**Green with Rage: The Silent Contamination**

**52’ Script**

Key

**BOLD = Commentary**

Yellow = To be subtitled (other languages than English)

Normal text = English Dialogue

Red text = Captions/Graphics

Cecile Baniel Polta [00:00:05]

Hello. How are you?

Martin [00:00:08]

So, we're going to analyse the toys.

Martin [00:00:12]

**When we started this investigation into flame retardants… toxic chemicals that are supposed to prevent fires, we never imagined we would find them in children's plastic toys.**

Martin [00:00:22]

On this gun, we're at 3520.

-Wow.

Martin 00 27

More than 7 times higher.

Martin [00:00:30]

**Flame retardants. These chemicals have found their way into all of our everyday objects. Toys, furniture, household appliances, insulation.**

**Supposed to inhibit fire…these invisible, odourless compounds are, above all, dangerous to our health... They interfere with hormones and are suspected carcinogens.**

**Firefighters are particularly exposed to them. The number of cases of cancer in the profession is increasing.**

Etienne Alain [00:01:08]

In the brigade, we've got two others who've had testicular cancer, and then there's a woman who's had breast cancer.

Martin [00:01:14]

**Some lose their battle and die in silence.**

Ludivine Mahieu [00:01:17]

47 years old. He was 47.

They're not looking for all these retardants. I don't understand it.

Kim Anderson [00:01:27]

Here are the bracelets for the fire service's analysis.

Mathilde [00:01:31]

**With the help of American and European scientists, our team of journalists will be taking dozens of samples across France over the next year to measure the level of flame retardant contamination in firefighters. They will be given the results.**

Perso [00:01:49]

The observations you've made...the toxicity has been proven. Now we have to move forward.

Mathilde [00:01:55]

**These revelations will make the news.**

M6 [00:01:57]

A study shows that firefighters have a higher risk of contracting cancer.

Mathilde [00:02:03]

**However, our investigation will take us much further than just firefighters.**

Mathilde [00:02:10]

I feel like I'm about to lose my footing. I'm going to swim. Okay, I'll take a sample here.

Mathilde [00:02:17]

**We'll discover that these toxic flame retardants are also found in children's toys….**

Petra Pribylova [00:02:23]

I wouldn't want my children to play with these toys.

Mathilde [00:02:28]

**…But also in our environment and drinking water.**

Martin [00:02:34]

Hello, Martin Boudot with France Télévisions, Green Warriors. We've been trying for weeks to get an interview with you.

Olivia Grégoire [00:02:39]

I would ask you to stop filming please madam. Thank you.

Martin [00:02:42]

I'll show you the report.

Opening credits

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WITH THE PARTICIPATION OF FRANCE TÉLÉVISIONS AND USHUAÏA TV

A FILM BY MARTIN BOUDOT AND MATHILDE CUSIN

GREEN WARRIORS: FLAME RETARDANTS

Mathilde [00:03:14]

**It all began here, in the hills of California, on the west coast of the United States.**

**On this path is a man whose every stride is now a victory.**

**Tony Stefani didn't always have the strength to climb these steep hills.**

**At 73, this retired firefighter is a cancer survivor.**

Tony Stefani [00:03:44]

I went for a run one winter morning. But I had to stop when I suddenly felt unwell. I was really exhausted. In fact, I was bleeding internally because of a tumour in my kidney.

Mathilde [00:04:02]

**In 20 years, Tony Stefani has already had two cancers: kidney and bladder. According to him, it's due to his profession.**

**It was in the heart of San Francisco, at this fire station where Tony Stefani served for 28 years.**

Tony Stefani [00:04:29]

Hey what's up man

Mathilde [00:04:34]

**Here, Tony is considered a hero for the two battles he has fought in his life...**

**One against fire,**

**…And the other against an evil that plagues the ranks of American firefighters.**

Mathilde 04 50

**This morning, he has a meeting upstairs with his brigade leaders to discuss the large number of cancer cases in the profession.**

Tony Stefani [00:04:58]

We're going to talk about patients today, and we're going to talk about the number of cases we're tracking. Judy, who works with patients, is going to give us the latest figures.

