

"We didn't know how dangerous it was." **Former DuPont workers invoke the** **responsibility of the chemicals giant**

Dozens of former workers at the Lycra factory in the Netherlands have, with the support of their unions, engaged in a battle with the chemicals industry giant, DuPont. They hold the company responsible for numerous miscarriages, hysterectomies, stillbirths and cancers, all caused by their exposure to a solvent.

Pien Heuts

Journalist

Astrid Mussig and her daughter, Sandrina, who has been severely handicapped since birth as a result of maternal exposure to chemicals in the workplace.

Image: © Jeannette Schols



DuPont's Lycra factory in Dordrecht (20 kilometres south of Rotterdam) has long gone. It began producing Lycra fibre in 1964 but was sold in 2004 and closed its doors in 2006, leaving behind it a litany of problems suffered by women workers who had for decades been exposed to Dimethylacetamide (DMA), a dangerous reprotoxic solvent. This liquid solvent was used in the manufacture of synthetic fibres such as the elastic yarn, Lycra, which is particularly used in sports and swimwear but also in underwear.

This volatile solvent is easily absorbed through contact or via respiration. The harmful effects it has on both men and women of reproductive age were already known in the 1970s. They were also described in a DuPont manual dating from the 1980s which, moreover, indicated the need for certain protective equipment. Women who worked in the Lycra factory, generally without such protection, suffered miscarriages and stillbirths, not to mention fertility problems and cervical cancer. No link was established at the time. "How were we to know?" these women say today (see boxes). "DuPont seemed like a good company, they apparently took safety seriously, the salaries were high, and Dordrecht was happy to have a US employer of this size in the region."

It can't be down to chance alone

Jacob De Boer, a lecturer in environmental chemistry and toxicology at the Free University of Amsterdam, considers it unthinkable that no-one established this link. Working with the epidemiologist, Marijke de Cock, he intends to study the link between DMA exposure and the fertility and pregnancy problems suffered by these former workers and their children. This study could take two years but, according to Jacob De Boer, the link itself is not in doubt. "The fact that so many women complained of similar symptoms while working with DMA in an unprotected environment cannot be down to chance alone," he states.

In the 1970s, animal testing had already found that this solvent was harmful to the foetus and to the reproductive organs

(embryotoxic and teratogenic), and therefore a substance to which people of reproductive age should not be exposed. However, the European Chemicals Agency did not officially classify DMA as being of serious concern until 2014.

Jacob De Boer is horrified: as a company video from 1986 shows, staff generally worked in the Lycra factory without any

protective equipment. "It was known that DMA was absorbed 40% through skin contact and 60% through inhalation. These people were wearing no suits or face protection. They were directly exposed to the fumes being emitted by the reels of Lycra yarn. Regular medical examinations were no more than a facade. And there was a notorious absence of any monitoring on the part of the authorities."

"Was our daughter's brain injury the result of DMA?"

Name: Astrid Mussig

Age: 46 years

Lycra DuPont factory: 1989-2001

Exposure: DMA

On leaving secondary school, Astrid Mussig went to work in the Lycra factory. Her father had already been working for DuPont for more than 20 years. Her partner still works for the company, in the Teflon factory, where perfluorooctanoic acid, better known as C8, has long been used. Astrid was working in the spinning room separating the yarns when the reels came out of the machine. She also placed the reels, still giving off fumes, into boxes. 'I never really thought about my many miscarriages and fertility problems,' she explains. 'It only hit me this year when I saw a TV programme on the Lycra and Teflon factories and the consequences of exposure to dangerous solvents. And when I got in touch with other former workers via Facebook. I now wonder if our severely disabled daughter's brain damage is due to this. I was working in those fumes in the run up to her birth. How can it be that, 17 years on, the neurologists are still unable to give us a diagnosis for Sandrina? She can scarcely walk due to muscular weakness, has difficulty talking and has the intellect of a four-year-old. It is astonishing that, despite all this, she has managed to learn to swim.'

Astrid's father, Gerlof Meijer (69 years) worked as a chemical analyst in DuPont's laboratory for years (until 1999). During that time, his wife gave birth to a stillborn baby at six months, and their daughter Astrid weighed only 1040 grams at birth and was not discharged from hospital for six months.

'The reprotoxic effects of DMA are known,' he states realistically. 'But I wonder if DuPont Dordrecht actually knew. It was the first Lycra factory. We didn't have any health and safety signs giving information on the solvent. The company's head office in the US was, however, most probably aware.'

Astrid recounts how they often worked in shorts and T-shirts. Later, they received Nomex protective clothing. 'Safety was a priority for DuPont. That's what they said. There was a real American culture in place. Signs at the entrance gave the number of hours passed without an accident. If you noticed a slight risk or minor problem, you wouldn't say anything because you didn't want to negatively affect the safety record. We regularly underwent medical examinations. I never doubted the safety.'

