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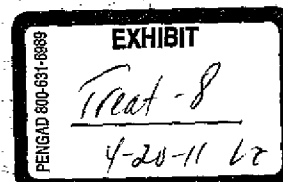
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The Industrial Commission
Of Ohio
Division Of Safety & Hygiene
246 N. High St., Col. O. 43215



August 12, 1983

Mary Gerard
Safety Director
D.A.P.
855 North Third Street
Tipp City, Ohio 45371

Dear Ms. Gerard:

On May 31, June 1, and June 3 an industrial hygiene survey was conducted at the Dayton plant by this writer with the assistance of Bob Prim, Industrial Hygienist, and Don Bentley, Engineer. Sampling at the Tipp City plant was completed July 26, 1983 and will be the subject of a separate report.

Sampling and analytical methods used are discussed in Attachment 1. Analysis of all samples, excluding noise dosimetry, was conducted by an accredited laboratory. Data tables A-D have been organized according to the area sampled. The date of the survey is shown in the upper left-hand corner of these tables. The noise data is shown in tables E-G, date in upper right-hand corner.

As can be seen from the attached tables, for the most part, exposures were within acceptable limits established by the agencies referenced. (Attachment 2) These values represent exposures only under the conditions and production levels found during this survey and may vary considerably under other conditions, particularly in the winter months.

Caution must also be used in applying respirable "nuisance dust" standards to some of the chemicals which are handled by the compounders for which little, if any, toxicological information is available. Of concern specifically are the powdered preservatives and fungicides used, for which sampling methods are not yet available.

D.A.P.
Page Two

Of more immediate concern is the lab report of approximately 1-3% tremolite asbestos in a bulk sample of talc (Code 22) which was in use during the survey. The respirable dust values cannot be used to project asbestos exposure levels. Asbestos monitoring must be conducted in accordance with the OSHA regulation 29 CFR 1910.1001, (Attachment 3).

Due to the lack of local exhaust ventilation for compounding areas and due to the extreme health hazard posed by asbestos exposure, it is recommended that use of this particular talc be eliminated. As we understand the situation, there are several suppliers of Code 22, most of who state on material safety data sheets that the talc is non-fibrous. According to our conversation during the Tipp City survey, the talc in question was supplied by Vanderbilt. The lab reports an approximate $\pm 25\%$ accuracy in determining the asbestos content of a talc bulk sample by polarized light staining microscopy. The chemist stated that the manufacturers generally are not using the criteria of a 3:1 length-to-diameter ratio in determining asbestos content, and thus their reports of asbestos content are generally lower.

If use of the Vanderbilt talc continues, initial monitoring of employee exposure is required by the current OSHA asbestos standard. The Director of the Occupational Safety and Health Administration recently described the 2.0 fibers per cubic centimeter permissible exposure limit (PEL) as "insufficient to prevent cancer, at least in some cases." He projected that revision of the PEL and issuance of a final rule should be completed later this year (1983).

In the interim and until initial monitoring results are available, it is recommended that, in areas where the asbestos-containing talc is in use, employee use of respirators approved for protection against toxic dust including asbestos (not the 3M 8710) become mandatory and that strict housekeeping practices for dust control be implemented. Dry sweeping of dust containing asbestos is prohibited. Clean-up methods include wet methods which prevent reentrainment of the dust after the water has evaporated or high-efficiency filtered vacuum systems. (Attachment 4 for illustration purposes only)

It is also recommended that since asbestos had been used to a much larger extent in the past, an effort be made to identify those employees who incurred exposure and to place them in a medical surveillance program. Such a program would include an annual or semi-annual physical examination, pulmonary function testing and chest X-rays. Implementation of such a program may lead to early detection, and thus early treatment, for asbestos-related disease, perhaps reducing the suffering and costs now associated with asbestosis and cancer. You may wish to contact the Kettering Lab of the University of Cincinnati College of Medicine, the Mt. Sinai School of Medicine in New York, or the National Institute for Occupational Safety and Health (NIOSH) in Cincinnati, Ohio, for information concerning a medical surveillance program.

D.A.P.
Page Three

The following paragraphs regarding asbestos have been summarized from several resources. Much additional information is available through contacting our Resource Center in Columbus, Ohio, at 1 (800) 282-3045.

Asbestos fibers find entry into the body by inhalation and ingestion. The fibers are retained in the body tissues throughout the lifetime of the host, even long after cessation of exposure. Fibers may migrate to other organs following retention in the lung. Asbestosis and certain malignancies are related to exposure to fibers of the asbestos minerals.

Asbestosis is a progressive restrictive pulmonary fibrosis associated with inhalation of asbestos fibers. Malignancies related to the inhalation and possibly ingestion of asbestos fibers by epidemiological studies include carcinomas of the lung, mesotheliomas of the pleura and peritoneum, and neoplasms of other sites.

Asbestos has a synergistic effect with cigarette smoking in producing carcinoma of the lung. Asbestos workers who are smokers have over 90 times the risk of non-exposed non-smokers of contracting lung cancer.

Although respirator use is now considered voluntary in the compounding area, a physical exam to determine if an employee is capable of wearing a respirator is standard practice. Such a determination is required by the 1980 ANSI standard Z-88.2 paragraph 3.5.3 and is referenced in the OSHA standard 29 CFR 1910.134. In regard to your question on OSHA enforcement activity on this matter, the Industrial Hygiene Department of the OSHA Cincinnati Area Office was contacted but the details (company name, exposure levels) were not discussed. Mr. Dick Gilgrist stated the requirement for physicals was not generally cited without documentation of overexposures, however the situation would be evaluated on a case-by-case basis with factors such as working-force age, smoking history, history of cardiovascular disease, heat stress, and past exposure to toxic chemicals considered.

