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Date
29 August 2005

The Secretary
Senate Community Affairs References Committee
Parliament House
Canberra ACT 2600

returned with thanks ✓ for your information please return for further action

Dear Sir or Madam:

Inquiry into workplace exposure to toxic dust

Please find attached a recent publication from our Group Head office in Munich. The publication has an article on pages 16 – 21 on Silicosis and this may be of interest to the Committee during its inquiry into workplace exposure to toxic dust.

The Munich Re Group is one of the leading reinsurance companies worldwide and consequently commits substantial resources to researching potential new causes of losses and loss prevention.

The attached publication "Schadenspiegel" is in its 48th year of publication and is highly regarded both inside and outside the financial industry.

Should you require additional copies please contact me.

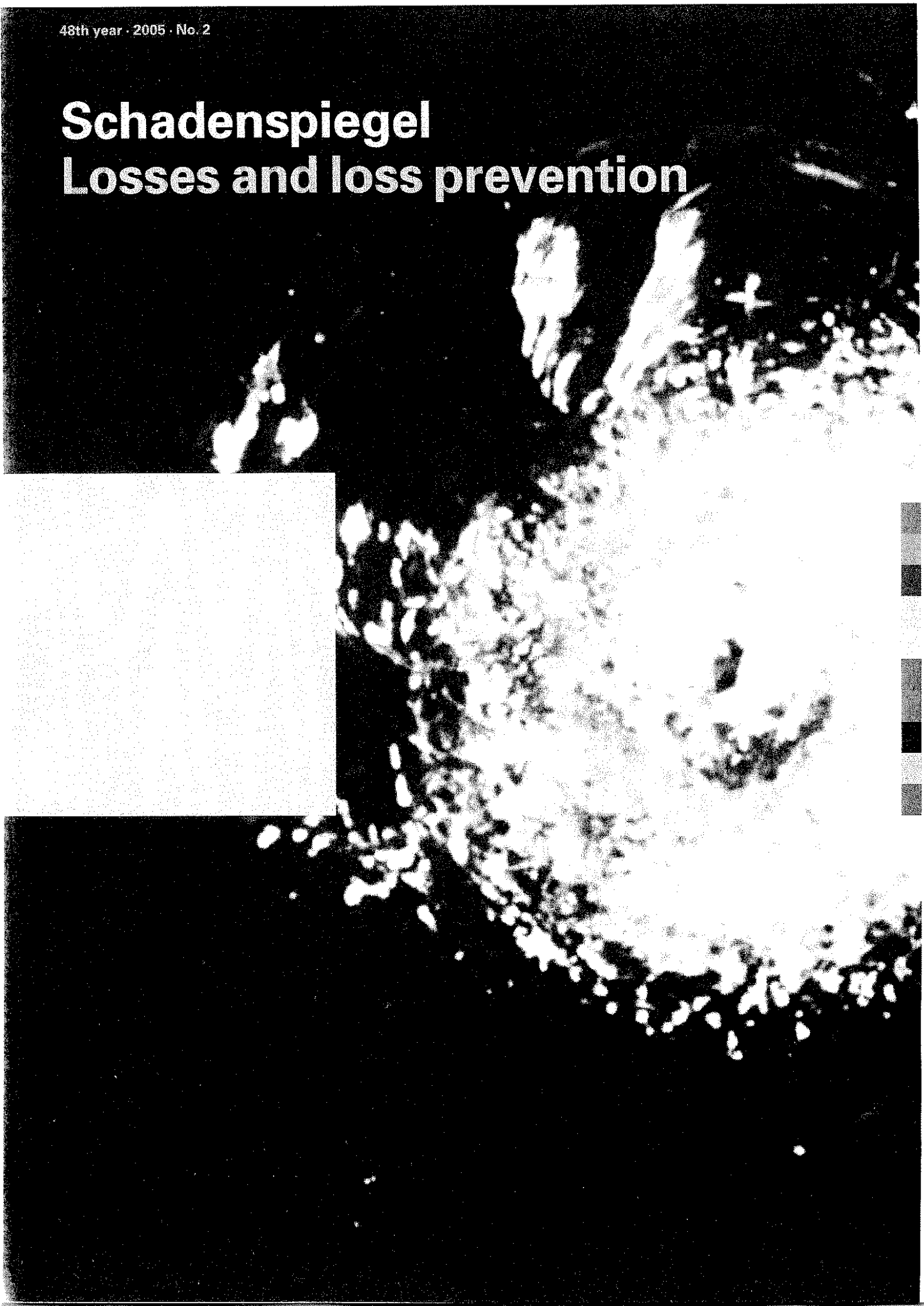
Yours sincerely

David Sargeant
Education and Communications Manager

document5

48th year · 2005 · No. 2

Schadenspiegel
Losses and loss prevention

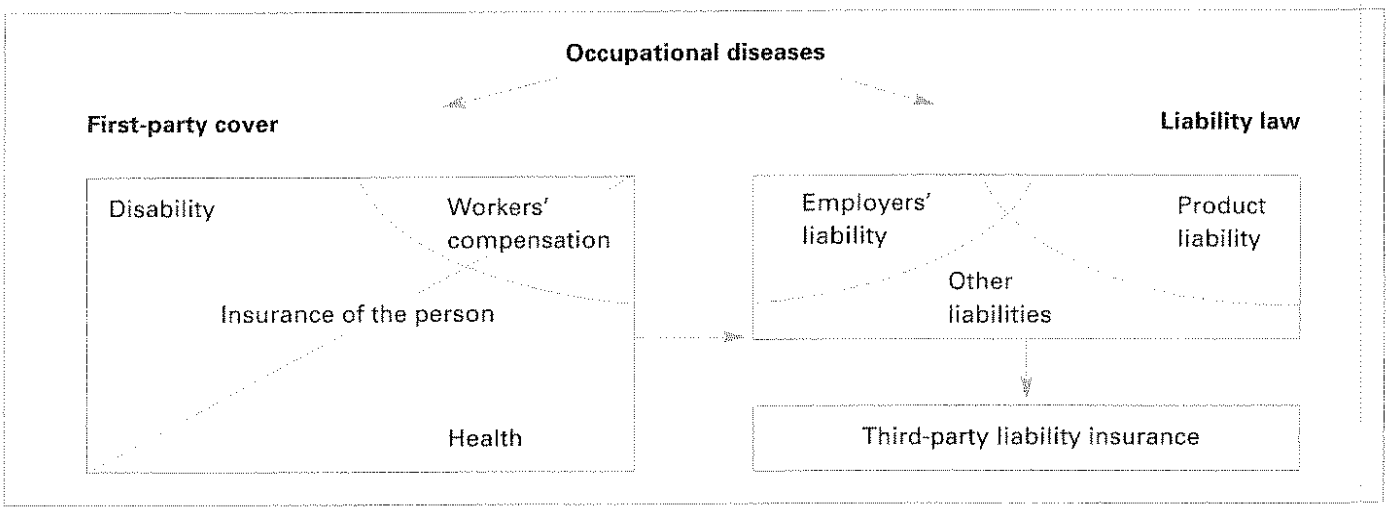


Occupational disease risks

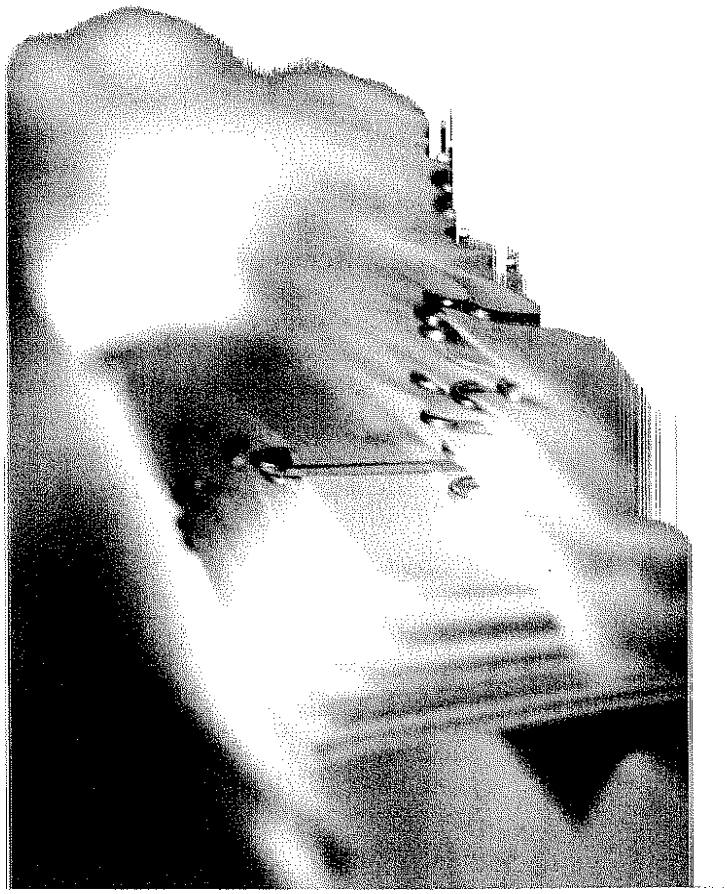
Old occupational diseases as new risks in liability insurance

Dust disease or silicosis has been known for centuries, yet today, at the beginning of the 21st century, it is considered an "emerging risk" in the US. Food for thought: what is "new" here, and for whom? We cannot simply refer to an old or new health risk without specifying exactly what insurance is involved (disability, health, workers' compensation) and whether it relates to liabilities or liability insurance. The occupational health hazards discussed in the following two articles affect workers in the mining, quarrying, construction and metalworking industries throughout the world. Such risks are covered by the insurance markets in different ways (Fig. 01).

First-party insurance cover through disability, health and workers' compensation insurance (social security or private insurance) covers worldwide occupational diseases but in different ways: sometimes by non-specific systems, such as health and disability insurance in the Netherlands regardless of whether the disease is related to employment or not. In the majority of countries, however, specific workers' compensation systems cover occupational diseases to varying extents.



01 The international insurance markets cover the risk of occupational disease in different ways.



02 Exposure to silica and manganese: The number of court cases has risen significantly over the past few years.

In addition to impacting first-party insurance, occupational diseases also create liabilities and affect liability insurance, such as the product liability of manufacturers of hazardous materials. Another aspect that varies from one country to the next is how far negligent employers are liable for their employees' occupational diseases (instead of or in addition to the workers' compensation or general social security systems). Such liabilities exist in the majority of countries, with the exception of Germany, Belgium and Austria in Europe, the USA, Canada and Mexico, as well as the Philippines in Asia and since 1996 Argentina in South America.

The next two articles specifically refer to the US insurance market, where occupational disease is subject to specific, historically evolved mechanisms. As with Germany in 1884, employers' liability in the USA has been replaced by a first-party workers' compensation system. This was done in connection with occupational accidents at the start of last century. As far as occupational disease was concerned, however, liability initially remained with the employers.

In 1930, one million workers were exposed to the risk of silicosis in the USA. Only in six states were benefits for these workers provided under the workers' compensation insurance laws. In 1933, the sums claimed under employers' liability on account of silicosis (including undetected cases of asbestos-related illness) amounted to US$ 100m; in 1934, that figure tripled to US$ 300m. Employers considered the trend to be a product of economic conditions and referred to it as "depression disease". Between 1930 and 1932, a tunnel almost four miles long was driven at Hawks Nest, West Virginia for a hydroelectric power plant operated by Union Carbide & Carbon Company. A total of 2,000 Americans (mostly blacks) worked on the project, using modern pneumatic percussion drills. The state mining authority had recommended wet drilling on account of the dust generated, but this was not done. A quarter of the workers has died at the end of the project and three-quarters were incurably sick. A headline in the People's Press, Chicago, in December 1935 read: "476 dead, 1,500 doomed, in West Virginia tunnel catastrophe".