When DuPont was preparing to sell the Lycra factory in early 2000, Astrid signed up for voluntary redundancy. Her second daughter, Faustina, was born in 2002 with no problems. 'I would like to know what influence DMA has had, particularly because there are still Lycra factories in Ireland, China and Indonesia, where workers of reproductive age are exposed to toxic solvents.'

"They could not talk about it at the time. DuPont was a world dominated by men."

Marian Schaapman, BBZ office

Inadequate monitoring

The Dutch toxicologist gives the example of the carcinogen C8 (perfluorooctanoic acid) used in DuPont's Teflon factory and to which workers and local residents were exposed. The link between this and the high percentage of cancers in the region has only recently been established. "The authorities

should monitor the chemicals industry more rigorously, and better identify all hazardous substances. The chemicals sector is creative: once a substance becomes regarded as a cause for concern, they modify its structure slightly in order to place an alternative on the market, and yet this presents the same dangers to health. It's a profitable business. I can't imagine what lies ahead of us."

The Dutch Minister for Social Affairs has called for an "in-depth investigation" into DuPont's actions regarding exposure to toxic substances. The role of the surveillance and monitoring bodies, such as the Social Affairs and Works Inspectorate (*Inspectie Sociale Zaken en Werkgelegenheid*, SZW), which reports to the minister, will also be examined. The Inspectorate is therefore going to investigate itself. When questioned about this, it stated that it was not interested in the historical aspect but rather in ensuring control of the chemicals industry in accordance with current regulations. "With the knowledge we have today, we can explain things that were

perhaps not banned at the time. But this is not our role. Until the results of the investigation are available, we do not wish comment on DuPont," they merely say. As for DuPont, they are sticking to a written statement in which they state that the DMA levels recorded in the Lycra factory were not considered dangerous and that they acted responsibly and in line with available information.

Serious negligence

Dozens of former workers from DuPont's Lycra factory have come forward and made themselves known to the FNV's Office of Occupational Diseases (*Bureau Beroepsziekten*,

1. For more information, see Heuts P. (2013) Dutch FNV union makes employers pay up for work-related diseases, *HesaMag*, 7, 35-40.

"They made money out of the lifeless little bodies of our babies"

Name: Yvonne and Ron Hemelrijk
Age: 51 and 58 years
Lycra DuPont factory: 1988-2002
Exposure: DMA



Image: © Jeannette Schols

To the outside world, DuPont, the giant of the chemicals industry, is well-known for its safety, its good salaries and its excellent staff conditions, as well as for being a significant

US employer in the Dordrecht region. Ron Hemelrijk was therefore happy to be offered a job there in 1988. He talks of the upper spinning room, where the 'paste' of liquid polymers containing DMA was mixed and sent along pipes containing nitrogen gas, from which the Lycra yarn would emerge further down the line. The fumes these pipes contained would escape as the yarn emerged and was wound onto reels.

Ron: 'In the upper spinning room, we wore heat-resistant gloves and face protection due to the intensive temperature, which could reach 50 degrees Celsius. This encouraged the absorption of DNA through the skin even more. Apart from that, at that time everyone wore the company's simple jackets and jeans. We were constantly shrouded in vapour. And if a machine broke down, we would find ourselves enveloped in toxic clouds.'

Yvonne: 'At home, everything was impregnated with Lycra. The paste stuck to Ron's clothes and was ground into the doormat. He would come home covered in finishing oil, which also contained solvents. We were never warned that DMA was reprotoxic and embryotoxic. And I was exposed to it via Ron. If you're given information then you can make informed choices. In actual fact, at that time we were thinking about starting a family. And we wanted a large one.'

Yvonne's first pregnancy passed off smoothly. Femke was born at the end of 1988. It was then a long time before their second child was born. Yvonne shows us an ultrasound image. 'I lost my baby at 11 weeks. The third and fourth pregnancies also ended in miscarriage, but the gynaecologists could find no reason for it. My pregnancy with Mathijs in 1992 was very difficult. I was so worried, despite 15 scans. The birth was normal. I don't know if Mathijs' autism is linked to DMA exposure or not. After that, I didn't want any more children.'

'Our urine was checked for DMA every fortnight,' explains Ron. 'If the rates were too high we would be sent to the lower spinning room for a week. But there were fumes there too. DuPont knew how dangerous it was. I feel very bitter when I think how we were reprimanded for leaving a drawer open or for going up the stairs without holding onto the handrail. Our medical tests were also window dressing. We were never told the results.' Yvonne: 'DuPont made a lot of money out of the lifeless little bodies of our babies.' Ron: 'From an economic point of view, the company had the wind in its sails until its closure in 2006.'

