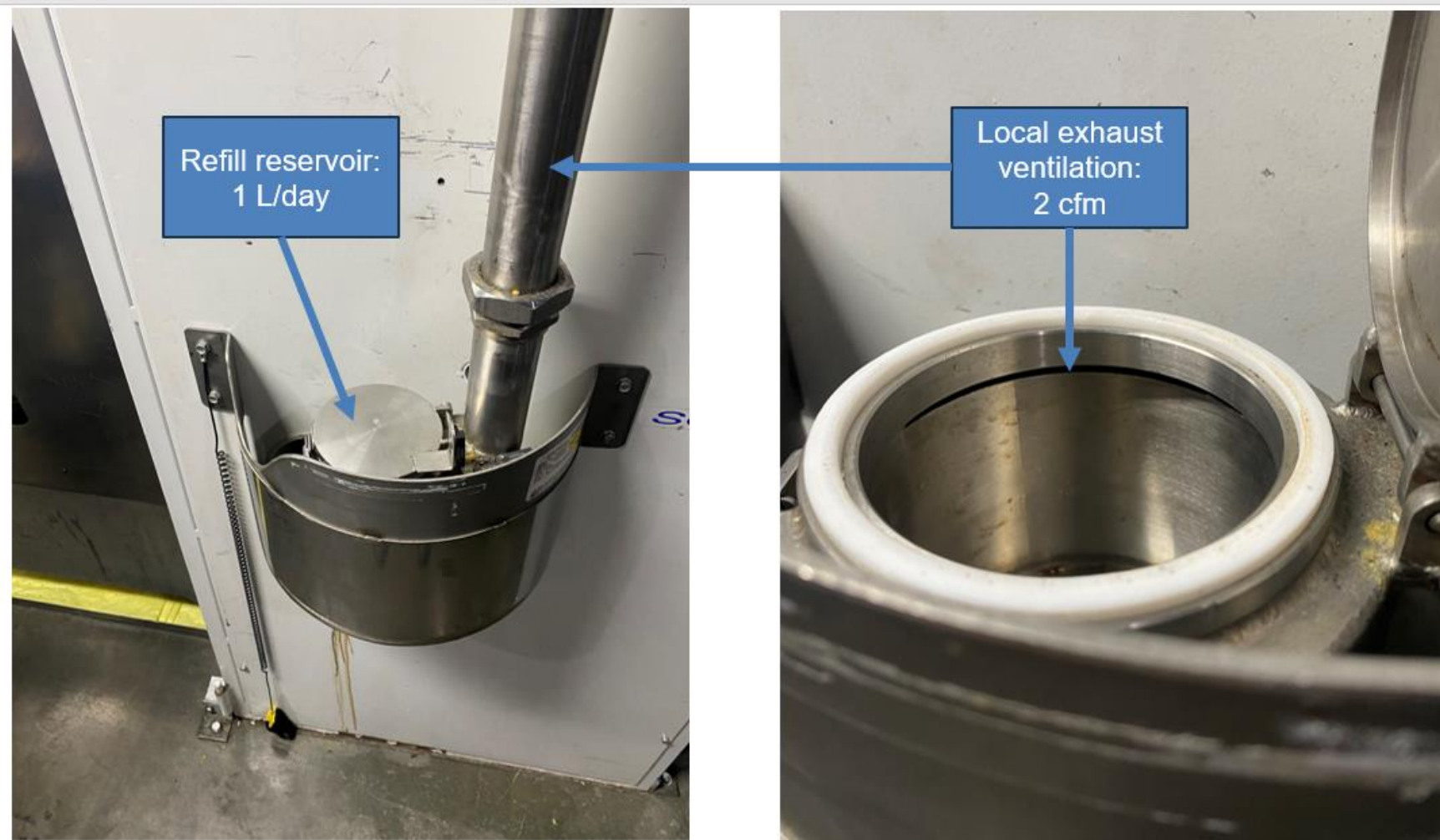
Room size:
53 ft x 23 ft x 15.5
ft

Air Flow:
5,555 cfm

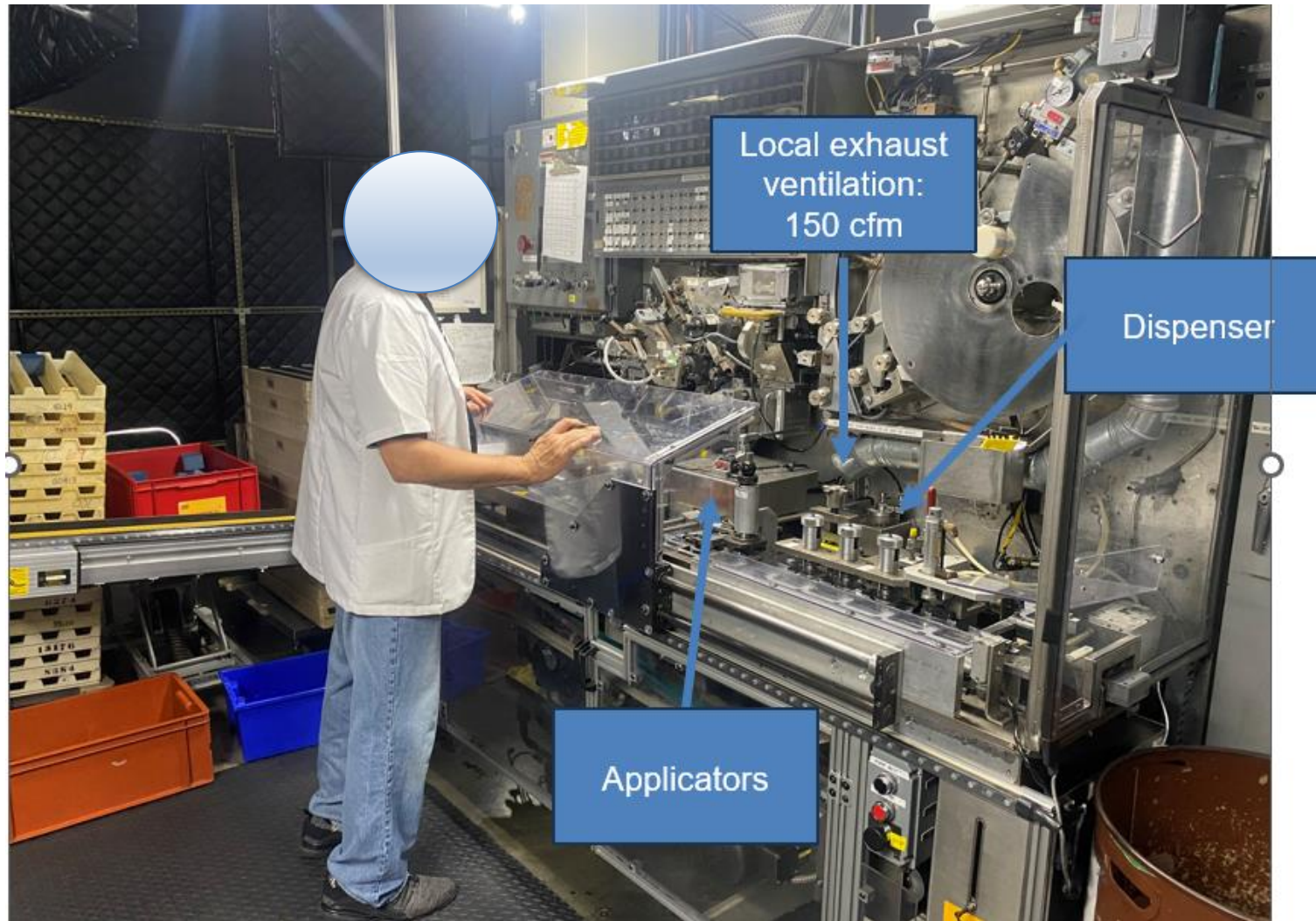
Air Change Rate:
 17.6 h^{-1}



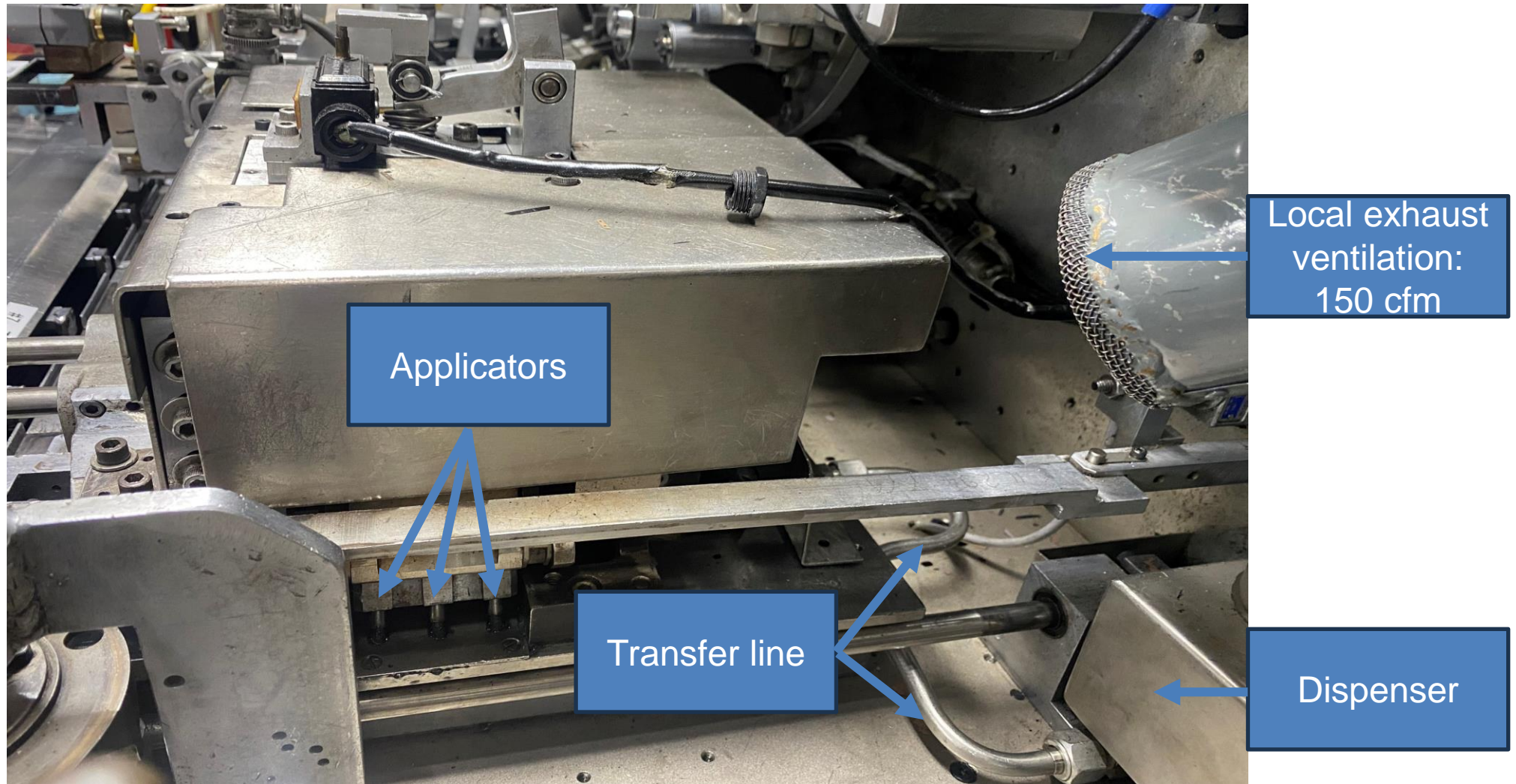
EQUIPMENT DEMONSTRATION, CONT.



EQUIPMENT DEMONSTRATION, CONT.



EQUIPMENT DEMONSTRATION, CONT.



OCCUPATIONAL EXPOSURE DATA

Description	Sample Duration	Results
Personal Sample, 1L methylene chloride addition to machine reservoir	15 minutes	<3 ppm
Personal Sample, 1L methylene chloride addition to machine reservoir	15 minutes	3.7 ppm
Average: 3.4 ± 0.49 ppm		
Personal sample, 8-hr TWA of spooler room operator	480 minutes	1.1 ppm
Personal sample, 8-hr TWA of spooler room operator	480 minutes	1.1 ppm
Personal sample, 8-hr TWA of spooler room operator	480 minutes	3.6 ppm
Personal sample, 8-hr TWA of spooler room operator	480 minutes	3.4 ppm
Personal sample, 8-hr TWA of spooler room operator	480 minutes	2.1 ppm
Personal sample, 8-hr TWA of spooler room operator	480 minutes	3.9 ppm
Average: 2.5 ± 1.3 ppm		

