

United States Court of Appeals For the First Circuit

No. 07-2422

JUNE A. TAYLOR, ET AL.,

Plaintiffs, Appellants,

v.

THE AMERICAN CHEMISTRY COUNCIL, ET AL.,

Defendants, Appellees,

AIRCO, INC., ET AL,
Defendants.

APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

[Hon. Michael A. Ponsor, U.S. District Judge]

Before

Boudin, Lipez, and Howard,
Circuit Judges.

Ronald Simon, with whom Simon & Associates, Herschel L. Hobson, The Law Office of Herschel L. Hobson, Peter B. Sessa, and Sessa, Glick & Quiroga LLP were on brief, for appellants.

Timothy J. Coughlin, Heidi B. Goldstein, Andrea B. Daloia,

Thompson Hine LLP, Richard L. Neumeier, Mark S. Granger, and Morrison Mahoney LLP on brief for appellees American Chemistry Council and Goodrich Corporation.

Samuel Goldblatt, with whom Joseph J. Leghorn, J. Christopher Allen, Jr., Nixon Peabody LLP, William E. Padgett, Michael Moon, Jr., and Barnes & Thornburg, LLP were on brief, for appellee The Dow Chemical Company.

Michael K. Callan, Doherty, Wallace, Pillsbury & Murphy, P.C., William Gorenc, Jr., and Marco, Marco & Bailey on brief for appellee GenCorp, Inc.

John B. Manning, Brian D. Gross, Cooley Manion Jones LLP, Gail C. Ford, and Vorys, Sater, Seymour and Pease LLP on brief for appellee Goodyear Tire & Rubber Company.

W. Ray Persons, with whom Carmen R. Toledo, King & Spalding, Lawrence G. Cetrulo, Christopher M. Tauro, and Cetrulo & Capone LLP were on brief, for appellee Union Carbide Corp.

August 3, 2009

LIPEZ, Circuit Judge. The surviving wife and sons of Claude Taylor ("Taylor") brought suit against various companies in the polyvinyl chloride ("PVC") industry and an industry trade association, alleging that their failure to warn, fraud, and civil conspiracy caused Taylor's wrongful death. After discovery, defendants moved for summary judgment on all counts. The district court granted summary judgment, holding that Taylor's employer, Monsanto Company ("Monsanto"), was a sophisticated user of defendants' products and the defendants owed Taylor no duty to warn about the dangers of their products. The district court dismissed the fraud and conspiracy claims as well, finding no evidence in the record that the defendants were responsible for the warnings in question, or that they had any knowledge of or control over Monsanto's activities at the plant where Taylor worked. Plaintiffs appealed.

After examining the record, we agree with the district court's conclusion that Monsanto was a sophisticated user of the defendants' products, and that, on this record, a reasonable jury could not find for the plaintiffs on the fraud and conspiracy claims. We therefore affirm.

I.

Because this is an appeal from a grant of summary judgment, we recite the facts in the light most favorable to the

non-movants, here the appellants. Levesque v. Doocy, 560 F.3d 82, 84 (1st Cir. 2009). In light of the district court's exhaustive account below, see Taylor v. Airco, Inc., 503 F. Supp. 2d 432, 436-42 (D. Mass. 2007), we confine ourselves to the facts necessary for our decision.

Taylor worked for Monsanto from 1953 to 1989, at the Indian Orchard plant in Springfield, Massachusetts. For much of this period, Taylor was employed in the plant's PVC polymerization department. PVC was manufactured at Indian Orchard by combining "vinyl chloride monomer" ("VC"), water, a suspending agent or emulsifier, and a catalyst in a large tank, or "kettle." At various stages of the manufacturing process, small amounts of VC were released into the ambient air of the workspace, thereby exposing Taylor to the chemical. In August 1975, Monsanto closed down its PVC operations at Indian Orchard, and Taylor took a new position in which he was not exposed to VC.

Monsanto acquired the VC it used at Indian Orchard from a variety of sources. In 1952, Monsanto began manufacturing VC at its plant in Texas City, Texas. Monsanto shipped VC manufactured in Texas City by pressurized railcar to Indian Orchard, where it was stored in outdoor tanks until it was processed. Between 1952 and 1969, the Texas City plant supplied most of the VC used at Indian Orchard. However, Monsanto also obtained some amounts of VC from other suppliers as backup. Included among these suppliers was

appellee The Dow Chemical Company ("Dow"). In 1969, Monsanto's Texas City plant shut down, and Dow became the principal supplier of VC to Indian Orchard. Other VC suppliers included appellees Goodrich Corporation ("Goodrich") and Union Carbide Corporation ("Union Carbide").

Many of the dangers associated with VC have long been understood. By the 1960's, the plastics industry knew that VC was highly flammable and that it had anaesthetic effects when inhaled in high concentrations. Early safety warnings issued by the industry reflect this knowledge. The warning principally at issue in this case, "Chemical Safety Data Sheet SD-56" ("SD-56"), was published by an industry trade association, appellee American Chemistry Council ("ACC"), and provided to PVC manufacturers.¹ The first version of SD-56, published in 1954, was sixteen pages in length, and contained information about the scientific properties of VC, as well as proper methods for shipping, unloading, storing, and handling VC. The document also identified fire and explosion as the principal health hazards associated with VC, and stated that other than these hazards, VC "present[ed] no very serious risk in general handling." SD-56 also recommended that workplace "concentration[s] of vinyl chloride . . . be kept below the upper safe limit of 500 ppm [parts per million] at all times." The same

¹ At the time, ACC was known as the Manufacturing Chemists' Association, or "MCA." It subsequently changed its name to Chemical Manufacturers Association, and then ACC.

limit had been adopted in 1946 by the American Conference of Governmental Industrial Hygienists ("ACGIH") as the "Threshold Limit Value" ("TLV").² Monsanto incorporated a 500 ppm exposure limit (as well as other language from SD-56) into the 1965 Indian Orchard "Standard Procedure" manual for PVC polymerization.

In the late 1950's and 1960's, companies in the PVC industry began to learn that exposure to VC was more dangerous than previously believed. We describe these developments in greater detail below, but, broadly speaking, three discoveries were made. First, in 1959, scientists at Dow discovered that chronic exposure to VC in concentrations as low as 100 ppm caused liver injury in laboratory animals. Second, in 1964 appellee Goodrich discovered that a significant number of its PVC kettle cleaners had developed a degenerative hand condition, now known as "acroosteolysis." Third, in late 1969 or early 1970, Italian doctor P. L. Viola discovered cancerous tumors in rats exposed to 30,000 ppm of VC for four hours a day, five days a week, for twelve months.

