

# Underwriting Nanotechnology Risk, It's *Not* ". . . the Next Asbestos"

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by

Ronald R. Robinson, Esq.  
*Berkes Crane Robinson & Seal LLP*  
*Los Angeles, California 90071*  
*[www.bcrslaw.com](http://www.bcrslaw.com)*

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# Nanotechnology is Precision Reordering of Sub-Atomic Chemical Reactions

- “Building machines on the scale of molecules – motors, robot arms, even computers far smaller than a cell;”  
K. Eric Dexter, 1980
- 25,000 “nanobits” fit *on the end* of a human hair
- Mimics the properties and reactions of chemical enzymes
- Produces bio-active and/or physical-chemical operations and products
- Permeates industrial, commercial and consumer markets; will be usable in all aspects of society
- Operation and product based uses will increase exponentially over the next two decades

# The Evolution of Nanotechnology Risk Over the Next Two Decades

- TODAY: Passive Single Task Nanostructures  
Aerosols, coatings, reinforced composites;  
Strengthened metals, polymers and ceramics
- TOMORROW: Active Nanostructures  
Health Care -- drug target systems/sensors;  
Electronics -- transistors, amplifiers and actuators
- SOON: Nanosystems  
Thousands of interacting motors, robotics and  
computers acting as operations and products
- TOO SOON: Molecular Nanosystems  
Integrated nanosystems functioning like mammalian  
cells; self-replicating systems within systems

# Underwriting Unknown Risk the Last Time; Covering Product Liability

- Drafting products hazard coverage, 1941 to 1966, a cautionary tale of how *not* to underwrite unknown risks
- The industry entered a new coverage market *without*
  - ✓ Understanding the “science” of most of the products or operations that, over time, presented continuous injury and damage claims
  - ✓ Addressing or Resolving trigger, allocation, policy limits or pollution risk issues
  - ✓ Reaching industry wide consensus on scope of coverage

# Who Were The Drafters of the 1941/1966 CGL Products Policies?

- Insurance trade associations formed in the 1920s provided industry-wide underwriting and premium rating platforms
- Stock companies formed the National Bureau of Casualty and Surety Underwriters ("NBCU")
- Mutual companies formed the Mutual Insurance Rating Bureau ("MIRB")
- NBCU and MIRB became the Insurance Rating Bureau (1970) and then the Insurance Services Offices (1973)

# How Was Drafting of the 1941/1966 CGLs Accomplished and Recorded?

- Joint NBCU/MIRB Underwriting, Rating and Drafting Committees
- Main drafting players: *George Katz* (NBCU-Aetna); *Richard Schmaltz* (MIRB-Liberty Mutual); and *Norman Nachman* (NBCU General Liability VP)
- Joint Ad Hoc Dispute Resolution Committees; *Herbert Schoen* (The Hartford)
- 200,000 pages of fragmented private/internal notes, memos and meeting minutes; public commentaries
- The *"Drafting History"* of Underwriting Intent for 1941/1966 CGL Policies

# The Starting Point: Accident's "Causal Trigger" -- 1900 to 1966

- "An accident [is generally] regarded as *one specific, sudden rather dramatic event* that immediately results in some injury, usually a *very obvious* one."
- "If an accident actually caused an injury, a single injury that *did not become manifest until later*, there would be coverage [under pre-1966 policies]..."
- Accident triggers: Boom and – Delayed Boom
- "[But these options] really did not address ... what we would call continuous or repeated exposure cases."

*Flintkote*, Depo. of Schmaltz of Dec. 7, 1990, p. 102:15-25.

# The Shift of the Accident Trigger from "Cause" to "Result"

- Trigger's evolution: Boom – Delayed Boom – Results
- "All bodily injury or property damage which *results* from continuous or repeated exposure to the same cause is an accident."
- "Such accident shall be *deemed to have occurred* on the date *when the exposure culminates in injury or damage for which claim is made.*"

Ex. 961, p.1, emphasis added JSCS (1959)



# The Shift From an Accident “Causative Trigger” to an Occurrence “Resulting Trigger”

“ ‘occurrence’ means an *accident, including injurious exposure to conditions, which results* during the policy period in bodily injury or property damage . . . .”