As a result, occupational diseases were included in the workers' compensation catalogue of benefits. The remaining employers' liability for occupational disease was eliminated – in some states, as in Ohio, explicitly regardless of the duty to compensate under the workers' compensation system ("... whether or not compensable under the act").

Compensation of occupational diseases continued to be a problem due to the low benefits paid under workers' compensation and the short periods specified under the statute of limitations. This explains the importance of product liability for occupational diseases in the USA – especially in conjunction with asbestos – and provides the historical background to the present debate over liability in relation to silicosis and other occupation-related diseases.

Christian Lahnstein, Munich

Occupational disease risks

Silicosis – A new claims complex in liability insurance?

US insurers have for some time been observing an increase in silica-related claims. Around 70,000 claims have been filed against US firms in recent years. What makes silicosis (dust disease) stand out from other topical subjects, such as electromagnetic fields and mould, is that the relationship between the illness and well-defined medical symptoms has been clearly and scientifically established. However, in view of the parallels between silicosis and the lung disease asbestosis, insurers, plaintiffs' lawyers and the press are asking whether this could be a new "asbestos-style" claims complex.

Relatively little is known at present about silica as an insurance issue. It is by no means clear whether the inferences drawn in connection with asbestos – while certainly valid given the similarities between the two lung diseases – will hold true in the future. All concerned appear to agree, however, that the insurance industry's exposure to silicosis cannot be compared with its asbestos exposure.[1]

Dust disease

Silicosis is one of the oldest occupational diseases known to mankind. Its history is directly related to the emergence of rock and coal mining. An ancient Egyptian papyrus referred to silicosis as stone-cutters' lung; it was also known to the Greek physician Hippocrates in antiquity. The Swiss physician Paracelsus reported in detail on "Miners' phthisis and other miners' diseases" in the 16th century. Today, silicosis primarily affects workers in the sandblasting, quarrying, mining and construction industries.

Silicosis – An airborne hazard

Every cubic metre of air contains millions of dust particles. Silicosis can develop when fine dust containing crystalline silica (silicid acid) is inhaled and accumulates in the lungs. A basic component of sand, sandstone and granite, silica is ubiquitous. Only the crystalline form, however, poses a threat to human health. When inhaled, the fine dust (silicogenic dust) settles in the alveoli.

[1] The insurance industry's exposure is probably greatest in the industrialised countries, but it must be remembered that silicosis occurs worldwide. In Vietnam, for instance, it accounts for 90% of all compensated occupational diseases. More than 500,000 cases of silicosis were recorded in China between 1991 and 1995, with 6,000 new cases and 24,000 deaths annually.

01 Silicogenic dust – Particularly workers in the quarrying, mining and construction industries are exposed to the risk of damage to health.

02 Rock drilling workers are exposed to the dust almost daily.

Over-exposure for many years can lead to the formation of fibrotic nodules and scar tissue in the lungs, destroying the special breathing tissue and replacing it with connective tissue. The lung's ability to extract oxygen from the air is reduced.

There are three distinct forms of silicosis:

– Chronic silicosis
This form can develop when silicogenic dust is inhaled in low concentrations over a period of more than ten years.

– Accelerated silicosis
This form can arise when someone has been exposed to highly concentrated silica for a period of between four and nine years.

– Acute silicosis
Acute silicosis can occur when large and extremely concentrated quantities of crystalline silica enter the lungs within a short space of time. The symptoms of this form of the disease can develop within a few weeks.

Recent studies indicate that a causal connection exists between exposure to silicogenic dust and a higher incidence of chronic obstructive pulmonary disease (COPD), tuberculosis, lung cancer, emphysema, lupus, scleroderma and rheumatoid arthritis.

There is no treatment for silicosis. Once contracted, only minor pulmonary changes can be brought to a halt; in severe cases, the change in tissue continues inexorably. The disease can even break out several years after exposure to the dust has ended. The latency period is between ten and 40 years.