Despite the discoveries during this period, ACC did not revise SD-56 until 1972. The revised 1972 version of SD-56 warned that "[c]hronic overexposure [to VC] may produce liver injury," and noted the discovery of acroosteolysis among PVC workers. The revised version also stated, "[r]ecent research studies reported

² The 1946 ACGIH TLV was 500 ppm as an eight-hour time-weighted average.

from Italy indicate that repeated, long-term high level exposures of rats to vinyl chloride monomer vapor can cause the development of malignant tumors. However, many years of industrial experience . . . have not demonstrated any carcinogenicity to humans." The 1972 SD-56 maintained a recommended exposure limit of 500 ppm, which it characterized as "well below a level producing any signs or symptoms of toxicity."

In contrast, in 1972 ACGIH revised the TLV from 500 ppm to 200 ppm.³ In February 1973, Dow mailed its customers a copy of the 1972 SD-56 with a sticker affixed to the front. The sticker noted ACGIH's reduction of the TLV to 200 ppm, and stated that Dow maintained an average exposure limit in its own facilities of 50 ppm. In an attached cover letter, Dow recommended that its customers adopt the 50 ppm limit and offered to assist them in reaching it.

On January 23, 1974, appellee Goodrich issued a press release disclosing that three of its PVC workers had died of angiosarcoma, a rare form of liver cancer. The press release stated that Goodrich was investigating whether the deaths were "related to occupational causes." Monsanto immediately informed employees at the Indian Orchard plant. Prior to this time,

³ ACGIH had previously revised the 1946 TLV. Specifically, in May 1963, ACGIH revised the 500 ppm limit from an eight-hour time-weighted average to a ceiling value.

supervisors at Indian Orchard did not know that VC presented a cancer risk to humans.⁴ On April 5, 1974, the United States Occupational Safety and Health Administration ("OSHA") established an emergency temporary VC exposure limit of 50 ppm as a ceiling value. On October 4, 1974, OSHA established a Permissible Exposure Limit ("PEL") of 1 ppm as an eight-hour time-weighted average, and 5 ppm as a ceiling averaged over any period exceeding 15 minutes.

On March 20, 2000, Claude Taylor was diagnosed with intrahepatic cholangiocarcinoma, a form of liver cancer. He died seven months later, on October 30, 2000.

II.

On January 31, 2002, Taylor's surviving wife and sons brought suit against Monsanto, ACC, Dow, Goodrich, Union Carbide, and other VC suppliers and PVC manufacturers, alleging their

⁴ David Gendron, a supervisor at Indian Orchard, stated in his affidavit that:

I did not learn until early 1974 that VC[] was suspected of being carcinogenic in humans or that exposure to the levels of VC[] vapor sometimes present in the PVC buildings [at Indian Orchard] created any serious health risk. . . . In late January or early February 1974, managers at Indian Orchard, me included, learned that several cases of an unusual kind of liver cancer had recently been identified in workers at B.F. Goodrich's PVC polymerization plant in Kentucky.

Bruce Eley, an industrial hygienist at Monsanto, stated in his affidavit: "These announcements [by Goodrich] in January of 1974 were the first indications to Monsanto that VC[] was a potential cause of cancer in humans."

liability for failure to warn, fraud, and civil conspiracy. Subsequently, on February 3, 2005, plaintiffs filed a Second Amended Complaint ("the Complaint") against eighteen defendants.⁵ The Complaint contains ten counts. Counts I-IV and Count X allege failure to warn under various theories against the "Manufacturer/Supplier Defendants," Dow, Goodrich, and Union Carbide. Count V alleges fraud and fraudulent concealment against the Manufacturer/Supplier Defendants. Counts VI-VIII allege failure to warn against Monsanto. Finally, Count IX alleges civil conspiracy against the "Conspiring Defendants," which include ACC, Dow, GenCorp Inc. ("GenCorp"), Goodrich, The Goodyear Tire and Rubber Company ("Goodyear"), Union Carbide, and other named parties.

After various dismissals by the district court, ten defendants remained in the case: ACC; Borden, Inc.; Conoco, Inc.; Dow; GenCorp; Goodrich; Goodyear; Honeywell International, Inc.; Olin Corporation; and Union Carbide. The defendants moved for summary judgment on all remaining counts, arguing, inter alia, that Monsanto was a sophisticated user of their products; that the plaintiffs could not establish that defendants' failure to warn

⁵ The Second Amended Complaint named the following entities as defendants: ACC; Borden, Inc.; Conoco, Inc.; Dow; GenCorp; Goodyear Tire and Rubber Company; Goodrich; Honeywell International, Inc.; Pharmacia Corporation; Pantasote, Inc.; PPG Industries, Inc.; Rhone-Poulenc, Inc.; Shell Oil Company; Tenneco Automotive, Inc.; Union Carbide; Uniroyal, Inc.; Whittaker Corporation; and Zeneca, Inc.

caused Taylor's injury; that Taylor had not relied on their warnings as a matter of law; and that they had no control over, or knowledge of, the conditions in Monsanto's Indian Orchard plant. Plaintiffs opposed the motions.

The district court granted summary judgment for the defendants. After laying out the evidence at length, the court held that there could be no liability for failure to warn because Monsanto was knowledgeable of the risks of VC; in light of Monsanto's size and expertise, defendants reasonably relied on it to provide adequate warnings to Taylor. The court rejected the fraud claim because the record revealed that Taylor had not relied on SD-56, and the record contained no evidence that the Manufacturer/Supplier Defendants were responsible for the particular representations at issue. Finally, the court held that the conspiracy claim failed as a matter of law for lack of an underlying tort, and because the record contained no evidence that the Conspiring Defendants had any control over the conditions at Indian Orchard or knowledge of the information Monsanto provided to its workers.

Plaintiffs timely appealed. They argue that: (1) the district court erred in its determination that the defendants reasonably relied on Monsanto to provide Taylor with warnings; (2) Taylor indirectly relied on SD-56, which the Manufacturer/Supplier Defendants collectively authored as members

of the ACC; and (3) the record contains evidence that the Conspiring Defendants substantially assisted Monsanto in providing it with SD-56, which they knew was widely relied upon in the industry and which Monsanto in fact incorporated into its own safety measures. Appellees dispute these contentions and advance several arguments as alternative grounds for affirming the order of the district court.

III.

We review de novo the district court's grant of summary judgment. Chadwick v. WellPoint, Inc., 561 F.3d 38, 43 (1st Cir. 2009). Summary judgment is granted where "the pleadings, the discovery and disclosure materials on file, and any affidavits show that there is no genuine issue as to any material fact and that the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(c). A genuine issue of fact exists where "'the evidence is such that a reasonable jury could return a verdict for the nonmoving party.'" Chadwick, 561 F.3d at 43 (quoting Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248 (1986)). While we resolve all reasonable inferences in favor of the non-moving party, we "must ignore conclusory allegations, improbable inferences, and unsupported speculation." Am. Steel Erectors, Inc. v. Local Union No. 7, Int'l Ass'n of Bridge, Structural, Ornamental & Reinforcing Iron Workers, 536 F.3d 68, 75 (1st Cir. 2008) (internal quotation marks and citation omitted).