Regardless of Federal policy in enforcing or not enforcing this standard, the determination by a physician that an employee should not suffer additional cardiovascular or pulmonary stress or experience other physical problems before he or she is given a respirator to wear is important in protecting worker health and possibly in reducing future occupational disease claims. Such an exam also provides an excellent opportunity to review selection, fitting, cleaning and storage practices included in a respiratory protection program.

The nature of some of the materials handled in the Dayton plant presents the opportunity for the development of dermatitis. It was observed that cleaning of the Butyl-flex line was conducted by employees who were not wearing protective gloves. Solvents can defat the skin causing dryness, irritation and cracking which can be complicated by infection. Additionally, some solvents enter the bloodstream through the skin, the skin acting as a route of exposure.

32

0005 1248

D.A.P.
Page Four

Norval Phillips, a compounder, complained of a "poison-ivy" type rash after using Napocide N-40-D. According to the material safety data sheet this material is a skin irritant and "causes an increased tendency to become allergic." Apparently, the manufacturer is stating the fungicide is a sensitizer. We observed that Norval used disposable clothing, a dust mask, and gloves when adding Napocide to the batch. Such strict measures to prevent skin contact should be implemented among all compounders who handle Napocide, and those exhibiting hypersensitivity should not be required to handle the material.

According to Patty's Industrial Hygiene and Toxicology, Vol. 1, the classification of dusts as nuisance or "inert" can be misleading and a more correct implication would be that such dusts do not cause pulmonary fibrosis, physical impairment or disease." Inert dusts do not produce fibrosis, but increased airway resistance can result from excessive mucous production stimulated by the deposition of inert particles on the surface of the upper airways. Although exposure to such dust may not be as potent a factor in causing chronic bronchitis and emphysema as cigarette smoke, there is some evidence according to Patty that "occupational dust" may at least contribute to chronic bronchitis.

The ability of the Napocide to cause allergic reactions illustrates our introductory cautionary statement concerning the classification of such materials in their dry form as "nuisance dust." In general, fungicides and preservatives must contain one or more biologically active ingredients in order to be effective.

The specific chemicals in use are listed below for ease of reference. The lab could not provide sampling method information for any of these:

Code 187	Dowacil 75	- 67.5%	1-(3 chloroallyl)-3,5,7-triaza-1-azonia-domentane chloride
Code 774	Troysan 174	-	2-[(hydroxy ethyl) amino] ethanol
Code C-795	Nuo Sept 95	- 24.5%	5-hydroxy methoxy methyl-1-aza-3,7-dioxabicyclo (3.3.0) octane
		17.7%	5-hydroxy methyl-1-aza-3,7-dioxabicyclo (3.3.0) octane
		7.8%	5-hydroxypoly [methylene oxy (74.4% C ₂ , 21% C ₃ , 4% C ₄ , 1% C ₅)] methyl-1-aza-3,7-dioxabicyclo (3.3.0) octane
Code	Napocide N-40-D	- 40.4%	tetrachloroisophthalanitrile

D.A.P.
Page Five

The material safety data sheets provided little toxicological information for these chemicals, but all were listed as eye, skin, or respiratory irritants. Until information is available to the contrary, it should be assumed that inhalation of or skin contact with these materials may elicit a negative response in humans. Use of adequate protective equipment including protective clothing and gloves, respirators, and goggles is advised.

The noise levels were for the most part below an 8-hour time-weighted average of 85 dBA during the survey date. The exception was on the Panel Line where exposures were borderline, 86 dBA and 84 dBA for the operator and crew chief, respectively. Employees in this area should be included in a hearing conservation program as outlined in Attachment 5.

Control of compressed air noise from the straight tubing used to move parts along this packaging line might reduce employee exposure to a point where a hearing conservation program is not needed in this area. A longer sample is needed for the Butyl-flex packaging line.

Due to resource limitations, we cannot conduct an annual industrial hygiene survey; however, we will try to assist you in monitoring specific processes as requested. Our three-day survey did not enable us to sample several operations which are of interest. One of these is the premix compounding for Butyl-flex in which the "rubber hog" is used. The noise and dust from this operation was the subject of more than one complaint by employees. The operation was scheduled for June 3, 1983, but was cancelled when an employee did not report for the first shift.

In addition to the "rubber hog" other operations for which sampling is recommended include the following:

1. Cabosil transfer in small Flexiseal Room - dust
2. Putty making of pipe joint and soil pipe cement - dust
3. Ceramic tile adhesive - ammonia
4. Compounding of products which contain Code 586 for free crystalline silica.
5. Compounding of products which contain Code 803 (PVC acetate emulsion) - formaldehyde. A grab sample taken with a Lion Formaldehyde Meter showed 17 ppm formaldehyde present in the head space of a drum of Code 803 immediately after the cover of the drum was lifted. The meter reading may have been falsely high due to interferences from alcohols; however, it does indicate employee exposure monitoring is warranted.