OSHA STEL: 125 ppm
Proposed EPA STEL: 16 ppm

OSHA PEL: 25 ppm
 OSHA AL: 12.5 ppm
 ACGIH TLV: 50 ppm
Proposed EPA ECEL: 2 ppm

Additional engineering controls or respiratory protection program can be implemented to comply with the WCPP

RECOMMENDATIONS

- Allow a sub-use to the condition of use for industrial and commercial use in adhesives, sealants and caulks to enable use in Kodak film manufacturing to weld Super 8 film cartridges pursuant to the WCPP
 - Sub-Use: industrial adhesive in photographic film cartridges

KODAK FILM CEMENT
PROFESSIONAL GRADE

WHAT IS FILM CEMENT?

- Used by small group of trained professionals in film editing and film preservation to dissolve the film base.
- Joins two pieces of film at the frame line to create a seamless image transition.
- Applied like nail polish along the frame line.
- 26% Methylene Chloride.



<https://www.folkstreams.net/vafp/clips/using-the-16mm-maier-hancock-hot-or-cement-splicer>

FILM CEMENT CUSTOMERS



Filmmakers

- While a small number of commercial movies are shot on film, many use digital technologies for editing and distribution to theaters.
- A very small number of commercial filmmakers use traditional printing techniques that requires cutting and splicing together film strips.
- Traditional printing is considered the most premier, esteemed way to release a film, "The Gold Standard", it is also used by early career filmmakers.



Educational Programs

- Film students are taught the traditional methods of filmmaking and film restoration in small group, supervised, and controlled settings



Archivists

- Preservation and restoration of socially and historically significant film media by non-profit organizations, academia and governmental agencies.
- **U.S. LIBRARY OF CONGRESS**, Established by the National Film Preservation Act of 1988, the National Film Preservation Board works to ensure the survival, conservation and increased public availability of America's film heritage.

CRITERIA FOR EXEMPTION UNDER SECTION 6(g)(1)(A)

- Critical or Essential Use with No Feasible Alternative:
 - Essential to preserve American historical records and valuable motion picture artform in the United States.
 - No technically feasible alternative to edit and restore cellulose triacetate film.
 - Impossibility because Methylene Chloride was used to manufacture the film
- Mitigating Factors for Hazard and Exposure
 - Very small quantities, limited number of users, use limited to roughly 20 milliliters (<1 fluid oz) per week.
 - Skilled and trained users
 - Exemption could limit use to professional applications



Cine Film Splicing
(photomemorabilia.co.uk)

<https://www.folkstreams.net/vafp/clips/using-the-16mm-maier-hancock-hot-or-cement-splicer>

RECOMMENDATION

- Adopt 10-year exemption under TSCA Section 6(g)(1)(A) for commercial use of Kodak Professional Film Cement
 - Exemption period would allow industry and EPA opportunity to evaluate whether this previously unconsidered and highly specialized use poses an “unreasonable risk” under TSCA and, if so, to determine whether a WCPP or product formulation change could be implemented to eliminate that risk.



SUMMARY

- Adopt the “primary alternative regulatory action” that allows companies to implement the WCPP and other requirements when used as a processing aid and in cellulose triacetate film production.
- Allow a sub-use to the condition of use for industrial and commercial use in adhesives to enable use in Kodak film manufacturing to weld Super 8 film cartridges pursuant to the WCPP
 - Sub-Use: industrial adhesive in photographic film cartridges
- Adopt 10-year exemption under TSCA Section 6(g)(1)(A) for commercial use of Kodak Professional Film Cement

KODAK TEAM

Vanessa Bendetti – Head of Motion Picture & Entertainment & VP EKC

Vanessa oversees Kodak's business involving Entertainment Imaging products and services.

Melanie Marshall – Manager HSE Rochester Operations

Melanie is Kodak's TSCA Compliance Manager, and her team is responsible for assisting Kodak Rochester's manufacturing operations in meeting their HSE and regulatory obligations.

Kristin Williams- VP of Public Affairs & Chief Privacy Officer

Kristin manages government relations activities for Kodak.



Thank you!