A. Failure to Warn

1. Legal principles

Under Massachusetts law, a supplier has a duty to warn foreseeable users of dangers in the use of its product of which the supplier knows or should have known. Bavuso v. Caterpillar Indus., Inc., 563 N.E.2d 198, 201 (Mass. 1990). However, according to the "sophisticated user" defense, there is no duty to warn an "end user" of a product's latent characteristics or dangers when the user knows or reasonably should know of those dangers.⁶ Carrel v. Nat'l Cord & Braid Corp., 852 N.E.2d 100, 109 (Mass. 2006). The sophisticated user defense is a corollary of the "open and obvious" doctrine, id., under which there is no duty to warn where a danger presented by a product is obvious, Bavuso, 563 N.E.2d at 201. These doctrines apply where the user appreciates the danger to the same extent as a warning would provide. Knowlton v. Deseret Med., Inc., 930 F.2d 116, 120 (1st Cir. 1991) (applying Mass. law). Warning those who already appreciate a danger is superfluous and is

⁶ In the context of the sophisticated user defense, the "end user" is the person whose sophistication is relevant to determining the defense. Where a case involves three parties (such as a supplier, an employer who purchases the product from the supplier, and an employee who foreseeably comes into contact with the product and is injured), the "end user" may be either the intermediate party or the plaintiff. See Carrel, 852 N.E.2d at 109-110 (examining knowledge of intermediary); Barbosa v. Hopper Feeds, Inc., 537 N.E.2d 99, 102 (Mass. 1989) (examining knowledge of plaintiff).

unlikely to have a deterrent effect. Carrel, 852 N.E.2d at 112; Hoffman v. Houghton Chem. Corp., 751 N.E.2d 848, 855 (Mass. 2001).

The Massachusetts Supreme Judicial Court ("SJC") has distinguished the sophisticated user defense from a similar defense known as the "bulk supplier" defense. Hoffman, 751 N.E.2d at 854 (describing them as "separate, conceptually discrete affirmative defenses"); see also Donahue v. Phillips Petroleum Co., 866 F.2d 1008, 1012 (8th Cir. 1989) (applying Mo. law) (similar). The bulk supplier defense says that a supplier may, in some circumstances, discharge its duty to warn foreseeable users of the dangers in the use of its products by reasonably relying on an intermediary. Hoffman, 751 N.E.2d at 854. As the SJC observed, there are several key differences between the bulk supplier and sophisticated user defenses. The bulk supplier defense allows a supplier defendant to satisfy its duty to warn, while the sophisticated user defense relieves the supplier from such a duty. Id. at 854-55; see also Gray v. Badger Mining Corp., 676 N.W.2d 268, 276, 280 (Minn. 2004). The bulk supplier defense presupposes the existence of an intermediary between the supplier and the foreseeable user; the sophisticated user defense "requires no intermediating relationship," although it permits one. Hoffman, 751 N.E.2d at 854; see Carrel, 852 N.E.2d at 109-10 (upholding sophisticated user defense instruction in case with two intermediate parties).

These differences reflect the distinct rationales of the bulk supplier and sophisticated user defenses. As explained above, the latter is premised on the idea that certain dangers are "obvious" to a sophisticated user, making a warning superfluous. See Carrel, 852 N.E.2d at 109, 112. In contrast, the bulk supplier defense is premised on the special difficulties that bulk suppliers face in directly warning foreseeable end users of the dangers of their products. Hoffman, 751 N.E.2d at 856-57. For example, bulk supplies are often transported in "tank trucks, box cars, or large industrial drums," stored in bulk, and then "repackage[d] or reformulate[d]." Id. at 856. This process makes it unlikely that warnings provided by a supplier will reach all foreseeable users. Even if warnings could reach all foreseeable users, the "multitudinous commercial uses" to which bulk supplies are often put would make it "crushingly burdensome" to require the supplier to provide direct warnings. Id. at 856, 857. Massachusetts has therefore chosen to allow suppliers of bulk supplies to satisfy their duty to warn by warning intermediaries where reliance on the intermediaries to transmit the warnings to end users is reasonable.

Appellants argue that "reasonable reliance" is also an element of the sophisticated user defense, at least in cases where an employer acts as an intermediary between the supplier and an employee. They point to language in Carrel stating that the sophisticated user defense is "derived from the Restatement

(Second) of Torts § 388," and suggest that comment n of section 388 requires, in this case, an analysis of whether it was reasonable for Dow, Goodrich, and Union Carbide to rely on Monsanto to warn Taylor. Carrel, 852 N.E.2d at 109 (internal quotation marks and citation omitted). In support of their position, appellants cite both the district court below and courts in other jurisdictions that have considered reasonable reliance when determining whether the sophisticated user defense applies. See, e.g., Smith v. Walter C. Best, Inc., 927 F.2d 736, 739-40 (3d Cir. 1990) (applying Ohio law); Willis v. Raymark Indus., Inc., 905 F.2d 793, 796 (4th Cir. 1990) (applying Va. law); Goodbar v. Whitehead Bros., 591 F. Supp. 552, 557 (W.D. Va. 1984) (applying Va. law). In response, appellees argue that under Massachusetts law, reasonable reliance is not an element of the sophisticated user defense, and that the Supreme Judicial Court rejected this approach when it distinguished the sophisticated user and bulk supplier defenses in Hoffman.

We agree with appellees that reasonable reliance is not an element of the sophisticated user defense as it exists under Massachusetts law. In Hoffman, the SJC compared the defenses side by side, and described only the bulk supplier defense as involving a determination that the supplier reasonably relied on an intermediary to transmit warnings. See Hoffman, 751 N.E.2d at 854. Subsequently, when the court formally adopted the sophisticated user defense in Carrel, it did not mention a reasonable reliance

element. See Carrel, 852 N.E.2d at 109. Nor is reasonable reliance discussed in Massachusetts pattern civil jury instructions. See 1 Patrick Brady et al., Massachusetts Superior Court Civil Practice Jury Instructions § 11.2.4(f) (2008) ("When considering the extent and nature of the manufacturer's duty to warn, the jury should take into account knowledge that the manufacturer had, or could be expected to have, regarding the use of the product as compared to the knowledge and skills of the user.").⁷

Moreover, because the sophisticated user defense may apply even where there is no intermediary between the supplier and the injured party, Hoffman, 751 N.E.2d at 854, there may be no reliance on an intermediary for a court or fact-finder to evaluate. Even where an intermediary exists, as in this case, the rationale of the sophisticated user defense is distinct. The question for purposes of applying the sophisticated user defense is whether the end user appreciated the particular danger because of its sophistication, whatever the source of that sophistication. Whether it would be reasonable for a supplier to rely on that user to transmit a warning is a different question, and the answer to that question may reveal little about what dangers the end user already appreciated because of its sophistication.

⁷ Although pattern instructions are cited by Massachusetts courts, they have not been adopted as binding.

