

## II. ILLUSTRATIVE FACTUAL SITUATION

### A. GENERALLY

#### § 3 In general

This article is concerned with the preparation of and trial of a case involving a factual situation in which a worker was injured at a construction worksite when he inhaled toxic fumes which were negligently sprayed in the area by employees of a painting contractor working in the same area. This division of the article presents the basic factual situation of the client's exposure,<sup>22</sup> technical information respecting the toxic substance involved and its application in a construction setting.<sup>23</sup>

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<sup>22</sup>See § 4.

<sup>23</sup>See §§ 5–8.

**§ 4 Toxic exposure incident**

The client, a 55-year-old foreman for a carpentry contractor, was working at a construction site containing a large metal vessel in which employees of the painting contractor were working with an industrial sealant that contained a combination of three toxic chemicals: methylene chloride, methyl ethyl ketone and methyl isobutyl ketone. The sealant was used to protect the stainless steel surface of the vessel during construction. The painters spraying the sealant within the vessel were supplied with special respirators to filter out the chemicals. The chemicals were so toxic that the respirator filters would be effective for only two to three hours. The employees of the carpentry contractor, such as the client, working within the vessel on projects other than the spraying of the sealant were not provided with respirators or protection of any type.

The chemicals in the sealant when exposed either to an open flame or a very hot surface, convert to phosgene gas, also known as mustard gas. An electrical arc such as one used in welding would provide sufficient temperatures and conditions necessary to convert fumes from the sealant into mustard gas. This type of welding was in process in parts of the same enclosed area of the vessel in which the painting contractor was spraying the sealant.

Officials of the painting contractor were, or should have been, aware of dangers to unprotected workers exposed to the toxic substances contained in the sealant. They had been specifically warned by employees of the chemical manufacturing company, which produced the sealant, that spraying the substance in an enclosed area where unprotected persons were working was particularly hazardous. Despite such warnings the painting contractor exposed individuals to the toxins of the sealant, and since exposure to the sealant would make the employees too sick to work, their work was pushed back from the first shift to the second shift. This resulted in the painting contractor receiving an extra 20 percent of labor costs under the construction contract.

The client reported that before his exposure he was present at a monthly safety meeting when employees of the carpentry contractor complained about the spraying of the sealant to officials of the owner of the plant under construction and the painting contractor and that on a later occasion the employees refused to enter the area while spraying of the sealant was be-

ing conducted. He stated that the spraying ceased for a time while members of the carpenter crew were in the area, but that it also resumed without restriction at a later date.

The client states that on the day of the accident he and his crew were working in the vessel when, without warning, employees of the painting contractor began spraying with the sealant. In a few minutes the area was enveloped in a fog. Shortly after the client noticed the fog, he passed out. He was pulled from the area by fellow workers and sent to the emergency room of a nearby community hospital. He regained consciousness in the hospital. He was earning \$500 per week when the exposure occurred and he has not worked since the accident. He presently suffers from disabling pulmonary conditions resulting from the exposure. He has been receiving workers' compensation medical and disability benefits. He has been referred to counsel by his workers' compensation attorney for consultation about a possible third-party liability action against the owner of the property where the construction was in progress, the general contractor of the project, the painting contractor, and the manufacturer of the sealant.

#### Cases

Application of Product Liability Act to bar salvage workers' recovery for exposure to polychlorinated biphenyls (PCBs) when dismantling sealed electrical transformers to recover copper coils did not amount to unconstitutional abolition of jural right; while workers claimed that right to recover for injuries inflicted by negligence was jural right, provision of Act that barred workers' recovery was merely codification of common law principle that manufacturer is not liable when product is subject to unauthorized alteration or modification. KRS 411.320(2). Monsanto Co. v. Reed, 950 S.W.2d 811 (Ky. 1997), reh'g denied, (Oct. 2, 1997).

**Contaminated clothing:** Claims of child of former employee of chemical company and spouse against chemical company and related corporations seeking damages resulting from child's contraction of mesothelioma allegedly caused by exposure to asbestos accumulated on parent's clothing while parent was at work "arose" in South Carolina, and thus claims were not precluded by Door Closing Statute, even though child was diagnosed in Virginia, where alleged exposure originated in South Carolina, and exercise of jurisdiction would be entirely consistent with, and would serve, goals of Door Closing Statute. Code 1976, § 15-5-150. Murphy v. Owens-Corning Fiberglas Corp., 346 S.C. 37, 550 S.E.2d 589 (Ct. App. 2001); West's Key Number Digest, Courts ⇨6.