34

0005 1250

D.A.P.
Page Six

6. Six-stem packaging line in General Compounding for full shift noise exposure. This operation only ran a half day during our survey.
7. Filling lithocans, which are reported to be noisier than the paper-labeled cans.
8. Full-shift monitoring for Butyl-flex packaging line. A 135-minute sample was obtained due to scheduling difficulties.
9. Filling of epoxy products containing Cellosolve acetate (compounded in Tipp City) See Attachment 6.
10. Duratite 6000 compounding - toluene
11. Because past sample results in General Compounding and other mixing areas were for total dust, it would be helpful to obtain additional total dust samples for comparison. However, given the choice between obtaining total dust samples and respirable dust samples in the limited time available, we chose to sample for respirable dust since this more accurately represents the amount of dust which enters the deeper portions of the lung. The filter contained in the 10mm nylon cyclone used is generally considered to capture particles of less than 10 microns in diameter which are defined as respirable.

It is interesting to note in Table A the large variation in the total dust sample and respirable dust sample obtained for the pigment weigher, 80.0 mg/M³ vs. 1.0 mg/M³, respectively. The total dust sample may have been tampered with, but the cyclone sample for respirable dust appeared normal. The total dust and respirable dust sample results for the spackling compounder are much closer in value; 2.2 mg/M³ and 1.4 mg/M³, respectively.

Please contact our Dayton District Office (513) 898-3206 if you need further assistance or have questions concerning this report. It was a pleasure to work with you and other D.A.P. employees.

Respectfully submitted,

Marilyn Priddy

Marilyn Priddy
Industrial Hygienist

MP:gjb

35

0005 1251

D.A.P.
Page Seven

Enclosures: Attachment 1 - "Sampling and Analytical Methods"
Attachment 2 - "Applicable Occupational Health Standards"
Attachment 3 - 29 CFR 1910.1001 - OSHA Asbestos Std.
Attachment 4 - Vendor literature on toxic dust vacuum sweepers
Attachment 5 - Summary of Hearing Conservation Std.
Attachment 6 - NIOSH Current Intelligence Bulletin #39.
Table A - General Compounding
Table B - Room 205
Table C - Panel Room
Table D - Flexiseal Room
Table E - Noise Exposures 5-31-83
Table F - Noise Exposures 6-3-83
Table G - Grab Samples - Noise

Attachment 1

"Sampling and Analytical Methods"

Dust

Respirable dust samples were collected on tared PVC filters contained in 10mm nylon cyclones. The cyclone was placed in the breathing zone of the worker by attaching it to his or her collar. Tygon tubing connected the cyclone to a calibrated Model G MSA pump which was attached to the worker's belt.

The cyclone separates the dust into the respirable portion (particles with an aerodynamic diameter less than 10 microns), captured by the filter and the non-respirable portion (particles with an aerodynamic diameter greater than 10 microns), which is collected in the grit pot and discarded. In general, particles larger than 10mm are trapped in the nasal passages, throat, larynx, and bronchi from which they are expectorated or swallowed. Particles less than 10mm can be deposited in the terminal recesses of the lungs which allows interaction with delicate pulmonary tissues.

Total dust samples were collected on tared PVC filters with Model G MSA pumps for power supply. Both types of samples were submitted to an accredited industrial hygiene laboratory where they were analyzed for weight gain.

Bulk samples were analyzed for silica content with X-ray diffraction and for asbestos content with polarized light staining microscopy. Less than 1% quartz was found in the bulks submitted. Asbestos content of the tale is discussed in the report.

Solvents

Breathing-zone samples were collected using charcoal tubes and Sipin pumps and 3M Organic Vapor Monitors. The pumps were calibrated at a rate to allow a morning and afternoon sample to be obtained (70-75 cc/min). Analysis was by gas chromatography.

The results reported "as hexane" are used by the lab to report concentrations of mixed petroleum solvent vapors other than those specifically requested. For example, mineral spirits, VM&P naphtha and similar materials may contain 15-50 different components. A mg/M^3 value can be obtained for mineral spirits or VM&P naphtha when a bulk is submitted for analysis and no other specific chemicals are requested. But, the separation identification of the individual components cannot be determined completely. In most cases, specific chemicals such as toluene or n-hexane were also of interest, so the lab was requested to report the balance "as hexane" rather than in mg/M^3 .

Attachment 1 (Continued)

Noise

Sound pressure (noise) levels were evaluated using Quest dosimeters calibrated before and after use. These dosimeters are personal sampling monitors that measure the sound pressure which reaches the ear. Because the dosimeters continually integrate during the entire testing period, the result represents the worker's average exposure for a standard workday. With these devices, short periods of intense noise or of quiet have little effect on the overall average. The range of error for dosimeters is approximately plus or minus 2 decibels. This means that sound pressure levels may actually be slightly higher or lower than the figure reported. Dosimeters used were Quest, Model 7B and Dupont, Model MK-1.

The columns in Table E and F labeled "Calculated by dosimeter" represent the time-weighted average calculated for the time the dosimeter was worn by the employee. The columns labeled "8-hr. TWA" represent the exposure calculated by assuming zero exposure for the time the dosimeter was not worn - lunch and time at beginning and ending of shift. The 8-hour TWA was not calculated in a few instances where only a half day sample was obtained.