Furthermore, the SJC has made clear its view that comment n to section 388 of the Restatement, from which the factors for assessing reasonable reliance derive, relates specifically to the bulk supplier defense. Hoffman, 751 N.E.2d at 855 ("The bulk supplier doctrine originates in the Restatement (Second) of Torts § 388 comment n (1965)."). The sophisticated user defense also derives from section 388, but from comment k, not comment n. Gray, 676 N.W.2d at 277 n.6. Comment k discusses clause (b) of section 388, which restricts a supplier's duty to warn to cases where it "has no reason to believe that those for whose use the chattel is supplied will realize its dangerous condition." Restatement (Second) Torts § 388(b) (1965) (emphasis added). Clause (b) thus specifically concerns cases where the product user appreciates the danger posed by the product -- the rationale behind the sophisticated user and open and obvious doctrines. See Carrel, 852 N.E.2d at 109. Elaborating on clause (b), comment k provides: "It is not necessary for the supplier to inform those for whose use the chattel is supplied of a condition which a mere casual looking over will disclose [T]he condition, although readily observable, may be one which only persons of special experience would realize to be dangerous." Id. (emphasis added). This language provides that there is no duty to warn where a person "of special experience" appreciates the danger posed by the supplier's product -- the basis of the sophisticated user defense. Gray, 676

N.W.2d at 277 n.6; cf. Slate v. Bethlehem Steel Corp., 496 N.E.2d 449, 647 & n.6 (Mass. App. Ct. 1986) (citing comment k in support of the closely related open and obvious defense); Maldonado v. Thomson Nat. Press Co., 449 N.E.2d 1229, 1231 (Mass. App. Ct. 1983) (same).

The sophisticated user defense has been developed in different ways by different jurisdictions. Some jurisdictions have indeed incorporated a reasonable reliance analysis into the sophisticated user defense. However, under Massachusetts law, the sophisticated user defense does not incorporate a reasonable reliance determination, even in cases where an intermediate party exists between the supplier and the plaintiff. Instead, the existence of the defense turns on whether the end user (either the intermediate party, such as an employer, or the plaintiff) knows, or reasonably should know, of the particular danger to be guarded against in using the supplier's product. See Carrel, 852 N.E.2d at 112; Kenneth M. Willner, Failures to Warn and the Sophisticated User Defense, 74 Va. L. Rev. 579, 592 (1988) (concluding that the "duty approach" to the sophisticated user defense focuses, in a three-party case, on the intermediary's "knowledge . . . to the exclusion of any consideration of the reasonableness of defendants' conduct").

2. Application to this case

a. The district court's reasonable reliance finding

Appellants' principal argument on appeal is that a reasonable jury could conclude that appellees Dow, Goodrich, and Union Carbide did not reasonably rely on Monsanto to provide Taylor with adequate warnings about the dangers of VC. They suggest that appellees' participation in "secrecy agreements" to obtain preliminary results from European cancer studies shows that they knew Monsanto was not providing accurate safety information to its employees. Appellants also point to record evidence that shows that Indian Orchard employees did not know that VC could cause cancer in humans until early 1974, and that controls at Indian Orchard were not designed to protect against the dangers of liver injury or cancer.

As we have explained, "reasonable reliance" is not an element of the sophisticated user defense as it exists in Massachusetts. The district court therefore erred when it stated: "Given that Monsanto was the end user for purposes of the 'sophisticated user' defense, the next question is whether the supplier Defendants were reasonable in relying on Monsanto to provide adequate warnings to Claude Taylor."⁸ Even if the

⁸ In making this statement, the district court appears to have relied on authorities from jurisdictions that -- unlike Massachusetts -- incorporate a reasonable reliance analysis into

appellees did not reasonably rely on Monsanto to provide warnings to Taylor, they are not liable for failure to warn if Monsanto was a sophisticated user of VC. Therefore, appellees were still entitled to summary judgment on the appellants' failure to warn claim if a reasonable jury could only conclude that Monsanto knew, or reasonably should have known, of the dangers posed by appellees' product, VC. See Carrel, 852 N.E.2d at 108 (supporting this formulation). We now examine that question.⁹ In doing so, we cite much of the same evidence cited by the district court in establishing that appellees reasonably relied on Monsanto to provide Taylor with warnings. That evidence is also relevant to Monsanto's knowledge of the dangers posed by VC.

b. End user's knowledge of the danger

The sophisticated user defense applies where the end user knows or reasonably should know of "the particular danger to be guarded against." See id. at 112; see also Koken v. Black & Veatch Constr. Co., 426 F.3d 39, 45-46 (1st Cir. 2005); Gillespie v. Sears, Roebuck & Co., 386 F.3d 21, 29 (1st Cir. 2004). Here, appellants focus on two particular dangers: the danger that chronic exposure to VC at levels of 500 ppm may cause liver injury, and the

the sophisticated user defense. See discussion supra.

⁹ We may affirm an order of dismissal on any basis made apparent from the record. Giragosian v. Ryan, 547 F.3d 59, 64 n.3 (1st Cir. 2008).

danger that exposure to VC may cause cancer. These dangers are distinct. As we will see, the discovery that exposure to VC can cause injury to the liver occurred earlier than the discovery that VC can cause cancer, including liver cancer.

i. Liver injury from VC exposure at 500 ppm

Appellee Dow first learned of the danger of liver injury sometime in 1959, during a study conducted by its scientists Ted Torkelson, F. Oyen, and V. K. Rowe. The Torkelson study exposed rats and rabbits to VC at concentrations of 500 ppm and lower, up to seven hours a day for a period of several months. In May 1959, Rowe wrote W. E. McCormick of Goodrich about the study, which was still ongoing, and suggested that "500 ppm is going to produce a rather appreciable injury when inhaled 7 hours a day, five days a week for an extended period." The Torkelson study was published in October 1961, in the journal of the American Industrial Hygiene Association ("AIHA"). Appellants' expert, James Jones, formerly an industrial hygienist at the National Institute of Occupational Safety and Health ("NIOSH"), described the publication of the Torkelson study as a "seminal event," and stated that "all [PVC manufacturers] would have been aware of it certainly." Jones explained that Monsanto probably knew of the Torkelson study, "even before [it was published], because I think the information was actually shared with the industry a year or two before it was able to be published in print." Indeed, Monsanto had personal contacts

with Torkelson. Dr. Maurice Johnson, then a Monsanto physician, testified that Torkelson personally informed him in 1963 of "updated information regarding the hepatic toxicity" of vinyl chloride.¹⁰

As the district court noted, Monsanto possessed a considerable amount of medical expertise during this period. It maintained an Occupational Medicine Department, whose staff included toxicologists, physicians, and industrial hygienists. The department conducted medical exams and epidemiological studies of the health of Monsanto employees, and cooperated with outside medical researchers from universities and government agencies who were investigating VC toxicity. Several of the individuals who worked in the department held leadership positions in professional associations; for example, Elmer Wheeler, Monsanto's Assistant Director for Industrial Hygiene and Toxicology, served as President of the AIHA from 1959-1960, the period the Torkelson study was being conducted and possibly disseminated to members of the PVC