Judy [00:05:14]

Yes, it's definitely not getting any better. Since June 2021, we've supported 101 patients.

Tony Stefani [00:05:27]

These statistics are really disturbing.

Mathilde [00:05:31]

**Like Tony Stefani, many of his colleagues have fallen ill in recent years. For example, Matt Alba…Now suffering from a brain tumour…**

Mathilde 05 43

**..or Jeanine Nicholson, the captain of the San Francisco fire brigade, who survived breast cancer.**

Jeanine Nicholson [00:05:51]

Two weeks after the diagnosis, I had a double mastectomy, and for 6 months I had a catheter in my chest and 16 sessions of chemotherapy. It was hellish.

Matt Alba [00:06:07]

I had a stroke, and that's how we found out I had a brain tumor. I couldn't have got through it without you, thank you.

Tony Stefani [00:06:21]

It's always hard to find out that one of us is ill. These men and women need to be protected. They put their lives at risk every day. We have to be there when they need us most.

Jeanine Nicholson [00:06:41]

During fires, we are exposed to toxic substances. There are still a lot of flames in many objects that don't need them.

Mathilde [00:06:56]

**Flame retardants are chemicals found all over our homes.**

**They can be found in car seats, household furniture such as sofas, or in plastics and insulation.**

Mathilde 07 15

**Their effectiveness is now widely questioned, as they only add a few seconds, which is not enough for firefighters.**

Mathilde 07 26

**Their toxicity, however, is well established. Flame retardants are now recognised as endocrine disruptors and some of them carcinogenic.**

Mathilde 07 37

**Firefighters are particularly exposed to them, because in the event of a fire, these molecules are released in the air. Despite their protective equipment, firefighters are affected and inhale them.**

Mathilde 07 53

**For several years now, Tony Stefani has been fighting against these chemicals, which have already killed many of his fellow firefighters.**

**He began by investigating the number of incidents reported by his fire station over the course of his career.**

**He then compared it with the number of firefighters who had fallen ill.**

Tony Stefani [00:08:17]

These are the pages of the logbook of the fire station where I worked and which indicates each fire intervention. One morning in December 1976, for example, at 9.04am, I went out on my second fire alarm. I've responded to 576 fires in my career. In my fire station, four of my fellow firefighters developed the same type of cancer as mine. It's a type of cancer that occurs in one person in 100,000. Of the five cases in my fire station, only two of us are still alive.

Mathilde [00:08:52]

And how did you realise there was a link with exposure to chemicals?

Tony Stefani [00:08:58]

When I went to see my doctor, he asked me what my profession was and if I worked in the chemical industry. I replied: No, I'm a fireman. And then he said: Well, you work in the chemical industry, you're constantly exposed to toxic chemicals. And that's probably why you've got cancer. And he added: We need to find out why all these firefighters are getting sick.

Committee member [00:09:30]

I call to the stand Tony Stefani, who is a cancer survivor.

Mathilde [00:09:37]

**On 24 July 2012, Tony Stefani appeared before the US Senate as part of a commission to regulate the use of these flame retardants in the country.**

Tony Stefani [00:09:49]

A recent study on firefighters showed that we have a level of flame retardants in our blood that is 30% higher than that of the population of California and more than 60% higher than that of the American population. Every month, we attend the funerals of firefighters who have succumbed to this horrible disease.

Tony Stefani [00:10:07]

This commission was intended to put pressure on the judges.

Mathilde [00:10:12]

And how did the industry defend itself?

Tony Stefani [00:10:15]

They got a doctor to testify and then it was discovered that he had been paid about $250,000 to testify on behalf of the chemical industry and say that these chemicals were not toxic. There's a very strong lobby, and they spend millions of dollars every year, millions, to keep selling their products.