### § 5 —Application to construction setting

The client in the model trial case herein was exposed to toxic fumes created by the spraying of an industrial sealant used to coat the stainless steel surface of a large, partially enclosed

metal vessel at a construction site. The sealant contained three chemicals which were later incriminated in the toxicity of the fumes from the spraying of the sealant: methylene chloride, methyl ethyl ketone and methyl isobutyl ketone.<sup>24</sup> To provide counsel with information concerning the sealant and its application,<sup>25</sup> the client's worker's compensation attorney has provided counsel with documents obtained from insurer for the client's employer, consisting of written instructions for application of the sealant that was being sprayed at the time of the client's exposure,<sup>26</sup> the manufacturer's recommendations concerning application of the product,<sup>27</sup> and the manufacturer's material safety data sheet.<sup>28</sup>

## B. INSTRUCTIONS AS TO USE OF TOXIC SUBSTANCE

### § 6 Contractor's Application Instructions

The painting contractor in the model trial case had issued written instructions for the application of solvents used at the worksite, including the sealant that was being sprayed at the time of the client's exposure. The instructions (set out below) particularly concern protective clothing required in the application and contain several warnings against exposing the product to heat or hot surfaces. They also warn of the toxicity of methylene chloride, an active ingredient of the sealant being sprayed at the time of the client's exposure. Significant passages of the instructions are set out in italics.

#### INSTRUCTIONS

##### I. APPLICATION

Coating is to be applied in accordance with manufacturers recommendations (see Enclosure No. 1 of this procedure), the safety precautions of Section II and the following:

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<sup>24</sup>See § 112 for sources of information concerning methylene chloride and other actual or potentially toxic chemicals.

<sup>25</sup>Pier, Cowles, Key & Nothstein, "Recognition and Evaluation of Hazards" in G. Nothstein, ed., *Toxic Torts: Litigation of Hazardous Substance Cases* §§ 1.01-1.26 (Shepard's/McGraw Hill 1984).

<sup>26</sup>See § 6.

<sup>27</sup>See § 7.

<sup>28</sup>See § 8.

On the use of manufacturers' material safety data sheets in toxic tort litigation, see Hawes & Chu, *Proximate Cause in Toxic-Tort Cases*, 23 *Trial* 68, 71 (Oct 1987).

1. Coating is to applied in three (3) coats of approximately three (3) mils thickness each, resulting in a total applied dry film thickness (DFT) of eight (8) to ten (10) mils, corresponding to an application rate of approximately three (3) gallons per 100 square feet.

2. Apply each coat thoroughly and uniformly to the surface. Each coat shall be applied at a rate of approximately one gallon per 100 square feet. Overlap each pass approximately 50 percent.

3. Each coat shall be applied using passes which are at right angles to those used for the preceding coat.

4. Care shall be taken to apply a coating thickness on the edges of plates which is at least as thick as that applied to the surface. Failure to do this could result in difficulty with the removal of the coating from the edges.

5. Allow each coat to dry to touch before application of the subsequent coat.

6. After the coating has dried, visually inspect for completeness of coverage and take dry film thickness (DFT) measurements using a paint inspection gage or other suitable instrument. DFT is to be not less than seven mils; there is no maximum DFT.

7. Apply an additional coat, if necessary, to meet coverage and thickness requirements. Small areas may be touched up using a brush.

## II. SAFETY PRECAUTIONS

1. The following safety precautions apply to the storage and handling of solvents specified in this procedure. These general precautions are to be supplemented by specific safety procedures where applicable.

2. Fire and explosion hazards are inherent in solvent cleaning operations. No work shall proceed until safe conditions have been established.

3. Protective equipment such as aprons, gloves, respirators, chemical safety goggles, face shields and protective creams shall be used as required to minimize exposure to the solvent. Protective equipment which will contact the material surface shall be clean, in order to avoid contamination of the surface. Care shall be taken not to contaminate material surface with protective creams.

4. Use only approved safety containers for storage of the solvent. Keep the container closed when not in use.

5. Use only the minimum amounts needed for the job. Do not spill. Carefully remove and safely dispose of rags or cloths wetted with solvent.

6. *Smoking, welding or burning shall be prohibited in the work areas.*

7. *Never use solvents on a hot surface. Highly explosive fumes may be created.*

8. Avoid exposing the skin to solvents. Protective gloves or ointments should be used. Care should be taken not to contaminate the material surface with ointments.

9. Avoid unnecessary breathing of solvent vapors.

10. *Following the wiping of surfaces with solvent, allow at least 15 minutes with good ventilation before performing welding or similar operations on the surfaces or immediately adjacent surfaces.*

11. The following precautions should be observed during the application of \_\_\_\_\_ *[product containing toxic ingredient]*. These general precautions are to be supplemented by specific safety procedures where applicable.