¹⁰ The record reveals that the Torkelson study touched off a debate about whether chronic exposure to 500 ppm was safe. In 1963, Dr. D. Lester of Yale University published an article criticizing the Torkelson study, and supporting a 500 ppm exposure limit for VC. Meanwhile, in 1962 and 1963, Dr. Herbert Stokinger of ACGIH sought input from Dow scientist Rowe, in an effort to reconcile the results of the Torkelson and Lester studies. After a series of letters, ACGIH sided with Dr. Lester. However, further research conducted in the 1960's by industry scientists and physicians suggested that chronic exposure at levels less than 500 ppm would cause injury. The 1966 ACGIH publication, "Documentation of Threshold Limit Values," discusses some of this research.

industry. Dr. Emmet Kelly, Director of the Occupational Medicine Department, served as Chairman of ACC's Medical Advisory Committee from 1959 to 1961, the year the Torkelson study was published. Members of the department had access to, in the district court's words, "Monsanto's . . . own library of materials on the potential health effects of VC," which it had maintained since the mid-1940's. Bruce Eley, an industrial hygienist who worked at Monsanto, testified that the library contained a "wide variety of medical and scientific journals," including "publications . . . [that] addressed the health hazards, toxicology, [and] safe handling practices of a wide array of compounds, including vinyl chloride."

In light of Monsanto's leading position in the PVC industry, the early communication between industry members about Torkelson's results, the prompt publication of Torkelson's results in a major journal, the personal contacts between Monsanto and Torkelson, Monsanto's maintenance of a library of medical literature on vinyl chloride, and its staff of industrial hygienists, physicians, and toxicologists, a reasonable jury could only conclude that Monsanto either did perceive or reasonably should have perceived the danger that VC was toxic to the liver. There is no basis in the record from which a reasonable jury could conclude that a warning from Dow, Union Carbide, or Goodrich would have enabled Monsanto to better perceive the danger, see Knowlton,

930 F.2d at 120, or that such a warning would have further deterred Monsanto, and caused it to establish a lower VC exposure limit at Indian Orchard, see Hoffman, 751 N.E.2d at 855 ("The sophisticated user doctrine applies where a warning will have little deterrent effect.").

ii. Cancer from VC exposure

The understanding that VC was carcinogenic first began to emerge among members of the PVC industry roughly a decade after the discovery of VC's toxicity to the liver. Sometime in late 1969 or early 1970, Dr. Viola discovered that rats exposed to high levels of VC over a twelve-month period developed cancers of the skin, lungs, and bones. Dr. Viola first presented his findings in May 1970, at the Tenth International Cancer Congress in Houston, Texas. The results were subsequently published in Cancer Research in May 1971.

Members of the PVC industry took immediate notice of Dr. Viola's work. Dr. Viola was invited to meet with ACC's Occupational Health Committee in Washington D.C. on May 5-6, 1971, so members of the committee could "gather more information on his studies." Monsanto's representative on the committee, Dr. Johnson, was absent, but the record establishes that Monsanto would have received the minutes from the meeting because it was a committee member. Those minutes describe Dr. Viola's methods, the results of his research, and his ongoing studies. The minutes also detail

industry research proposals, including both an animal cancer study and an epidemiological study of workers in the PVC industry. On November 16, 1971, Dr. Viola's work and industry research proposals were again discussed by the ACC, at the "Vinyl Chloride Industry Conference." This time, Monsanto's Dr. Johnson was present. ACC also formed special committees to address different aspects of the cancer issue. Dr. Johnson became a member of the "Ad Hoc Planning Group for Vinyl Chloride Research," and Monsanto's Elmer Wheeler became a member of the "Technical Task Group on Toxicology of Vinyl Chloride Monomer Carcinogenicity," as well as other groups.¹¹

As the understanding of the cancer risk grew in the early 1970's, ACC played a central role in communicating current research results and in coordinating industry response efforts. For example, in late 1971, ACC "became aware that additional animal studies at lower exposure levels were being conducted in Europe" by Professor Cesare Maltoni of the University of Bologna. In his affidavit, Bruce Eley stated that Monsanto and the other members of the ACC "desire[d] . . . to learn the results and the study designs of the European animal studies." Members of the ACC were able to secure release of the Maltoni study data by signing a "secrecy agreement," which companies executed individually. Monsanto signed

¹¹ During roughly the same period, the ACC Safety and Fire Protection Committee was preparing an updated version of SD-56. Minutes from meetings held on September 22, 1971, December 14, 1971, and March 7, 1972 reflect the revision and printing of SD-56. Monsanto's G. L. Corbell was present at each of these meetings.

such an agreement on December 1, 1972, promising not to disclose study results outside the company. Subsequently, Monsanto received minutes from a January 17, 1973 meeting between Dr. Maltoni and ACC representatives, as well as minutes from a January 30, 1973 ACC meeting of the Vinyl Chloride Research Coordinators regarding the Maltoni cancer research. On January 16, 1974, Monsanto learned that Dr. Maltoni's team had discovered tumors in rats exposed to VC concentrations as low as 250 ppm, and that Dr. Johnson, now employed by Goodrich, had discovered liver cancer in two PVC workers.

Read in the light most favorable to the appellants, the record shows that Monsanto became aware, at roughly the same time as appellees Dow, Goodrich and Union Carbide, of the carcinogenicity of VC. Principally, Monsanto's representation on the ACC committees that responded to the research of Dr. Viola and Professor Maltoni ensured that it received current information, sometimes before that information became public. Monsanto's occupational medicine department was fully equipped to understand and to act on that information. In the words of the district court, "Monsanto . . . was fully as knowledgeable as . . . any of its subsidiary suppliers, of the risks of VC." Therefore, on this record, a reasonable jury could only conclude that Monsanto knew, or reasonably should have known, of the risk of cancer posed by exposure to VC. See Carrel, 852 N.E.2d at 108. For Dow, Goodrich,

and Union Carbide to have provided Monsanto with warnings -- when all four companies were discovering these risks concurrently -- would have been plainly "superfluous." See id. at 112. Nor could it be reasonably concluded that such a warning would have reduced the likelihood of injury to Taylor, since Monsanto also knew that exposure to VC could cause cancer. See Bavuso, 563 N.E.2d at 202.¹² Appellees Dow, Goodrich and Union Carbide are therefore entitled to summary judgment on Counts I-IV and Count X of the Complaint.¹³

B. Fraud

To establish a claim for fraud under Massachusetts law, a plaintiff must prove that "the defendant 'made a false representation of material fact with knowledge of its falsity for

¹² Appellants also point out, as part of their sophisticated user argument, that appellees sought to remove a recommendation for lowering the VC exposure limit to 50 ppm from a University of Michigan report on acroosteolysis among PVC workers. We do not address a failure to warn claim based on acroosteolysis because appellants do not allege that Taylor suffered from the disease. Moreover, the record clearly establishes that Monsanto was informed of the danger of acroosteolysis soon after it was discovered by appellee Goodrich in 1964. For example, a Monsanto memorandum dated July 9, 1965 discusses the occurrence of acroosteolysis at Goodrich and recommends "quietly review[ing] the physical examination records of our workers in PVC manufacturing."