Mathilde [00:10:38]

**Following these hearings, the State of California decided that the use of flame retardants in everyday objects would no longer be mandatory. However they are still allowed in the state as in the rest of the country.**

Mathilde 10 58

**Since then, Tony Stefani has continued his fight. He is now monitoring the San Francisco firefighters' exposure with his silicone bracelets.**

**They were developed in the north-west of the United States, at Oregon State University.**

Kim Anderson [00:11:21]

Hello!

Mathilde [00:11:24]

Hello Kim, how are you?

Kim Anderson [00:11:25]

Would you like to see our bracelets?

Mathilde [00:11:29]

**In these laboratories, Kim Anderson, toxicologist and researcher, works on the contamination of living organisms by chemicals.**

**She has designed and patented bracelets that mimic the epidermis, the top layer of our skin, and absorb up to 500 different types of chemicals.**

Kim Anderson [00:11:49]

They're hydrophobic. In other words, they repel water, just like your skin. If you drop water on your skin, the water won't be absorbed.

Mathilde [00:11:57]

So it's not just a plastic bracelet?

Kim Anderson [00:12:02]

No, they're actually made of several layers, exactly like your skin. If I made a cross-section of the skin, you would see all these cells in three dimensions.

Mathilde [00:12:13]

Would it be interesting for you if we did a study with French firemen?

Kim Anderson [00:12:18]

We don't have much data yet because we're only at the beginning of our research. We have carried out a study on American firefighters on and off duty and we are seeing differences in exposure. I would therefore encourage you to take these bracelets home with you and to carry out a similar study with French firefighters.

Mathilde [00:12:39]

**Will the exposure to flame retardants be the same in French firefighters?**

Martin [00:12:48]

**Despite restrictions over the years, these chemicals are still widely used in France.**

**There are no studies on the exposure of the 250,000 firefighters to these substances…**

**Nor is there any data on the current number of firefighters suffering from cancer.**

Firefighter [00:13:09]

Oh!

Martin [00:13:13]

**In the Paris region, in these containers, firefighters in training face flames under real conditions.**

**The temperature reaches up to 560 degrees at the bottom of this container.**

Firefighter [00:13:28]

Julien, change of trainer.

Martin [00:13:32]

**This is where our investigation in France begins.**

Martin 13 38

**With the help of Kim Anderson, the American scientist behind the silicone bracelets, we're going to carry out the first study into the exposure of French firefighters to flame retardants.**

Kim Anderson [00:13:53]

The wristbands need to be worn on the wrists and especially underneath the protective gear to really see what they're exposed to.

Martin [00:14:04]

**One of the volunteers to wear them is Stéphane Morizot.**

**At 64, this firefighter has just been diagnosed with prostate cancer.**

Stéphane Morizot [00:14:15]

I felt pain from renal colic. So, hospital, treatments, biopsies and ultimately prostate cancer.

Martin [00:14:26]

**Like Tony Stefani, the American firefighter, Stéphane Morizot is also interested in the cause of his cancer.**

**He feels sorry about having a total lack of information in his profession about chemical risks.**

Martin [00:14:41]

Have you ever had any experience with flame retardants in your career?

Stéphane Morizot [00:14:45]

No, not particularly.

Martin [00:14:46]

It's not something that firefighters know about.

Stéphane Morizot [00:14:48]

It's not something that firefighters are familiar with. We already knew that there was this notion of toxicity in relation to smoke. What we didn't realise was that it was the whole environment and the different ways of contamination. For us, it was just respiratory protection and that did the job.

Martin [00:15:07]

**Nowadays, gloves, overalls and masks protect firefighters mainly from heat and carbon monoxide, but much less from exposure to chemicals.**

Stéphane Morizot [00:15:19]

I think the important thing is not to give up. What can we do to move forward? What can we do to spread this information so that things can move forward?