Silicosis can only be prevented by appropriate precautionary measures, such as protective clothing and respiratory protection.

Health impairment and litigation in the USA
Workers in the mining, quarrying and construction industries are most likely to suffer health impairment. They are exposed to the dust almost daily. Plaintiffs also include workers engaged in blasting, rock drilling and sandblasting. According to the US governmental agency OSHA (Occupational Safety and Health Administration), the following industries are most heavily exposed to litigation:

– Construction and road building
– Mining
– Iron and steel
– Abrasives production

The plaintiffs
Since the physical injuries caused by silicosis resemble those of asbestosis, plaintiffs' lawyers in the USA are using the same litigation techniques as were originally developed in the asbestos arena. The same law firms that

led the asbestos litigation are now playing a vanguard role in silicosis litigation. They organise mass X-ray screenings of potentially exposed workers, consulting the same doctors as for asbestosis and asking them to compile reports on silicosis. There are indications that previous asbestos cases are being re-opened and relabelled as silicosis cases. Liability in particular will play an important part in the litigation. In addition to seeking remuneration under workers' compensation, it is anticipated that plaintiffs will attempt to circumvent workers' compensation. This would mean placing the blame squarely on the employers' shoulders by charging them with negligently harming their employees by deliberately exposing them to a known and serious danger. With precisely this argumentation, liability was shifted from the workers' compensation system to the general liability arena in asbestos litigation. Juries consequently awarded much higher sums, as liability also allows for pain and suffering as well as punitive damages.

It may also be assumed that plaintiffs will not only bring action against employers, but also against other groups. An estimated 25,000 silica-related claims are pending against US Silica Company, the leading US producer of silica sand; the energy and oil corporation Halliburton has reported 21,000 pending claims. 3M, which mainly produces industrial and household articles, currently faces more than 54,000 claimants alleging that 3M's respiratory equipment was inadequate. Settlements have averaged around US$ 1,000 to date, but these amounts are expected to increase substantially. In fact, 3M has increased its reserves for claims by US$ 100m to US$ 231m.

The defendants

The suppliers of products containing silica can assert the so-called sophisticated purchaser/user defence, according to which it is argued that large industrial employers know of the health hazards presented by silica and should have taken appropriate protective measures. If the plaintiffs were to address their claims to bulk suppliers, the latter can assert that they have drawn attention to the danger on their packaging in recent decades and that, as bulk suppliers, they are not obliged to warn individuals directly or to advise their customers to pass the warnings on to their employees.

Employers could also use compliance with OSHA standards as a defence. However, they could be held liable if the plaintiffs were to prove that the concentrations of crystalline silica defined by OSHA to prevent health impairment are inadequate and that the employers were aware of this fact but chose to ignore it.

Where silica exposure is being blamed for other conditions, there is almost always another factor at work as well. It will usually be smoking, which invariably raises the question of the plaintiff's contribution to the development of the condition. This could substantially reduce the size of any award.

Comparison of lung diseases

- Both silicosis and asbestosis are caused by the inhalation and accumulation of dust containing silica or asbestos. The first symptoms may not appear for between ten and 40 years.

- In both cases, there is an enormous pool of potential plaintiffs and this litigation is extremely lucrative for US attorneys.

- Although millions of people may be or have been exposed to crystalline silica, the chances of silicosis developing and killing someone are lower than in the case of asbestos.

- While the number of silicosis claims is rising strongly, the number of deaths from silicosis is declining steadily. Asbestos deaths are still increasing.

- Silicosis has been included in the list of occupational diseases since 1929. Unlike the case with asbestos, OSHA has – in conjunction with the handling of crystalline silica – demanded increased workplace safeguards and warnings on packaging since the early 1970s. The steady decrease in annual deaths attributable to silicosis shows that these measures have been implemented effectively.