Yvonne and Ron feel that the world's 'safest company' should accept its responsibilities. This must all come out into the open, states Yvonne. 'They knowingly placed us in danger, both ourselves and our children. We should have been given the choice.'

BBZ). Marian Schaapman runs this office, the aim of which is to support union members suffering from an occupational disease or having been the victim of an accident at work to hold the company responsible and obtain compensation'. In the summer, the BBZ collectively invoked DuPont's liability with regard to the former factory workers, and this has had the effect of suspending the time limitation for legal action. Mrs Schaapman is also shocked by the scale of the affair. "Generally, speaking, when hazardous substances are not identified as problematic it is an issue of grave negligence. Although companies are required to register carcinogenic, mutagenic and reprotoxic substances (CMR), only 13% of them actually do so in the Netherlands."

Based on interviews and other sources, the BBZ will retroactively determine the working conditions that were current in the Lycra factory. With the help of Jacob De Boer, the causal link between DMA exposure and the health problems suffered will be demonstrated on the basis of the former workers' medical records. "We have a solid case but we still need to complete it with further evidence," states Marian Schaapman. "The consequences of DMA exposure are clearly described in the literature: miscarriages, stillbirths, bleeding and ovarian function disorders. The testimonies we have gathered from these women bear witness to a litany of suffering. They could not talk about it at the time. DuPont was a world dominated by men. On top of which, they had no idea of the risks to which they were being exposed."

Collateral damage

According to Marian Schaapman, the overriding objective of her clients is not to obtain compensation for damages suffered but rather recognition of the fact. And to contribute to further prevention. "It would be to DuPont's credit if it were to admit its liability. I don't rule out the fact that they may have under-estimated the risks. We are not seeking to prolong proceedings. A fund could be created, as was the case for 'the DES children' (offspring of mothers who took Diethylstilbestrol to prevent miscarriage and who were born with health problems, ed. note) and the victims of asbestos. These women and their children have a right to know exactly what happened."

Her 15 years of experience with BBZ have taught her that companies often have a blind spot when it comes to their workers' occupational health. "It's an aspect that is often overlooked; the workers come last. Their illnesses are considered collateral damage." ●

"The chemicals sector is creative: once a substance becomes regarded as a cause for concern, they modify its structure slightly in order to place an alternative on the market, and yet this presents the same dangers to health."

Jacob De Boer, toxicologist

"You never recover from the loss of a child"

Name: Romy Hardon
Age: 57 years
Lycra DuPont factory: 1977-1988
Exposure: DMA



Image: © Jeannette Schols

'Was I ever worried? How could I, a worker, know that I was working with dangerous solvents?' Romy Hardon wants to discover the truth of the matter. She wants justice, for herself and for so many other women, as well as recognition of the fertility problems they suffered due to the solvent DMA.

At the age of 17, she began working in the control department of DuPont's Lycra factory in Dordrecht. She was Toon's daughter. Everyone knew her father, as he had worked for DuPont since they opened their first (Orlon) factory in Dordrecht in 1962. He later worked in the Teflon factory, where the carcinogen C8 was used. 'On his death bed, my father, aged only 46, asked me to find out why he had suffered from so many malignant tumours.'

Romy was happy at DuPont. Old video footage from the 1980s shows how the women, their arms deep in reels of Lycra, would check them and package them into boxes. 'The stench was appalling: we would be working with solvents all day long,' she explains. 'The Lycra must have spread in the air. Protective equipment? No, of course not. DuPont was the safest company in the world; that's what we believed anyway. If you didn't hold the handrail, you got a warning. If you had to work overtime, there'd be a taxi to take you home. Safety prizes were awarded. And every so often we were given medical examinations, although we never received the results.'

Romy was constantly having to visit her gynaecologist. She suffered from continual bleeding and underwent several D&C procedures. In 1985, she fell pregnant. At eight months, there was a problem. Struggling to hold back her emotion, she talks to us of Wesley. 'All of a sudden, I felt really ill, my kidneys weren't working, my blood wasn't clotting, my liver wasn't functioning properly. I had pre-eclampsia. I gave birth to a stillborn baby in intensive care. I visit Wesley's grave every month. You never recover from such an experience.'

She went back to work at the Lycra factory. Her subsequent pregnancies were all plagued with difficulties and it seemed she would never be able to give birth. Then, in 1988, she had a little girl and, in 1993, a little boy. This was followed by a hysterectomy. 'It later became clear that all the women had suffered miscarriages, stillbirths, hysterectomies or cancer,' states Romy. 'My mother was also exposed to DMA by my father, and she gave birth to stillborn twins at six months. I am sure that DuPont knew of the dangers of DMA for people of reproductive age. It was well-known. FNV's BBV office has a solid case: there is an old video showing how we worked without any protection, many women suffered the same symptoms and the substance was known to have harmful effects on young men and women. Justice must be done, even if it takes 20 years.'