Martin [00:15:30]

**We're equipping Stéphane Morizot and his colleagues with the silicone bracelets.**

Martin [00:15:33]

Stéphane, go ahead, take the blue one. Perfect.

15 40

The idea is that it acts as skin.

Martin [00:15:42]

**A total of 19 firefighters across France will be wearing them.**

Kim Anderson [00:15:48]

Firefighters shouldn't just wear them when they're responding. They have to keep them on when they wear their equipment and wash it. We really look at all their exposure. So I would advise you to have them wear them for at least a week.

Martin [00:16:06]

**The bracelets will then be sent to the United States to be analysed in Kim Anderson's laboratory.**

**While waiting for the results, Stéphane Morizot begins to gather information on cancer in the profession.**

**This morning, in the Nouvelle-Aquitaine region, he meets up with several firefighters, some of whom have been diagnosed with cancer.**

Martin 16 30

**Like Etienne Alain, a 31-year-old victim of testicular cancer.**

**They all share the same view. It's difficult to draw up statistics when these illnesses are not recognised as being linked to their work.**

Martin [00:16:42]

Has your cancer been recognised as an accident at work? An occupational disease?

Étienne Alain [00:16:50]

No, not at all. After the ablation, I had my medical check-up, like any firefighter who has an annual medical check-up. Then I went back to work.

Stéphane Morizot [00:17:03]

Is being a firefighter recognised as a dangerous or high-risk job? For the public, yes, it's a dangerous job. But no, we don't have any of that.

Martin [00:17:14]

**In the United States, up to 28 different types of cancer are considered to be occupational diseases in firefighters… Étienne Alain and Stéphane Morizot’s cases are among them. But in France, only nasopharyngeal cancer is recognised.**

Etienne Alain [00:17:30]

They removed my testicle. That was three years ago. I followed up every three months at first with a scan and blood tests. But then I think, naturally, you go on with your life and you continue to think about your daily routine. When you add them all up, there are at least 3 in the brigade, and they're all young. There are two others who had testicular cancer, and then there's a woman who had breast cancer.

Martin [00:18:01]

How does it feel to have all these guys around you today?

Stéphane Morizot [00:18:05]

It's important to recognise this, so that the treatment is taken into account. To support colleagues and families when it happens. That's what Etienne just said. We don't know who to talk to. In the end, at least, so that the illness is recognised.

Martin [00:18:28]

**These firefighters continue to live with their cancer…**

**..for others, the disease has won the battle.**

**On the shores of the North Sea, in Dunkirk….**

**Tony Mahieu, a firefighter and father, died a few months ago.**

Ludivine Mahieu [00:18:51]

Tony was a jovial person. He liked to party, go out, and get his friends together. He was someone who joked a lot, but at work he was a professional. He was 47. He was 47 years old.

Martin [00:19:15]

**Tony Mahieu died of lung cancer.**

**His wife, Ludivine, a nurse by profession, was with him right up to the last moment.**

Ludivine Mahieu [00:19:28]

I did what I could.

Ludivine Mahieu 19 39

He knew I was there. He wanted me to look after him. He didn't want a nurse.

Martin [00:19:46]

**Ludivine Mahieu is angry. Angry at the whole system. She feels her husband wasn't protected enough.**

**On 23 November 2022, he had his annual medical check-up and was deemed fit to work.**

**But that same evening, he suddenly felt exhausted and underwent further tests at the public hospital.**

Ludivine Mahieu [00:20:08]

On the 25th, we had an appointment with the doctor and that's when she said that it's cancer.

Suspected cancer.

Manon [00:20:16]

-So it went from one thing to another?

Ludivine Mahieu [00:20:19]

For them, they didn’t see stage 3 cancer, they didn’t see it. He was fit to go to work.