12. \_\_\_\_\_ *[Product containing toxic ingredient]* is nonflammable in its liquid state but may be slightly flammable in its spraying state. Therefore, smoking, welding, or burning shall be prohibited in the application area.

13. Always provide adequate fresh air ventilation to prevent accumulation of vapors or fumes.

14. Avoid breathing vapor or spray mist.

15. Avoid prolonged contact with the skin.

16. Keep the container closed when not in use.

17. *Spray operators shall wear protective clothing, gloves, respirators and face shields.*

18. \_\_\_\_\_ *[Product containing toxic ingredient]* contains Methylene Chloride, personnel experiencing discomfort or other toxic symptoms after exposure should immediately obtain medical attention.

*[Remainder of instructions omitted.]*

## § 7 — Solvent Manufacturer's Recommendations

The following are the manufacturer's written recommendations concerning application of the sealant being sprayed at the time of the client's exposure (the "enclosure 1" referred to in the application instructions).

ENCLOSURE No. 1  
MANUFACTURER'S RECOMMENDATIONS

## 1. Storage Conditions

Temperature—20° F to 100° F.

Humidity—0–100%.

Shelf Life—Do not exceed 12 months.

\_\_\_\_\_ [*Product containing toxic ingredient*] may be stored indoors or outdoors.

## 2. Flash Point

\_\_\_\_\_ [*Product containing toxic ingredient*] No. 67-00—None.

Reducer No. 80-197—None.

## 3. Surface Preparation

a. Surface shall be clean and free from dirt, grease, oil, and moisture.

b. Coating shall be applied as soon as possible after cleaning and drying.

## 4. Preparation for Application

a. Agitate \_\_\_\_\_ [*product containing toxic substance*] in the drum using heavy-duty agitation equipment for 15 to 20 minutes or until it is about the consistency of heavy cream. Continuous agitation and circulation during spraying operations is essential.

b. Thinning of \_\_\_\_\_ [*product containing toxic ingredient*] is not normally required if agitation of the material is sufficient and the temperature of the material is above 60° F. However, if thinning is required, up to one pint per gallon of No. 80-197 reducer may be added. Mix thoroughly.

c. The manufacturer has stated that acceptable substitutes for No. 80-197 reducer are MEK (Methyl Ethyl Ketone) and Methylene Chloride. Thinning with MEK results in the loss of non-flammability in the liquid and spraying states. Normal precautions for handling and spraying flammable liquids shall be observed. Nonflammability in the dry state is not affected.

## 5. Application

a. General: \_\_\_\_\_ [*Product containing toxic ingredient*] should be applied by conventional spray painting methods using an air pressure spray gun with an agitated pressure pot or pump.

b. Normal Temperature Conditions: (a) Surface: 40° to 100° F; Ambient: 40° to 100° F.

## c. Conventional Spray:

Hold gun six to eight inches from surface and adjust to spray a 6 to 8 inch fan.

Hold gun perpendicular to surface and spray steadily with a rhythmic motion that carries each pass well across and beyond the area being sprayed.

Overlap each succeeding pass by 50%.

The coating should have a shiny, "wet" appearance after spraying.

Spray horizontal surfaces first to minimize overspray. Carry each pass over and slightly down vertical surfaces. Then spray vertical surfaces.

Coat edges carefully to avoid thin areas at sharp corners.

Sagging or curtaining will occur when there is too much fluid and too little air atomization. To control sagging adjust the flow control on the gun until the air can properly atomize the fluid.

Successful application of \_\_\_\_\_ [*product containing toxic ingredient*] has been accomplished using a power flow pump at two to one ratio.

Air supply line to each pressure head should be a minimum of  $\frac{3}{4}$  inch ID.

Minimum line ID's from pump head to gun for a maximum line length of 75 feet are: Fluid— $\frac{5}{8}$  inch, Air— $\frac{1}{2}$  inch.

External atomization spray guns give better results than internal atomization guns.

Use fluid pressure of 40–50 psig.

Use an atomizing pressure of 80–800 psig.

d. Brush—For touch up only, medium bristle brush. Avoid rebrushing.

## 6. Clean up

Use \_\_\_\_\_ [*specified reducer or solvent*].

## 7. Drying

\_\_\_\_\_ [*Product containing toxic ingredient*] dries to touch in approximately 4 minutes and to handle in approximately 22 minutes.