¹³ In motions below, appellees also argued that they discharged their duty to warn Taylor under the bulk supplier defense. As noted, the bulk supplier defense does incorporate a "reasonable reliance" analysis. However, the district court did not reach the bulk supplier argument, dismissing the failure to warn count on the basis of the sophisticated user defense. We need not address the bulk supplier defense either, since the sophisticated user defense is an independent and adequate basis for dismissing the failure to warn counts.

the purpose of inducing the plaintiff to act thereon, and that the plaintiff reasonably relied upon the representation as true and acted upon it to his damage.'" Russell v. Cooley Dickinson Hosp., Inc., 772 N.E.2d 1054, 1066 (Mass. 2002) (quoting Danca v. Taunton Sav. Bank, 429 N.E.2d 1129, 1133 (Mass. 1982)); Restatement (Second) of Torts § 525 (1977).

In contrast to misrepresentation, nondisclosure generally does not give rise to liability in tort. Wolf v. Prudential-Bache Securities, Inc., 672 N.E.2d 10, 12 (Mass. App. Ct. 1996) ("Nondisclosure does not amount to fraud and is not a conventional tort of any kind." (internal quotation marks and citation omitted)). Liability for nondisclosure exists under Massachusetts law only where there is a duty to disclose. Knapp v. Neptune Towers Assocs., 892 N.E.2d 820, 824 (Mass. App. Ct. 2008); see In re Neurontin Mktg., Sales Practices and Prods. Liab., No. 04-10981, 2009 WL 1464851, at *8 (D. Mass. May 26, 2009); Restatement (Second) of Torts § 551 (1977). Such a duty exists where "(i) there is a fiduciary or other similar relation of trust and confidence, (ii) there are matters known to the speaker that he knows to be necessary to prevent his partial or ambiguous statement of the facts from being misleading, or (iii) the nondisclosed fact is basic to, or goes to the essence of, the transaction.'" Knapp, 892 N.E.2d at 824 (quoting Stolzoff v. Waste Sys. Int'l, Inc., 792 N.E.2d 1031, 1044 (Mass. App. Ct. 2003)); see also Restatement

(Second) of Torts § 551 (1977) (listing five sources of a duty to disclose). Where nondisclosure constitutes a tort, it is also sometimes called "fraudulent concealment," and, following the district court, we will use this terminology here.¹⁴

Here, appellants have advanced claims of both fraud and fraudulent concealment. After significant discovery and development of the parties' claims, the district court characterized the fraud count as "[i]n essence" alleging that the Manufacturer/Supplier Defendants "were responsible for the misleading contents of the MCA's Chemical Safety Data Sheet SD-56, which understated the risks of VC."¹⁵ Appellants do not challenge this characterization, but argue that the court was mistaken in its analysis of whether SD-56 could support a claim for fraud or fraudulent concealment. We therefore confine our attention to SD-56. See United States v. Politano, 522 F.3d 69, 75 n.5 (1st Cir.

¹⁴ We note, for purposes of clarity, that "fraudulent concealment" also refers to the rule that tolls the statute of limitations when a defendant conceals the basis of a cause of action from a plaintiff. See Demoulas v. Demoulas Super Mkts., Inc., 677 N.E.2d 159, 174 (Mass. 1997).

¹⁵ Appellants' fraud claim differs in an important respect from the failure to warn claim discussed above. For purposes of analyzing the sophisticated user defense to the failure to warn claim, Monsanto was the "end user." Therefore, our analysis focused on what Monsanto knew or did not know about the dangers of VC, irrespective of SD-56, and not on the relationship between the Manufacturer/Supplier Defendants and Taylor himself. In contrast, to prevail on the fraud claim, appellants must prove, inter alia, that the appellees were responsible for misrepresentations, contained in SD-56, on which Taylor relied.

2008) (noting that arguments not made on appeal are waived).¹⁶ Notably, we do not reach the question of whether the representations in SD-56 are false or misleading, as appellants allege.

The district court dismissed the fraud count based on SD-56 because (1) the record contained no evidence that any of the Manufacturer/Supplier Defendants were responsible for the allegedly misleading contents of SD-56, and (2) the record contained no evidence that Taylor "ever saw, heard, or read that document," and thus, no evidence that he relied on it. Appellants argue that the district court erred on both accounts. They observe that SD-56 was drafted and approved by ACC subcommittees on which Dow, Goodrich, and Union Carbide were members, and point out that "[a]ppellee ACC published both the 1954 and 1972 versions of SD-56." Appellants also argue that the record contains evidence from which a jury could reasonably conclude that Taylor relied on SD-56, since the document was transcribed word-for-word into the Indian Orchard "Vinyl Chloride Polymerization Standard Procedure" manual, which was used to train Taylor. Appellees counter that the district court was correct to conclude that Taylor did not rely on SD-56.

¹⁶ The record contains a large number of representations made by the Manufacturer/Supplier Defendants concerning the safety of VC. However, appellants did not argue on appeal that these representations supported their fraud claim. It is not the court's responsibility to "ferret out and articulate" the record evidence material to the appellants' claims. Conto v. Concord Hosp., Inc., 265 F.3d 79, 81-82 (1st Cir. 2001).

Even if he did rely, appellees say, his reliance on SD-56 did not proximately cause his injuries.

We agree with the district court that the record contains no evidence from which a reasonable jury could conclude that appellees were responsible for the allegedly false or misleading representations in SD-56. In Massachusetts, a person is generally liable in common-law fraud only for fraudulent representations for which he himself is responsible. See, e.g., Metro. Life Ins. Co. v. Ditmore, 729 F.2d 1, 4 (1st Cir. 1984) (defendant filled out insurance claim form); Mass. Laborers' Health & Welfare Fund v. Philip Morris, Inc., 62 F. Supp. 2d 236, 241-42 (D. Mass. 1999) (defendants issued statements in mass media); Sebago, 18 F. Supp. 2d at 77, 86 (defendant published brochure and mailed it to plaintiffs); Kozdras v. Land/Vest Props., Inc., 413 N.E.2d 1105, 1110 (Mass. 1980) (defendant submitted petition for confirmation and registration of title); Reisman v. KPMG Peat Marwick LLP, 787 N.E.2d 1067, 1067-68 (Mass. App. Ct. 2003) (defendant prepared audit opinion); Evans v. Lorillard Tobacco Co., No. 04-2840A, 2007 WL 796175, at *4 (Mass. Super. Ct. Feb. 7, 2007) (defendants published advertisements). A few exceptions do exist; a person may also be liable for fraud if his agent makes a fraudulent misrepresentation, or if he is part of a partnership that jointly defrauds someone. Madigan v. McCann, 190 N.E.2d 215, 217 (Mass.