Martin [00:20:25]

**Two months later, Tony Mahieux entered intensive care, struck by a pulmonary embolism.**

**His wife called the fire brigade medical service to confront them.**

Ludivine Mahieu [00:20:36]

I wanted to have the results of the blood test. They said no, everything's fine. File archived. In fact, they're not looking for what they should be looking for. They're looking for the bare minimum, so they couldn't see it. I'm trying to understand why there isn't this whole medical system in place. I just don't get it. It's a high-risk job, and they're looking to see the firefighter’s cholesterol levels, if he smokes, if he drinks, if he's addicted to drugs, but not the importants ones, like how much they're exposed to fire fumes or any other toxic substance. They don't look for that. No chest X-ray. No lung x-rays for fifteen years.

Martin [00:21:33]

**Like Tony Mahieu, are French firefighters affected by chemicals, particularly flame retardants?**

Martin 21 46

**After several months of analysis, we received the results of the bracelets worn by the front-line French firefighters.**

**Despite their overalls and gloves, they had all been exposed to flame retardants.**

Martin 22 04

**We meet up with those who wore the bracelets, such as Etienne Alain and Stéphane Morizot. Did the flame retardants contaminate their bodies? To find out, we're going to take a blood sample from them.**

Martin [00:22:18]

Gentlemen, I'm just going to give you this little form to fill in. It's to help interpret the results.

Martin [00:22:27]

**A nurse will accompany us to take these blood samples.**

Martin [00:22:32]

It's going to be fine, Stéphane.

Stéphane Mozirot [00:22:34]

I can't stand the sight of blood, but it should be fine.

Nurse [00:22:37]

-Me neither, I close my eyes.

Martin [00:22:37]

Why are you interested in this? Why did you agree to take part in this study?

Stéphane Morizot [00:22:41]

For the future generations of firefighters who are going to work with us. This work is also for them.

Martin [00:22:48]

Thank you. So that's number three.

Martin [00:22:54]

**A total of sixteen firefighters from all over France. We then take these samples to the Czech Republic.**

Petra Pribylova [00:23:09]

Hello ! Nice to see you.

Martin [00:23:13]

Here are the blood samples from the firefighters.

Martin [00:23:19]

**Petra Pribylova is the director of research at this laboratory. It is the European leader in the detection of flame retardants.**

Petra Pribylova [00:23:29]

It's really nice to see that there are more than 50 microlitres of human serum to analyse.

Martin [00:23:36]

**The scientist will be looking for up to ten different flame retardants in these blood samples.**

Petra Pribylova [00:23:45]

The extraction will be done on the proteins. We take her to the centrifuge.

Martin [00:23:51]

**Petra Pribylova has already carried out similar studies on other groups of firefighters in Europe, but never in France. She has reached a conclusion.**

Petra Pribylova [00:24:03]

It's a real problem and we need to push the authorities to think about it and legislate on the subject, but also convince the United Nations Environment Programme.

Martin [00:24:20]

**We let the research team analyse our samples.**

**Three months later, we received the results.**

**Flame retardants had been detected in the blood of all the firefighters.**

24 38 Graphics

Male infertility

Thyroid disease

Carcinogenic

Martin 24 38

**One in particular was found in worrying levels. BDE 209.**

**Firefighters have up to 65 times more of it than the general population. This flame retardant is thought to be responsible for male infertility and thyroid disease. It is also suspected of being carcinogenic.**

Martin 25 03

**According to our investigation and the reports we have received, at least 2,200 of the 55,000 professional firefighters would be suffering from cancer.**

Martin 25 16

**In this former fire station converted into a conference space in Paris, we organised a presentation of our findings.**

Martin 25 27

**Petra Pribylova, the Czech scientist, made the trip.**

**Stéphane Morizot, Etienne Alain, the firefighters with cancer who took part in our study, and many other firefighters were also present…**

Martin 25 45

**As well as Ludivine Mahieu, the wife and widow of Tony Mahieu, who died of lung cancer.**

**Senator Emilienne Poumirol and MP Yannick Monnet also came to find out about our revelations.**

**National media also covered the event.**

Martin [00:26:02]

Hello and thank you all for coming in such large numbers to this presentation of the results of our investigation.