Aspects for the insurance industry

Future trends in US jurisdiction will play a key part in determining the order of magnitude of silicosis as a claims complex for the insurance industry. It is difficult at present to judge whether the number of plaintiffs will continue to increase or whether the trend in recent years was merely a temporary phenomenon triggered by fears of impending tort reform among the plaintiffs' lawyers. The size of any future awards for pain and suffering as well as punitive damages will also decide how much is spent on the subject of silicosis.

The ruling in the case Campbell versus State Farm Mutual Automobile Insurance Co. indicates a trend towards awarding lower punitive damages. The case involved a private motor loss in Utah. The US Supreme Court reduced the punitive damages from US$ 145m to US$ 25m. However, there have also been a number of more troubling recent court rulings:

- In the case of Tompkins versus US Silica Company, which was upheld on appeal, the plaintiff was awarded US$ 7.6m. The court ruled that Tompkins, a sandblaster, had contracted silicosis by inhaling silicogenic dust.

- In the case of Gomez versus Humble Sand & Gravel Inc., the plaintiff was awarded US$ 1.9m because his asymptomatic silicosis had reduced his life expectancy by 20 to 25 years. The award was upheld on appeal and is subject to review by the Texas Supreme Court.

- In the case of Altvater versus Claycraft Company, a deceased employee's widow was awarded US$ 1.3m following her husband's death from obstructive pulmonary disease caused by occupational exposure to crystalline silica in a brick factory for 40 years.

The interplay between product and general liability vis-a-vis the worker's compensation system will also play a key role. If the litigation remains limited to workers' compensation, then the insurance industry's financial exposure should in all probability also remain limited.

However, if strict liability were to be introduced as the standard, as in the case of asbestos, then plaintiffs would not have to prove that their disease was caused by exposure to a particular product. Instead, they would merely have to prove that they were exposed to crystalline silica. This would in turn increase the pool of potential defendants. While the possibility of applying strict liability for crystalline silica remains, most experts believe this is unlikely.

Conclusion

Insurers, reinsurers and analysts consider the liability risk posed by diseases due to crystalline silica to be serious, but not disastrous.

This belief is based on four factors:

- Firstly, mortality rates for silicosis and asbestosis are moving in opposite directions.

- Secondly, the tort environment is showing signs of change. This is indicated, for example, by a bill passed by the Ohio state legislature on 24 May 2004 limiting the group of people who may sue for silica exposure. "Silica exposure" as a cause of action only accrues when the "competent medical authorities" inform the plaintiff that he/she has contracted a disease related to exposure.

- Thirdly, insurers have gained valuable knowledge in the asbestos arena (such as the so-called "documentation requirements") which they can use to defend silica claims.

- Fourthly, it is presumed that the workers' compensation system will remain the focus of jurisdiction for the majority of claims.

Nevertheless, US litigation raises a number of risk management issues which must be monitored closely. According to the latest study by the Insurance Information Institute (III), silica-related diseases are normally not excluded from general liability, product liability and commercial umbrella policies. Since the use of crystalline silica will continue in the USA and many other parts of the world, insurers and reinsurers should carefully check whether such conditions should be explicitly excluded in the policy wording.

Michal Mekota, Munich

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Occupational disease risks

Health damage due to welding rod fumes – A new subject for litigation in the USA

A number of recent court cases in the USA have renewed interest in the damage to health caused by toxic quantities of manganese, a heavy metal contained in welding rod fumes. The claims filed allege manganese exposure which can lead to neurological injuries such as the early onset of Parkinson's Disease, the "shaking palsy" first described by the English physician James Parkinson in 1817.

For decades, defendants successfully rebuffed plaintiffs in court, but then – in 2003 – a jury awarded US$ 1m to a man who alleged that he had developed Parkinson's Disease from years of inhaling the fumes from welding rods. Is this an anomaly or is it the first in a series of plaintiff verdicts? Several thousand claims alleging manganese exposure were filed last year and could be followed by thousands more.