1963) (partnership); Reisman, 787 N.E.2d at 1066 (agent).¹⁷ Neither exception has been raised here.¹⁸

The record shows that both the 1954 and 1972 versions of SD-56 were published and copyrighted by ACC, not by Dow, Goodrich, or Union Carbide. However, appellants did not name ACC as a defendant in the fraud count of the Complaint. Thus, the question is whether a reasonable jury could conclude that Dow, Goodrich, or Union Carbide -- who were named in the count -- were also responsible for the safety representations contained in SD-56. As we explain below, we see no basis in the record from which a reasonable jury could come to this conclusion.

Turning first to the 1954 SD-56, evidence in the record shows that it was drafted by one or more members of ACC's General Safety Committee. An October 2, 1953 memorandum written by A. J. Wuertz, Secretary of the General Safety Committee, suggests that "members of the Committee," along with Dow, Firestone, Goodrich, and Goodyear Tire & Rubber Company, were able to suggest revisions

¹⁷ In some jurisdictions, defendants who "participate[]" in defrauding a plaintiff may face (primary) liability for common-law fraud. C.J.S. Fraud § 105 ("[A] person may not be held liable for a fraudulent misrepresentation unless he or she made it himself or herself or authorized another to make it for him or her or in some way participated therein.") (collecting cases).

¹⁸ In the Complaint, appellants refer to ACC as the "agent" of the Manufacturer/Supplier Defendants. However, appellants did not develop or substantiate this assertion, either below or on appeal.

to a preliminary draft of SD-56, and that at least some of these suggested revisions were incorporated. An October 6, 1953 memorandum written by Dr. A. G. Cranch suggests that Union Carbide was also provided an opportunity to comment on a draft.

The record contains similar evidence regarding the authorship of the 1972 version of SD-56. Minutes from September 22 and December 14, 1971 meetings of the ACC Safety and Fire Protection Committee indicate that a draft of the updated SD-56 was then being circulated for review. Representatives from Dow, Goodrich, and Union Carbide attended the meetings. At the September meeting, the committee "discussed problems in finalizing the medical management sections" of SD-56 "since additional research is to be carried out on the chronic effects of the material," but resolved to "proceed with publication . . . and to include only that medical information which is currently available." The final version, which was printed in March 1972, states that it was "[p]ublished as an activity of the [ACC's] Safety and Fire Protection Committee," and lists several other ACC committees "which have cooperated in its preparation."

A reasonable jury could conclude on the basis of this evidence that (1) Dow, Goodrich, and Union Carbide suggested revisions to a draft version of the 1954 SD-56, and (2) that Dow, Goodrich, and Union Carbide were members of the committee that drafted the 1972 SD-56. However, it would be speculative to

conclude that these appellees were responsible for the allegedly false or misleading statements in SD-56. For example, the record does not reveal who is responsible for the statements: "[T]h[e] [500 ppm] level provides a considerable margin of safety for industrial exposures" (in the 1972 SD-56), and "Aside from the risk of fire or explosion, vinyl chloride presents no other very serious problem in general handling" (in the 1954 SD-56). As the district court explained the problem, "[t]he individual contributions [the appellees] made in collecting, organizing, and compiling the contents of SD-56 remain unknown."¹⁹ Appellants have cited no Massachusetts authority, and we know of none, which supports extending common-law fraud liability to defendants whose contribution to allegedly false or misleading statements is essentially "unknown."

We recognize, of course, that the ACC committees that wrote SD-56 included representatives from Dow, Goodrich, and Union Carbide, and that it is possible that someone from one or more of these companies authored portions of SD-56. However, to hold a specific supplier liable, as opposed to ACC itself (under whose auspices SD-56 was written and published), the record must contain

¹⁹ What little is known appears to be unfavorable to the appellants. For example, Bruce Eley, an industrial hygienist who worked at Monsanto, suggested that the 500 ppm exposure limit in the 1954 SD-56 came from the ACGIH: "The 500 ppm maximum allowable concentration (MAC) of vinyl chloride to which SD-56 referred was a recommendation that had been issued in April 1946 by the American Conference of Governmental Industrial Hygienists"

some evidence that connects that supplier to the allegedly fraudulent statements in SD-56, which is a sizable document, containing many representations about VC, its proper handling, and the health hazards it poses. Without such evidence, appellees Dow, Goodrich, and Union Carbide are entitled to summary judgment on Count V.

C. Civil Conspiracy

Massachusetts recognizes two types of civil conspiracy, so-called "true conspiracy" and conspiracy based on section 876 of the Restatement (Second) of Torts. Kurker v. Hill, 689 N.E.2d 833, 836 (Mass. App. Ct. 1998); see also Grant v. John Hancock Mut. Life Ins. Co., 183 F. Supp. 2d 344, 362-63 (D. Mass. 2002). The second type of conspiracy, based on section 876 of the Restatement, is a form of vicarious liability for the tortious conduct of others.²⁰

²⁰ There is some question about the extent to which Massachusetts recognizes the principles of conspiracy laid out in section 876. The Massachusetts Supreme Judicial Court has previously cited and applied section 876. See Nelson v. Nason, 177 N.E.2d 887, 888 (Mass. 1961). However, the court has not expressly adopted section 876, Kurker, 689 N.E.2d at 837, and, in Kyte v. Philip Morris Inc., it declined to "determine whether the principles of § 876 and the law of the Commonwealth are, in all respects, in complete accord," 556 N.E.2d 1025, 1027 (Mass. 1990). Nonetheless, Massachusetts courts have repeatedly invoked section 876 or principles similar to it. See, e.g., Kurker, 689 N.E.2d at 836; Stock v. Fife, 430 N.E.2d 845, 849 n.10 (Mass. App. Ct. 1982); see also Orszulak v. Bujnevicie, 243 N.E.2d 897, 898 (Mass. 1969) ("Persons who race automobiles on a public way are liable in negligence for injuries caused by one of them."); Gurney v. Tenney, 84 N.E. 428, 430 (Mass. 1908) (similar to section 876(a)); Brown v. Perkins, 83 Mass. (1 Allen) 89, 98 (1861) (similar to section 876(b)). We have also previously recognized the use of section 876

See Mass. Laborers', 62 F. Supp. 2d at 244; Restatement (Second) of Torts § 876 (1979). Because it is vicarious liability, this type of civil conspiracy requires an underlying tort. Mass. Laborers', 62 F. Supp. 2d at 244. The conspiracy consists in agreeing to, or assisting in, this underlying tort. Massachusetts courts have recognized two theories of liability under section 876: (1) "concert of action," and (2) "substantial assistance" or "aiding and abetting." See Maruho Co., Ltd. v. Miles, Inc., 13 F.3d 6, 9 (1st Cir. 1993); Payton v. Abbott Labs, 512 F. Supp. 1031, 1035 (D. Mass. 1981).