Petra Pribylova [00:26:13]

Here you can see the results detected in French firefighters and their exposure to pollutants. Studies already carried out on animals have concluded that these flame retardants have neurotoxic effects, neurotoxin reproduction effects, that they can damage DNA and that they are also endocrine disruptors.

Martin Pribylova [00:26:42]

Thank you Petra. Stéphane, the floor is yours.

Stéphane Morizot [00:26:45]

We have to face it and react for our colleagues who are still working, for the new generations, and to understand the subject, the problems, to limit the consequences.

Ludivine Mahieu [00:26:58]

We need to introduce preventive medicine for firefighters, do a census, find out how many firefighters have cancer because there are more and more of them.

Firefighters unionist [00:27:07]

In practice, we’re not making any progress. We need to file a national complaint.

Martin [00:27:12]

**MP Yannick Monnet wants to tackle this problem.**

Yannick Monnet [00:27:16]

What it reminds me of in general is that we don't take care of the people who take care of us. We need to get to work on epidemiological surveillance and we need to look at how we can change things very quickly from a legislative point of view.

Martin [00:27:32]

**National media are picking up on the conclusions of our investigation.**

Petra Pribylova [00:27:37]

We need to document the long-term exposure of the population, especially firefighters.

M6 [00:27:43]

A study shows that firefighters have a higher risk of contracting cancer.

BFMTV [00:27:48]

The results of the investigation are clear. In the Paris region alone, hundreds of firefighters have cancer as a result of their work.

France Info [00:27:58]

In France, there is no precise data on the number of professional firefighters suffering from cancer.

Martin [00:28:08]

**In light of the media impact, we were received at the headquarters of the Sécurité Civile by their spokesman, Colonel Arnaud Wilm. They are responsible for firefighters in France.**

Martin [00:28:20]

Nowadays, do we have any ideas about the health monitoring of firefighters?

Arnaud Wilm [00:28:24]

We don't currently have any means of measuring the health of firefighters. It's something we're looking into. What we can do, and this is the challenge for the coming years, with an implementation that is being discussed today, is to create a national health monitoring centre for firefighters. We're getting ready to bring out new fire protection uniforms that will be able to stop 70% of pollutants using a fabric complexing system.

Martin [00:28:55]

When will this be made available to firefighters? It isn’t yet, is it?

Stéphane Morizot [00:28:59]

So these will be available during 2025. It will then be up to the public establishments that employ firefighters, i.e. the SDIS, to buy them.

Martin [00:29:10]

**Better protection, however these new uniforms will neither be compulsory nor available to all firefighters.**

**What about their medical follow-up and the recognition of their professional illnesses?**

**At the National Assembly, MP Yannick Monnet questions Gérald Darmanin, the French Minister for the Interior and Overseas Territories.**

Yannick Monnet [00:29:36]

Mr. Minister, firefighters are exposed to many toxic substances during their work. In Australia, 12 types of cancer, in Canada, 19 types of cancer and in the United States, 28 types of cancer are recognised as occupational diseases in firefighters. In France, only one, and we have no data on the current number of firefighters suffering from cancer. There is growing concern about the impact of flame retardants. Will you finally introduce proper medical monitoring, investigation through data collection, prevention, and undertake the epidemiological and biological studies that are essential, in particular to extend the list of cancers recognised as occupational illnesses in our firefighters?

Chairwoman [00:30:14]

Thank you, sir.

I give the floor to Gérald Darmanin, Minister of the Interior and Overseas France.

Gérald Darmanin [00:30:20]

Yes, I'm ready to expand that list. But you are perfectly right, we are behind on the data and more than six months ago, I launched an epidemiological study with my colleague from the Department of Health.