\* \* \*

“... in most cases injury would clearly be simultaneous with impact (or the ‘accident’ or ‘exposure’)”

“...[but,] by requiring that injury *actually result* we would tend to shift long term exposure cases, such as cancer from cigarette smoking, or from radiation, to the policy where some *demonstrable injury became evident.*”

# The Underwriting Intent for the 1966 CGL "Occurrence Trigger"

"While it is recognized that the time trigger, '*exposure . . . which results, during the policy period, in . . . injury,*' is no panacea, on balance it seems to come closest in words to the underwriter's intent."

Ex. 992, Exhibit A, pp. 1-2, emphasis added; JDC and Schoen (1964)

"All bodily injury or property damage which *results* from continuous or repeated exposure to the same cause is an accident."

"Such accident shall be *deemed to have occurred* on the date *when the exposure culminates in injury or damage for which claim is made.*"

Ex. 961, p.1, emphasis added JSCS (1959)

# The Road Not Taken to Address the Unknown Risk

“ . . . if the insurer . . . can show that harmful exposures had *previously resulted in some of the injury* [in a prior policy period], *it can seek and obtain a proration.* ”

Katz, Schmaltz and Schoen Memo (1964); Ex. 992, Exhibit A, p. 3

“ [I]n most cases, the injury will be *simultaneous with the exposure*. However, in some other cases, injuries will take place over a long period of time *before they become manifest* . . . . [I]n exposure-type cases, cases involving cumulative injuries, *more than one policy contract may come into play* . . . . ”

Ex. 998, pp. 2-3, emphasis added; Nachman 1966.

# The Road Not Taken to Address the Unknown Risk II

“. . . the Claims Department will have to make some sort of reasonable allocation to each [policy]. *There is no pro-ration formula in the policy, as it seemed impossible to develop a formula which would handle every possible situation with complete equity.*”

Schmaltz Article (1965); Ex. 1086 at p.6

***What actually resulted:***

***Underwriting intent was applied generally – not specifically – to the scope of coverage standard provisions in the 1966 policy***

# Underwriting Nanotechnology Risks; It's *Not* ". . . the Next Asbestos"

- What if, in the 1960s, NBCU/MIRB had underwritten specifically for asbestos long tail losses
  - ✓ Understanding the science -- causes and processes -- of continuous asbestos injury and damage; and
  - ✓ Specifically addressing the trigger, allocation, policy limits and pollution issues of asbestos injury and damage claims
- What if, in 1985, and understanding the science, ISO wrote an "asbestos" vs. an "asbestosis" exclusion
- Today: we don't understand nanotechnology's toxicity, malicious uses or scope of damage to life and property
- Today: we know nanotech entities are indestructible and self-generating in bio-chemical and inert environments

# Specific Peril Endorsements; A Proven Underwriting Model for Unknown Risk

- Nanotechnology endorsements to existing CGL, personal injury, advertising injury, D&O and E&O coverage
- Drafting process inclusive of perspectives and *expertise of the insurance, reinsurance and scientific communities*
- Informed specific peril language for trigger, defense, indemnity, and scope of coverage clauses
- Aggregate total policy limits – products/operations – based on capacity to underwrite an unknown risk
- Setting an agenda to lead the industry to a consensus on a specific peril approach to the transfer of this risk; antitrust issues can be addressed and resolved

# Underwriting Nanotechnology Risk; It's *Not* ". . . the Next Asbestos"

## Your Questions

Based in part on the paper entitled:

*"The Best of Intentions, Drafting the 1966 Occurrence and  
1973 Pollution Exclusion Policy Language."*

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