Welding fumes and damage to health

Welding rods, welding electrodes and welding wire melt when metals are welded together. The fumes which are released in the process contain a number of elements. One of the commonest is manganese, a heavy metal that is found in almost all types of steel and most welding materials. In small amounts, manganese is a necessary trace element for maintaining good health and important for proper growth in children. In large quantities, however, it becomes toxic, and exposure to high concentrations is suspected of causing severe negative effects on th tral nervous system. Constant excessive exposure ganese can lead to a disorder known as Manganis Parkinsonism, with symptoms similar to Parkinso ease.

These neurological disorders are diseases affectin tain part of the human brain cell known as basal g Parkinson's Disease, for instance, is caused by the brain cells that produce a chemical messenger or transmitter known as dopamine, which transmits mands from the central nervous system to the mu Without this chemical messenger, the nerve cells hazardly and the sufferer is no longer able to cont tain movements. All these disorders are progressi meaning that symptoms such as slow and decrea movement, muscular rigidity, tremor and postural bility persist and worsen, even after the exposure ganese has ceased.

01 During welding operatio substances are released welding rod in gaseous

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02 These fumes contain innumerable elements, one of the commonest being manganese, which is toxic in high concentrations.

The plaintiffs now allege a causal link between exposure to welding fumes and the occurrence of Manganism, Parkinsonism and Parkinson's Disease. The US National Institute for Occupational Safety and Health, however, states that there are no case studies conclusively proving that manganese in welding fumes has any effect on the central nervous system. Moreover, some studies indicate that regular welding operations do not result in a sufficiently high exposure to cause manganese-induced Parkinsonism. However, there are no true epidemiological studies on the relationship between manganese in welding fumes and Parkinson's Disease.

Protective measures

Welders can help to protect themselves against manganese in welding fumes, as well as against other gases, by ensuring good ventilation. Local exhaust ventilation at the point of origin is the most effective control: an exhaust hood near the welding arc or flame draws the contaminants away from the welder's breathing zone. If such facilities are not available, care should be taken to ensure that proper respiratory protection is worn.

Litigation and liability

In 2003, seven trials in which plaintiffs alleged manganese exposure due to welding fumes ended with verdicts for the defendants. However, Larry Elam, a 65-year-old maintenance worker from Illinois who rarely welded but worked around the fumes, won his suit against three welding equipment manufacturers and was awarded US$ 1m. The trial took place in Madison County, Illinois, which is known as a plaintiff-friendly venue; the defendants are appealing the verdict.

In the past 20 years, plaintiffs alleging a link between the exposure to welding fumes and the development of Parkinson's Disease have primarily sued the manufacturers of welding rods. According to the plaintiffs' lawyers, these manufacturers' liability is essentially based on the following factors:

– As manufacturers, they knew or should have known of the hazards associated with manganese in welding fumes.

– They did not warn users accordingly.

The situation appears to be changing now, with the result that manufacturers of respiratory equipment, distributors of welding equipment and other companies are being included in the litigation as defendants.

Some plaintiff lawyers even draw parallels between welding rod claims and the asbestos claims complex, but there is a key difference between the two: in the mid-1960s, welding rod manufacturers warned workers of the dangers of inhaling manganese and admonished them to ensure adequate ventilation. They also began to place warnings on rods in 1967, although without mentioning Parkinson's Disease. The warnings have been stepped up in the last thirty years, becoming more visible and moving from material safety data sheets distributed with the rods to warnings on the actual packaging. Warnings linking manganese with damage to the central nervous system first appeared in 1996.

Evaluation

The factor of paramount importance in the future will be whether medical studies are able to prove a causal link between manganese exposure or welding fumes and neurological injuries. It will also be important to monitor the sums awarded to plaintiffs by juries. Prior to the Elam verdict, most of the defendants were able to settle the cases with nominal amounts because the plaintiffs were unable to prove any causal link. It is too early to judge the verdict's impact on the insurance industry, but it is already clear that the award of US$ 1m has led to an increase in the number of claims filed. Several thousand individual claims were filed last year from a potential pool of at least 35,000 to 70,000 current or former welders. The costs of litigation and defence are increasing. Even if a causal link cannot be established, the insurance industry could well face not inconsiderable costs for warding off losses.

Andrew Koegel, Munich