Unfortunately, it's going to take a little longer to find out exactly what's going on

in the working lives of firefighters. I am involved sir and once the results are known, we’ll get them to you and, of course, provide our firefighters with all the support that a great country like France should have.

Session Chairwoman [00:30:44]

Thank you Minister.

Martin [00:30:47]

**The Ministry of the Interior should present the conclusion of its epidemiological study at the end of 2024.**

**In the meantime, no new occupational diseases have yet been recognised in firefighters.**

Mathilde [00:31:03]

**As we continue our investigation, one man changes its course.**

**According to him, firefighters are far from being the only ones contaminated by flame retardants.**

Mathilde 31 17

**Pierre Hennebert. This environmental chemist has spent his life monitoring the levels of pollutants such as flame retardants in plastics.**

**He has just retired after a career at a public body called Ineris, the French National Institute for the Industrial Environment and Risks. This is the first time he has spoken out in the media.**

**According to him, flame retardants are particularly found in recycled plastics.**

Pierre Hennebert [00:31:44]

It's the result of the uncontrolled circular economy. It's made from materials that were themselves bought at the lowest prices on the market.

Mathilde [00:31:55]

**These cheap plastics come from all sorts of places: plastics from cars, electronics, materials, construction. Once agglomerated, they contain a very high level of flame retardants.**

**These contaminated plastics can then be used in the manufacture of children's toys.**

Pierre Hennebert [00:32:19]

There have been cases of children's toys not meeting the regulations. If your baby puts a brominated plastic in its mouth one day, you won't be able to detect any effect. But if it’s a repeated exposure over many years, you get hormonal effects called endocrine disruptors. Toxicologists think that this is linked to repeated exposure, particularly during childhood.

Martin [00:32:53]

So researching the levels of flame retardants in children's toys is your priority?

Pierre Hennebert 00:32:57]

Yes, all plastics that children touch.

Mathilde [00:33:03]

**Are French children's toys contaminated by dangerous flame retardants?**

Martin [00:33:10]

**To find out, we went to Palaiseau, on the outskirts of Paris. To the nursery of Cécile Baniel Polt who is a childminder.**

Cécile Baniel Polta [00:33:22]

Yes, you'll see, there are lots of toys, but you won't be able to play with them all, okay? Come on, let's go.

Martin [00:33:31]

**These parents have agreed to let us scan their children's favourite plastic toys.**

**Using this X-ray fluorescence gun.**

Martin 33 42

**We have received special training to use it.**

**This technology instantly measures bromine levels, marking the presence of brominated flame retardants, the most dangerous in the category.**

**In France, toys are subject to special regulations. Levels of brominated flame retardants must not exceed 500 milligrams per kilogram.**

Martin [00:34:06]

Here in the pearls, we have more than four times the recommended maximum. Here, we're at 2019 milligrams per kilogram of bromine. So this one is interesting to start with and we're going to send it to the laboratory.

34 21

This one here, you see, in the part of this gun, we're up to 5708, which is more than ten times higher. This toy is, subject to laboratory analysis, illegal and must not be sold. Thank you. Here we have 4935 for this gun, for this spot here.

Cécile Baniel Polta [00:34:48]

It scares me because I wonder how we will be able to consciously choose toys and even materials in our daily lives that are good for us.

Martin [00:34:59]

Were you aware of this problem?

Mum [00:35:01]

Not at all. It's my first baby so I have to admit that I try to buy things from well-known brands that were recommended. But, I have to admit that I don't read all the labels.