**Cases**

Expert testimony and report by former Environmental Protection Agency (EPA) employee improperly attempted to invade province of court by interpreting meaning and applicability of Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) for the jury in concluding

whether certain actions constituted misbranding of pesticides in violation of FIFRA and whether statements of formula filed with EPA were misleading, and thus, proffered testimony was inadmissible; furthermore, even if substance of proposed expert's testimony was within proper scope, expert himself was not qualified to deliver those opinions. Fed.Rules Evid.Rule 702, 28 U.S.C.A. United Phosphorus, Ltd. v. Midland Fumigant, Inc., 173 F.R.D. 675 (D. Kan. 1997).

Genuine issues of material fact as to whether manufacturer of carpet treatment product knew that product, if inhaled, could cause respiratory damage, whether warning label on product was adequate to advise user of potential danger, whether worker could have protected himself from danger by wearing filter mask, and whether worker's injury was result of his inhaling product precluded summary judgment in favor of manufacturer and distributor in products liability action brought by worker claiming that inhalation of product caused him to develop reactive airways disease (RADs) or aggravated preexisting respiratory conditions. Fuller v. Chemical Specialities Mfg. Corp., 702 A.2d 1239 (D.C. 1997).

### § 8 Manufacturer's Material Safety Data Sheet

The manufacturer's material safety data sheet concerning a product containing hazardous chemicals or toxic substances will be extremely important for identifying the particular chemicals and substances used in the manufacturer or compounding of the product and in establishing the circumstances and conditions under which the use of the product may create a particular risk of harm. Set out below is the manufacturer's material safety data sheet from the model trial case.

#### CHEMICAL CORPORATION SAFETY DATA SHEET

Product Designation:

\_\_\_\_\_ [*Brand name*]

\_\_\_\_\_ [*Serial number*]

#### Section I. Identifying Information

Manufacturer's name: \_\_\_\_\_

Address: \_\_\_\_\_

Emergency phone number: \_\_\_\_\_

Trade names and synonyms: \_\_\_\_\_

Chemical family: \_\_\_\_\_

Chemical name and synonyms: \_\_\_\_\_

Formula: \_\_\_\_\_

#### Section II. Hazardous Ingredients

Ingredient	% By Weight	Hazard Data
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Methylene Chloride	50	100 ppm
Methyl Isobutyl Ketone	15	100 ppm
Methyl Ethyl Ketone	1	200 ppm
Inorganic Lead Compound		0.2 mg/M3

## Section III. Physical Data

Boiling Point:	Unknown
Vapor Pressure (mm Hg.):	Unknown
Vapor Density (AIR=1):	Unknown
Specific Gravity (H, O=1):	1.15
Solubility in water:	Unknown
Appearance and odor:	
Volatile by volume:	73%

## Section IV. Fire and Explosion Hazard Data

Flash point:	Not applicable
Flammable limits:	Unknown
Extinguishing media:	Does not apply
Special fire fighting procedures:	Water (fog nozzle) may be used to cool closed containers to prevent pressure buildup
Unusual fire and explosion hazard:	Keep containers tightly closed. Insulate from heat, electrical equipment, sparks and open flame.

## Section V. Health Hazard Data

Threshold limit value:	Not established for mixture
Effects of overexposure and toxicology:	Inhalation: May cause headache and dizziness.

Emergency and first aid procedures:

Skin or eye contact: Primary irritation.

Fumes: Remove from exposure. Keep warm and quiet.

Splash (eyes): Flush immediately with water for at least 15 minutes.

Splash (skin): Wash affected area with water.

Contact a physician.

#### Section VI. Reactivity Data

Stability: Stable

Conditions to avoid: Avoid spray equipment containing aluminum or zinc parts which come in contact with paint.

Incompatibility: May react with aluminum or zinc metal resulting in corrosion. Consult your spray equipment manufacturer for further information about this hazard.

Hazardous decomposition products: Toxic phosgene gas—if contact is made with flame or hot surface.

Hazardous polymerization: Will not occur.

#### Section VII. Spill or Leak Procedures

In case of spill: Remove all sources of ignition. Avoid breathing vapor. Ventilate area. Remove with inert absorbent and nonsparking tools.

Waste disposal methods: Dispose in accordance with local, state, and federal regulations.

Section VIII. Special Precaution Information

Respiratory protection: Ventilation—keep exposure below TLV and insure good ventilation.

Protective gloves: Required for repeated contact.

Eye protection: To protect against splash.

Other protective equipment: Use air supplied breathing equipment in confined areas.

Section IX. Special Precautions

Precautions to be taken in storing and handling: Do not store above 120 degrees. Store large quantities in areas approved for NFPA exempt liquids.

Other precautions: Do not take internally. Containers should be grounded when pouring.