Instantaneous sound pressure levels were evaluated with a General Radio 1988 Precision Sound Level Meter and Analyzer calibrated before and after use. Instantaneous measurements are made to confirm tests made with dosimeters and to map areas where workers may be overexposed to noise. (See Table G)

Attachment 2

"Applicable Occupational Health Standards"

Standards and guidelines from three different health organizations have been displayed in the Tables. Probably the most familiar of these is the Occupational Safety and Health Administration (OSHA) — the promulgator and enforcement agency of occupational health laws. In its 1970 inception OSHA adopted the threshold limit values (TLVs) established by the American Conference of Governmental Industrial Hygienists (ACGIH) forming the foundation of their occupational exposure regulations. OSHA, however, unlike the ACGIH does not have the immediate flexibility to change or update a particular standard without first submitting it for congressional approval or the issuance of an emergency temporary standard. Thus, only a hand full of compliance standards have altered since OSHA's inception (i.e. the standards for lead, vinyl chloride, noise, etc.). On the other hand, the ACGIH reviews annually their TLVs in light of current research developments, epidemiological studies, clinical evidence, and laboratory experiments making appropriate changes when a guideline appears deficient. Furthermore, the ACGIH qualifies their guidelines in stating that

"Threshold Limit Values refer to airborne concentrations of substances and represent conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect. Because of wide variations in individual susceptibility, however, a small percentage of workers may experience discomfort from some substances at concentrations at or below the threshold limit; a smaller percentage may be affected more seriously by aggravation of a pre-existing condition or by development of an occupational illness. The TLV-TWA should be used as guides in the control of health hazards and should not be used as fine lines between safe and dangerous concentrations."

The National Institute for Occupational Safety and Health or NIOSH in turn is OSHA's supporting research organization. Under the 1970 OSHA Act, NIOSH is responsible for identifying occupational safety and health hazards, for determining methods to control them, and for recommending Federal standards to limit the hazards. The NIOSH proposed standards, based on much of the same information as the ACGIH TLVs, are standards to be considered by OSHA for future promulgation in providing optimum protection for workers.

Attachment 5

"Summary of Hearing Conservation Standard"

I. Monitoring

The hearing conservation amendment requires employers to monitor noise exposure levels in a manner that will accurately identify employees who are exposed to noise at or above 85 decibels (dBA) averaged over eight working hours, called an 8-hour time-weighted average (TWA). The exposure measurement must include all noise within an 80 dBA to 130 dBA range and must be taken during a typical work situation.

Under the revised amendment, employees are entitled to observe monitoring procedures and they must be notified of the results of the exposure monitoring of their workplace. The method used to notify employees is left to the discretion of the employers.

II. Audiometric Testing

Audiometric testing not only monitors the acuity of an employee's hearing over time, but also provides an opportunity for employers to educate employees about hearing and the need to protect it. The important elements of an audiometric testing program include baseline audiograms, annual audiograms, training, and follow-up procedures. Audiometric testing must be made available to all employees who have average exposure levels over an 8-hour period of 85 dBA. And the audiometric testing program follow-up should indicate whether hearing loss is being prevented by the employer's hearing conservation program. A professional audiologist, and otolaryngologist, or a physician must be responsible for the program. Both professionals and trained technicians may conduct audiometric testing.

A. Baseline Audiograms

The baseline audiogram is the reference against which future audiograms are compared. Baseline audiograms must be provided within 6 months of an employee's first exposure at or above an 8-hour TWA of 85 dBA. Where employers are using mobile test vans to obtain audiograms, baseline audiograms must be completed within one year after an employee's first exposure. If delayed for one year, the exposed employees must be issued and fitted with hearing protectors to be worn until the baseline audiogram is obtained.

B. Annual Audiograms

Annual audiogram must be conducted within one year of the baseline. Annual audiograms must be routinely compared to baseline audiograms to determine whether the audiogram is accurate and to determine whether the employee has lost hearing ability (that is, if a standard threshold shift (STS) has occurred.) STS is defined in the amendment as an average shift in either ear of 10 dBA or more at 2000, 3000, and 4000 Hz.

Attachment 5 (Continued)

III. Audiogram Evaluation

If an STS is identified, employees must be fitted or refitted with adequate hearing protectors, shown how to use them, and required to wear them. Employees must be notified within 21 days from the time the determination is made that their audiogram results showed an STS. If subsequent audiometric tests show that the STS is not persistent, employees whose exposure to noise less than a TWA of 90 dBA may discontinue the wearing of hearing protectors.

IV. Hearing Protectors

Hearing protectors must be available to all workers exposed to 8-hour TWA noise levels of 85 dBA or more. This requirement will ensure that employees have access to protectors before they experience a loss in hearing. Hearing protectors must be worn by: 1) employees for any period exceeding 6 months from the time they are first exposed to 8-hour TWA of 85 dBA or above until they receive their baseline audiograms in situations where baseline audiograms are delayed because of mobile test van convenience; 2) employees who have incurred an STS since these workers have demonstrated that they are susceptible to noise; and 3) employees exposed over the permissible exposure level (PEL), and 8-hour TWA of 90 dBA or above.

Hearing protectors must adequately reduce the severity of the noise level for each employee's work environment. If workplace noise levels increase, employees must be given more effective hearing protectors. The protector must reduce employee exposures to at least 90 dBA and to 85 dBA when a STS has already occurred in the worker's hearing. Employees must be shown how to use and care for their protectors and must be supervised on the job to ensure that they continue to wear them correctly.

V. Training

Employee training is very important. When workers understand the reasons for the hearing conservation program's requirements and the need to protect their hearing, they will be better motivated to participate actively in the program. Employees exposed to TWA's of 85 dBA and above must be trained at least annually in the effects of noise, the purpose, advantages, and disadvantages of various types of hearing protectors; the selection, fitting and care of protectors; and the purpose and procedures of audiometric testing.