Here, appellants advance a "substantial assistance" theory. Under the substantial assistance theory, a defendant is liable for the conduct of another if he "knows that the other's conduct constitutes a breach of duty and gives substantial assistance or encouragement to the other so to conduct himself." Restatement (Second) of Torts § 876(b), quoted in Kurker, 689 N.E.2d at 837. To recover under this theory, the plaintiff must establish two elements. First, the defendant must give "substantial assistance or encouragement" to a party engaging in tortious conduct. Payton, 512 F. Supp. at 1035; Haemonetics Corp. v. Dupre, 238 B.R. 224, 228 (D. Mass. 1999). Only assistance or encouragement that is a "substantial factor in causing the

by Massachusetts courts. See, e.g., Santiago v. Sherwin Williams Co., 3 F.3d 546, 551-52 (1st Cir. 1993).

resulting tort" exposes the actor to liability. Restatement (Second) of Torts § 876 cmt. d; see also Wilson v. DiCaprio, 717 N.Y.S.2d 174, 175 (N.Y. App. Div. 2000). To determine whether this threshold is met, courts should consider "the nature of the act encouraged, the amount of assistance given by the defendant, his presence or absence at the time of the tort, his relation to the other and his state of mind." Restatement (Second) of Torts § 876 cmt. d, quoted in Payton, 512 F. Supp. at 1035. Second, the defendant must possess an "unlawful intent." Payton, 512 F. Supp. at 1035. Unlawful intent comprises two distinct mental states: knowledge that the other's conduct is tortious, and an intent to substantially assist or encourage that conduct.²¹ Id.; Lucas v. Allen, 1997 Mass. App. Div. 9, 9 (Mass. Dist. Ct. 1997); Smith v. Egan, No. 94-3909-E, 1996 Mass. Super. LEXIS 446, at *24 (Mass. Super. Ct. May 17, 1996); see Kyte, 556 N.E.2d at 1028 (citing Halberstam v. Welch, 705 F.2d 472, 478 (D.C. Cir. 1983)); Kurker, 689 N.E.2d at 837. Unlawful intent does not require an agreement

²¹ While "intent" is notoriously a potentially confusing term that may conflate the distinction between knowledge and purpose, United States v. Boidi, 568 F.3d 24, 30 (1st Cir. 2009), Massachusetts aiding and abetting liability generally requires that a defendant share the mental state of the principal violator, see Planned Parenthood League of Mass., Inc. v. Blake, 631 N.E.2d 985, 993 (Mass. 1994); Beaupre v. Cliff Smith & Assocs., 738 N.E.2d 753, 767 n.23 (Mass. App. Ct. 2000). Here, the alleged underlying tort of fraud requires a purpose to induce the plaintiff's action upon a false statement, see Russell, 772 N.E.2d at 1066, so the "Conspiring Defendants" (those named in the conspiracy count) would share Monsanto's alleged intent only if they shared Monsanto's alleged objective to defraud Monsanto's employees.

between the defendant and the tortfeasor. Payton, 512 F. Supp. at 1035 (citing Brown, 83 Mass. (1 Allen) at 97-98).

The underlying tort on which appellants base their substantial assistance claim is fraud by Monsanto. Appellants argue that Monsanto defrauded Taylor by providing him with the allegedly fraudulent safety information in SD-56. They allege that the Conspiring Defendants substantially assisted Monsanto in committing this fraud, by, for example, entering into secrecy agreements not to divulge the results of the Maltoni cancer study. See supra discussion in section III(B)(2)(b)(ii). The district court rejected this argument because it concluded, among other things, that there was no evidence that the Conspiring Defendants knew what information Monsanto disseminated to its employees. Appellants argue that the district court erred, and that the record establishes that the Conspiring Defendants knew that Monsanto provided its employees with the safety information in SD-56. Appellees disagree.

We agree with the district court that, on this record, a reasonable jury could not conclude that the Conspiring Defendants substantially assisted Monsanto in defrauding Taylor. While the record contains evidence that the Conspiring Defendants's actions did in fact assist Monsanto,²² it contains no evidence from which

²² The record contains evidence supporting the conclusion that at least some of the appellees assisted in providing allegedly

a reasonable jury could conclude that the appellees had the "unlawful intent" necessary for substantial assistance liability. An actor has unlawful intent when he knows that another's conduct is tortious and intends to substantially assist or encourage that conduct. Payton, 512 F. Supp at 1035. While it is clear from the record that SD-56 was widely used in the PVC industry, there is no support for the conclusion that appellees knew Monsanto was incorporating representations from SD-56 into its own Standard Procedure manual. There is no evidence that Monsanto discussed its safety practices with appellees or granted them access to its plants. See Kyte, 556 N.E.2d at 1028 (rejecting a claim of civil conspiracy for manufacturing cigarettes sold to convenience stores who sold them to minors because "[a] general awareness that retail stores sell cigarettes to minors is not sufficient to show the level of knowledge that would give rise to liability for conspiracy"). Moreover, the record shows that Monsanto drew on a number of sources for safety information; one could not reasonably infer from the fact that Monsanto was using SD-56 the conclusion

fraudulent information, which Monsanto supplied to Taylor. ACC authored SD-56 and distributed it with several appellees. Companies appeared to use SD-56 to understand the hazards of working with VC and to establish industrial hygiene practices. In his affidavit, Monsanto industrial hygienist Eley described SD-56 as being "widely relied upon" in the PVC industry. He further testified in deposition, "It's always been my understanding in talking with my counterparts . . . that the series of data sheets published by [ACC] were in fact widely distributed and widely used."

that it was repeating SD-56, word-for-word, to its employees. Therefore, it would be speculative to conclude that appellees knew that Monsanto was defrauding Taylor by providing him with false information about the hazards of VC.²³

One final comment. An illustration provided in the Restatement section 876(b) suggests that a defendant who specifically advises another party to commit conduct constituting a particular tort may be subject to liability under a substantial assistance theory even if he is unaware of whether the tort was accomplished. See Restatement (Second) of Torts § 876 cmt. d & illus. 5. There is some indication that Massachusetts does not accept this wrinkle, see Kyte, 556 N.E.2d at 1028, and we cannot in the context of a diversity case expand the tort law of Massachusetts beyond its present state, see Phoung Luc v. Wyndham Mgmt. Corp., 496 F.3d 86, 90 n.5 (1st Cir. 2007). Independently,

²³ The question of whether the Conspiring Defendants shared in any intent that Monsanto employees be defrauded is a closer one and might have comprised an issue for the jury to determine, if it were not otherwise clear from the record that the Conspiring Defendants lacked knowledge of Monsanto's alleged fraud and therefore lacked unlawful intent. The 1954 version of SD-56 states that "[e]mployee education and training should emphasize the need of handling vinyl chloride according to the methods outlined in this data sheet." The 1972 version of SD-56 contained similar language. Still, this is not clear-cut evidence that the Conspiring Defendants intended for Taylor or other employees to rely on claims that the 500 ppm standard was safe, as opposed to intending for employees to follow safety procedures laid out in SD-56.

it is enough to note that this argument was never made in the appellants' briefs, so it is unnecessary to reach it here.

IV.

For the reasons stated above, we affirm the order of the district court.