VI. Recordkeeping

Noise exposure measurement records must be kept for 2 years. Records of audiometric test results must be maintained for the duration of employment of the affected employee. Audiometric test records must include the name and job classification of the employee, the date, the examiner's name, the date of acoustic or exhaustive calibration, measurements of the background sound pressure levels in audiometric test rooms, and the employee's most recent noise exposure measurement.

41

0005 1257

D.A.P. - Dayton

June 1, 1983

TABLE A

NAME/SITE SAMPLED	POSITION/ OPERATION	CONTAMINANT	TIME SAMPLED	TWA for time Sampled	8-hr. TWA	TLV - TWA		
				CONCENTRATION DETERMINED		OSHA STANDARD	NIOSH PROPOSAL	ACGIH STANDARD
				in mg/M ³		in mg/M ³	in mg/M ³	in mg/M ³
General Compounding	Spackling Compounder	Cyclone: • Respirable Dust	401	1.7	1.4	5	—	5
** General Compounding	33 Glaze * Compounder	PVC filter • Total Dust	374	7.4	5.7	15	—	10
	• Contains Talc, Code 22					** Resample and use asbestos standard:		
Bulk Sample	Code 22, Talc	Asbestos - Tremolite		1-3%		2.0 f/cc (under review)	0.1 f/cc	2.0 f/cc

mg/M³ = Milligrams per cubic meter of air

ppm = Parts per million of air

OSHA = Occupational Safety and Health Administration

NIOSH = National Institute of Occupational Safety & Health

ACGIH = American Conference of Governmental Industrial Hygienists

TLV = Threshold Limit Value

TWA = Time Weighted Average

— or N.A.S. = No Applicable Standard

f/cc = fibers > 5 µm/cubic centimeter

SHIH-001

0005 1258

42

D.A.P. - Dayton

Page 2 of Table A

June 1, 1983

TABLE A

NAME/SITE SAMPLED	POSITION/ OPERATION	CONTAMINANT	TIME SAMPLED	TWA for time Sampled	8-hr. TWA	TLV - TWA		
				CONCENTRATION DETERMINED		OSHA STANDARD	NIOSH PROPOSAL	ACGIH STANDARD
				in ppm		in ppm	in ppm	in ppm
General Compounding	Kwik Seal Compounder	OVM: • Butyl acrylate	440	< 1.0	< 1.0	150	—	150
				in mg/M ³		in mg/M ³	in mg/M ³	in mg/M ³
General Compounding	Pigment Weigher	Cyclone:	393	0.14	0.11	5	—	5
		PVC filter:						
		• Total Dust:	203	150	—			
		— a.m.	150	52	—			
		— p.m.	353	108.8	80.0	15	—	5
** Sample appeared to have been tampered with								

mg/M³ = Milligrams per cubic meter of air

ppm = Parts per million of air

OSHA = Occupational Safety and Health Administration

NIOSH = National Institute of Occupational Safety & Health

ACGIH = American Conference of Governmental Industrial Hygienists

TLV = Threshold Limit Value

TWA = Time Weighted Average

— or N.A.S.

No Applicable Standard

SHH-001

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43

D.A.R. - Dayton

June 3, 1983

TABLE A

NAME/SITE SAMPLED	POSITION/ OPERATION	CONTAMINANT	TIME SAMPLED	TWA for time Sampled	8-hr. TWA	TLV - TWA		
				CONCENTRATION DETERMINED	OSHA STANDARD	NIOSH PROPOSAL	ACGIH STANDARD	
				in mg/M ³	in mg/M ³	in mg/M ³	in mg/M ³	
General Compounding	Pigment Weigher	Cyclone: • Respirable Dust	352	1.3	1.0	5	—	5
* Handled Code 22 which was found to contain 1-3% tremolite (asbestos), should be resampled.								
				in mg/M ³	in mg/M ³	in mg/M ³	in mg/M ³	
General Compounding	Packaging Compounder - 4 batches	PVC filter: • Total Dust	370	2.8	2.2	15	—	10

mg/M³ * Milligrams per cubic meter of air
ppm * Parts per million of air
OSHA * Occupational Safety and Health Administration
NIOSH * National Institute of Occupational Safety & Health
ACGIH * American Conference of Governmental Industrial Hygienists

TLV - Threshold Limit Value
TWA - Time Weighted Average
- or N.A.S. - No Applicable Standard

SHH-001

0003 1236

D.A.P. - Dayton

June 1, 1983

TABLE B

NAME/SITE SAMPLED	POSITION/ OPERATION	CONTAMINANT	TIME SAMPLED	TWA for time sampled	8-hr. TWA	TLV - TWA	
				CONCENTRATION DETERMINED	OSHA STANDARD	NIOSH PROPOSAL	ACGIH STANDARD
				in ppm	in ppm	in ppm	in ppm
Room 205	Butyl-flex - Compounder	Charcoal Tube: • Mineral spirits & VM&P naptha "as hexane"	204 (p.m. only)	26	—	60	—
		• Benzene		<0.01	10	—	10, A2
		OVM: • Mineral spirits & VM&P naptha, "as hexane"	465	31	30	60	—
		• Benzene		<0.01	<0.01	10	10, A2
				in mg/M ³	in mg/M ³	in mg/M ³	in mg/M ³
Bulk Sample	* Contains Code 22, Talc Code 22, Talc	Cyclone: • Respirable Dust	426	0.25	0.22	5	5
		Asbestos-tremolite		1-3% tremolite	2.0 f/cc (under review)	0.1 f/cc	2.0 f/cc

mg/M³ = Milligrams per cubic meter of air
 ppm = Parts per million of air
 OSHA = Occupational Safety and Health Administration
 NIOSH = National Institute of Occupational Safety & Health
 ACGIH = American Conference of Governmental Industrial Hygienists

TLV - Threshold Limit Value
 TWA - Time Weighted Average
 — or N.A.S. - No Applicable Standard
 A2 - Suspect carcinogen
 f/cc - fibers > 5 um/cubic centimeter

SHIH-001

45

0003 1237

D.A.P. - Dayton

June 3, 1983

TABLE B

NAME/SITE SAMPLED	POSITION/ OPERATION	CONTAMINANT	TIME SAMPLED	TWA for time Sampled	8-hr. TWA	TLV - TWA		
				CONCENTRATION DETERMINED	OSHA STANDARD	NIOSH PROPOSAL	ACGIH STANDARD	
Room 205	Blacklite Compounder - 3 batches	Cyclone: • Respirable Dust	359	in mg/M ³	in mg/M ³	in mg/M ³	in mg/M ³	
				0.06 0.04	5	—	5	
		OVM: • Benzene • rest "as hexane"	133 * (p.m. only)	in ppm	in ppm	in ppm	in ppm	
				<0.01 — 10 —	10 —	— —	10, A2 —	

* Charcoal tube pump failed in a.m., so OVM used for p.m. sample.

mg/M³ = Milligrams per cubic meter of air
 ppm = Parts per million of air
 OSHA = Occupational Safety and Health Administration
 NIOSH = National Institute of Occupational Safety & Health
 ACGIH = American Conference of Governmental Industrial Hygienists

TLV = Threshold Limit Value
 TWA = Time Weighted Average
 — or N.A.S. = No Applicable Standard
 A2 = Suspect Carcinogen

SHIH-001

0003 1238

46

D.A.P. - Dayton

June 3, 1983

TABLE B

NAME/SITE SAMPLED	POSITION/ OPERATION	CONTAMINANT	TIME SAMPLED	TWA for time	8-hr- TWA	TLV - TWA		
				sampled		OSHA STANDARD	NIOSH PROPOSAL	ACGIH STANDARD
				CONCENTRATION DETERMINED				
				in mg/M ³	in mg/M ³	in mg/M ³	in mg/M ³	in mg/M ³
- Room 205	Tops Compounder - 2 batches	Cyclone: • Respirable Dust	397	0.37	0.31	5	—	5
				in ppm	in ppm	in ppm	in ppm	in ppm
		OVM: • Benzene	433	<0.01	<0.01	10	—	10, A2
		• "as hexane"		6.6	6.0	—	—	—
- Room 205	MRM Line Surface Deglasser	OVM: • Benzene • rest "as hexane"	468	<0.01 18	<0.01 18	10 —	— —	10, A2 —

mg/M³ = Milligrams per cubic meter of air
 ppm = Parts per million of air
 OSHA = Occupational Safety and Health Administration
 NIOSH = National Institute of Occupational Safety & Health
 ACGIH = American Conference of Governmental Industrial Hygienists

TLV - Threshold Limit Value
 TWA - Time Weighted Average
 — or N.A.S. - No Applicable Standard
 A2 - Suspect Carcinogen

SHH-001

0003 1239

47

D.A.P. - Dayton

June 3, 1983

TABLE B

NAME/SITE SAMPLED	POSITION/ OPERATION	CONTAMINANT	TIME SAMPLED	TWA for time sampled	8-hr. TWA	TLV - TWA		
				CONCENTRATION DETERMINED		OSHA STANDARD	NIOSH PROPOSAL	ACGIH STANDARD
				in ppm	in ppm	in ppm	in ppm	in ppm
- Room 205	MRM Line Surface Deglosser — 796 gallons — 3600 quarts — fan not on	Charcoal Tube:	394					
		• Toluene		5.2	4.3	200	100	100
		• Acetone		11.7	9.6	1000	246	750
		• Benzene		<0.01	<0.01	10	—	10, A2
		• Butyl acetate		<1.0	<1.0	150	—	150
		• Mineral spirits, "as hexane"		10.4	8.5	500	60	—
		OVM:	447					
		• Butyl cellosolve		0.14	0.13	50	—	25

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SHIH-001

0003 1240

48

D.A.P. - Dayton

June 3, 1983

TABLE B

				TWA for time sampled	8-hr. TWA	(TLV - TWA		
NAME/SITE SAMPLED	POSITION/ OPERATION	CONTAMINANT	TIME SAMPLED	CONCENTRATION DETERMINED		OSHA STANDARD	NIOSH PROPOSAL	ACGIH STANDARD
				in ppm		in ppm	in ppm	in ppm
- Room 205	MRM Line Surface Deglosser	Charcoal Tube:	392					
		• Toluene		4.1	3.4	200	100	100
		• Acetone		10.1	8.3	1000	246	750
		• Benzene		<0.01	<0.01	10	—	10, A2
		• Butyl acetate		<1.0	<1.0	150	—	150
		• "as hexane"		9.1	7.5	—	—	—
		OVM:						
		• Isopropanol	447	5.8	5.4	400	—	400

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 TWA - Time Weighted Average
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 A2 - Suspect Carcinogen

SHIH-001

0003-1241

49

D.A.P. - Dayton

June 3, 1983

TABLE B

NAME/SITE SAMPLED	POSITION/ OPERATION	CONTAMINANT	TIME SAMPLED	TWA for time sampled	8-hr. TWA	TLV - TWA		
				CONCENTRATION DETERMINED		OSHA STANDARD	NIOSH PROPOSAL	ACGIH STANDARD
				in ppm		in ppm	in ppm	in ppm
- Room 205	Butyl-flex Line cleaning, using Mineral Spirits	OVM: • Benzene • rest "as hexane"	300	<0.01 25	<0.01 16	10 —	— 60	10, A2 —
* Area Sample	" "	Charcoal Tube: • Benzene • rest "as hexane"	209	<0.01 33	<0.01 —	10 —	— 60	10, A2 —
* Employee who was being sampled did not return from lunch, so sample left in work area for an area sample.								

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SHIH-001

50

0003 1242

D.A.P. - Dayton

June 1, 1983

TABLE C

NAME/SITE SAMPLED	POSITION/ OPERATION	CONTAMINANT	TIME SAMPLED	TWA for time sampled	8-hr. TWA	TLV - TWA		
				CONCENTRATION DETERMINED		OSHA STANDARD	NIOSH PROPOSAL	ACGIH STANDARD
				in ppm	in ppm	in ppm	in ppm	in ppm
- Panel Room - Struthers - Wells Mixer	Duratite 4000 Compounder	Charcoal Tube:	420					
		• Toluene		7.8	6.8	200	100	100
		• n-hexane		29.8	26.1	500	100	50
		• Benzene		<0.01	<0.01	10	—	10, A2
		• Lactol spirits "as hexane"		5.0	4.3	—	60	—
		OVM:	463					
		• Isopropanol		5.8	5.6	400	400	400
		Cyclone:	421	in mg/M ³	in mg/M ³	in mg/M ³	in mg/M ³	in mg/M ³
		• Respirable Dust		0.30	0.26	5	—	5

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SHIH-001

0003 1243

51

D.A.P. - Dayton

Page 1 of Table D

June 1, 1983

TABLE D

NAME/SITE SAMPLED	POSITION/ OPERATION	CONTAMINANT	TIME SAMPLED	TWA for time sampled	8-hr. TWA	TLV - TWA		
				CONCENTRATION DETERMINED	OSHA STANDARD	NIOSH PROPOSAL	ACGIH STANDARD	
				in ppm	in ppm	in ppm	in ppm	
Clarence Bilorey - Flexiseal Room	Construction Adhesive Compounder	Charcoal Tube:	424	19.7	17.4	500	100	50
		• n-hexane		3.8	3.3	300	—	300
		• Cyclohexane		<0.01	<0.01	10	—	10, A2
		• Benzene		<1.0	<1.0	500	85	400
		OVM:	461	<1.0	<1.0	1000	—	1000
		• Ethanol						
				in mg/M ³	in mg/M ³	in mg/M ³	in mg/M ³	
		Cyclone:	420	0.28	0.25	5	—	5
		• Respirable Dust						

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SHIH-001

0003 1244

D.A.P. - Dayton

Page 2 of Table D

June 3, 1983

TABLE D

				TWA for time	8-hr. TWA	TLV - TWA		
				sampled				
NAME/SITE SAMPLED	POSITION/ OPERATION	CONTAMINANT	TIME SAMPLED	CONCENTRATION DETERMINED		OSHA STANDARD	NIOSH PROPOSAL	ACGIH STANDARD
				in ppm		in ppm	in ppm	in ppm
- Flexiseal Room	Schwerdel Filler - Construction Adhesive - 798 quarts	Charcoal Tube: • n-hexane • Benzene • Cyclohexane • n- heptane • rest "as hexane"	181 * (p.m. only)	11.1	—	500	100	50
				0.01	—	10	—	10, A
				1.3	—	300	—	300
				1.0	—	500	85	400
				1.0	—	—	—	—
		OVM: • n-hexane	436	25	23	500	100	50
* Pump malfunction for a.m. charcoal tube sample								

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SHIH-001

0003 1245

53

TABLE E

For noise level surveys
 Company Location D.A.P. - Dayton
 Surveyor M. Priddy & B. Prim

Date of Survey May 31, 1983

Model DuPont MK-1

Calibrated

by dosimeter 8 hr TWA

Monitor Serial Number	Work area	Name of Employee	Calibration Reading Start/Finish	Time on	Time off	Hr/Min Min. Elapsed Time	115B Exceeded? Yes/No	D Reading at End of Day	Equivalent* continuous sound level (dBA)	COMMENTS: Employee performing normal duties
784	Spackling		113.9/ ✓	7:23		6:57	Y	22.9	80.4	79 Crew Chief
767	"		113.9/ ✓	7:25		6:53	Y	33.3	83.2	82 Laborer-Utility
772	Fork Lift		113.5/ ✓	8:50		5:35	N	4.6	70.5	68 Production Area
839	Butyl-Flex		113.9/ ✓	8:54		5:39	N	29.4	83.7	81 Using Staple Gun 2 hrs. Butyl-flex package
902	Kwik-Seal		113.9/ ✓	7:29		6:51	N	13.2	76.6	75 Kwik Seal 2 hrs.
866	Panel Line		113.9/ ✓	7:36		7:01	N	54.6	86.6	86 Operator
894	"		113.7/ ✓	7:38		7:09	N	43.8	85	84 Crew Chief
785	Room 205		113.9/ ✓	7:41		7:23	N	34.3	83	82 Compounding Butyl
867	"		113.9/ ✓	7:45		7:30	N	14.0	77.5	76 Sigma Mixer Black- lite
768	Extruder		113.9/ ✓	7:50		6:34	N	13.6	77.0	76 Weatherstripping

0003 1246

56

QUEST DOSIMETERS:						Min.			Cal. with *		
5383	Rope Caulk		1.7/1.76	7:52	2:56	382	Y	20.8	80.3	79	Reclaim McNamara labeling qt. cans.
3704	Compounding Rm.		1.89/ ✓	7:58	11:57	228	Y	11.5	80.0	-	a.m. only **
3622	Room 205		1.72/ ✓	12:35	2:50	135	N	14.5	85.2	-	Buty-flex- plug. p.m. only
** dosimeter had loose wire at end of p.m. sampling											
DUPONT MK-1 ON JUNE 1, 1983											
784	Compound Room		✓	7:49	3:10	7:41	N	44.8	84.5	84	2/22/83

* = $90 + 16.61 (\log (12.5 \times T))$; T = time in hrs.

0003 1247

Company Location D.A.P. - Dayton
 Surveyor M. Priddy, D. Bentley, B. Prim

Date of Survey June 3
 Model Quest M-7B

Calculated
 by dosimeters 8 hr TWA

Monitor Serial Number	Work area	Name of Employee	Calibration Reading Start/Finish	Time on	Time off	Min. Elapsed Time	115B Exceeded? Yes/No	D Reading at End of Day	Equivalent* continuous sound level (dBA)	COMMENTS: Employee performing normal duties
3622	Room 205		1.75/1.81	7:43	11:50	247	N	10.1	78.2	- Tops a.m. only
- Due to low reading, switch to B. Dishman for p.m.										
3693	Flexiseal Rm.		1.76/1.76	7:50	11:57	247	N	18.00	Schwerdel	
				12:36	2:55	199	N	9.8	Filler	
						446	N	27.8	81.4	81
5383	"		1.76/1.78	7:50	12:01	251	N	21.2	Schwerdel Filler	
3640			1.76/1.81	12:37	3:05	148	N	36.4		
						399	N	57.6	87.4	86
3640	"		1.76/1.81	7:54	11:59	245	N	44.4	Putty Maker	
5383			1.76/1.78	12:43	3:07	144	N	14.2	Construction Adhesive	
						389	N	58.6	87.7	86
3622	Room 205		1.75/1.81	12:32	2:45	133	N	6.8	79.9	- Tops p.m. only
3639	Gen Camp		1.81/1.74	12:39	2:04	145	N	7.2	79.7	- 6 stem operated in p.m. only

56

0003 1248

TABLE G
Grab Samples - Noise

Work Area	Sample Location or Operation	dBA Level
Rope Extruder	At Operator's Station	78-79
#1 McNamara Stuffer	Background Level	< 75
Small Stuffer Q4-2	Background Level	< 75
Kwik Seal Area	At Operator's Station	< 75
General Compounding	Mixer #12	83
Flexiseal Room	Ross Mixer	80
<u>Room 205</u>		
• Butyl-flex Line	Feeding cylinders	86-88
	Metal plugs rotating in drum	95
	Operation station—Packaging	87
• Rear Wall	Labeling quart cans of Derusto Minut-Solv #5	83
<u>Print Room</u>		
• Elgin 2-stem	Packaging Area	83-86
	Stapling Boxes	87-92
	Cylinder Feeding	87-89
	Compressed air moving tube bottoms	97
• Struthers - Well Mixer	At Floor Level	86-87



The Industrial Commission
Of Ohio
Division Of Safety & Hygiene
244 N. High St., Col. O. 43218

EXHIBIT

Tent-9
4-20-11 Lr

PENGAD 800-631-6989

September 30, 1983

Mr. David L. Harrison
Safety & Regulatory
Affairs Coordinator
DAP Inc.
P.O. Box 277
Dayton, Ohio 45401

Dear Mr. Harrison:

We have received your letter dated September 22, 1983, expressing your disagreement with the asbestos section of our report concerning the industrial hygiene survey conducted at the Dayton plant on May 31, June 1, and June 3.

Analysis of the bulk samples of talc for asbestos content was conducted with polarized light dispersion staining microscopy by an accredited private laboratory—NATLSCO (National Lead Control Services Corporation). Please note that this is a different method from the phase contrast and X-ray diffraction methods used by OSHA in the past. Polarized light dispersion staining microscopy is a recognized method for asbestos identification and NATLSCO chemists report that their results are in line with those of the other labs participating in a round-robin survey conducted by the Research Triangle.

Please refer to our report page 2, paragraph 2. The controversy of the length-to-width ratio in asbestos determination between suppliers, who in general use a 25:1 ratio, and other laboratories who use the 3:1 ratio was mentioned previously. This controversy will probably continue.

Based on present information we do not feel our report is in error and do not intend to amend the report. However, we can assure you, as we assured Mary Garard before beginning the survey, that the report is confidential. Attached is a copy of the Workers' Compensation Law of Ohio, Section 4123.27 which should make it clear that information obtained during the survey will not be made public.

28

0005 1244

DAP Inc.
Page -2-

If you have any further questions, please contact me at 1(800)282-3045.

Sincerely,

Marilyn Priddy

Marilyn Priddy
Acting Director of
Industrial Hygiene & Engineering

MF:gjb

29

0005 1245