Martin [00:35:16]

**Of the 50 toys tested here, 10% exceeded the legal thresholds. Does this problem also apply to new toys?**

Mathilde [00:35:27]

**We bought 50 other toys that we also analysed.**

**Some had illegal levels of bromine.**

Mathilde 35 40

**…yet again, 10% of these new toys seemed to be above the limits.**

**In the Czech Republic, Petra Pribylova, the flame retardant specialist, sifted through the various parts of these toys.**

**After being crushed, they are analysed in her laboratory.**

Mathilde 36 05

**A few weeks later, we received the results.**

**All the toys tested contained dangerous brominated flame retardants, at levels exceeding French regulations. They should therefore not be sold commercially.**

Mathilde 36 22

**Like this princess accessory, 175 times above the standard, and this children's radar which was 213 times above. They are sold in discount stores called Action.**

Mathilde 36 32

**This pistol has levels 84.8 times above the norm, and this rifle 73.6 times above.**

**They are sold by the massive Carrefour, supplied by the French company Ferry.**

**When confronted with these results, none of these retailers agreed to meet us for an interview**

Mathilde 36 55

**Ferry, the toy importer responded…**

FERRY [00:36:56]

**The fact that brominated substances were found in the products is certainly due to the supplier's use of recycled plastic, which was never authorised by Ferry. Following this unfortunate experience, Ferry added flame retardants to all its usual chemical analyses and referred the matter to the authorities.**

36 56 Text on screen

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Mathilde [00:37:16]

**The company Action, after carrying out its own tests, claims that its toys are within regulations. The discount chain did not wish to analyse our samples.**

Martin [00:37:28]

**For several months, we also tried to get the opinion of the authorities on these results. To no avail.**

**This afternoon, a public conference at the Ministry of the Economy and Finance announced that the Minister for Trade in charge of this issue, Olivia Grégoire, will be present.**

Martin [00:37:50]

Hello, Martin Boudot with France Télévision, Green Warriors. We've been trying for weeks to get an interview with you about toys. I know it has nothing to do with today's subject…

Olivia Grégoire [00:37:59]

I was talking about it at lunchtime.

Martin [00:38:00]

In fact, as you can imagine, we carried out a year-long study on toys and we realised that out of the hundred or so toys we analysed, more than 10% were sometimes up to 240 times above the standards, particularly in terms of bromine.

Olivia Grégoire [00:38:11]

-Wait, because you're filming. I don't know what you're filming.

Martin [00:38:13]

We'd like to know if we could have a proper interview.

Olivia Grégoire [00:38:17]

By the book, yes. Right now, you have to contact my office.

Martin [00:38:20]

Already done and they refused. But we'd be delighted to have you.

Olivia Grégoire [00:38:24]

It's strange that the office refused.

Martin [00:38:25]

It's a shame.

Olivia Grégoire [00:38:26]

Since I'm a nice enough chick, let me answer.

Martin [00:38:29]

You seem very nice. It would be great to do an interview with you. It's very important because these toys are toxic, they're on the market, and nearly 10% of all the ones we've analysed are non-compliant.

Olivia Grégoire [00:38:37]

I need to know a bit more. I need to ask questions, where you bought them...I'll ask you to stop filming please, madam, thank you.

Martin [00:38:44]

I'll give you the report.

Martin [00:38:46]

**We won't be able to ask the Minister any more questions. When we requested again, the minister's office ultimately refused any possibility of an interview.**

**The Ministry would not tell us how many toys these services had checked in 2023. They simply assure us that in France, no flame retardant thresholds have been exceeded. However our tests show at least 10% being non-compliant.**

Mathilde [00:39:14]

**While the risk of these brominated chemicals has now been established, the scientific community is concerned about a new generation of flame retardants that are still authorised: phosphorus flame retardants.**

Mathilde 39 30

**We return to Cécile Baniel Polta, the childminder.**

**Her day nursery will be the starting point for an unprecedented study into the children's exposure to these new flame retardants. Catherine Pirard, an environmental toxicologist at the C.H.U. de Liège, is going to help us.**

Catherine Pirard [00:39:45]

These phosphorus flame retardants are substances that have replaced other flame retardants that were brominated flame retardants. These substances are not as well known and their toxicity is less well studied. They are suspected of being endocrine disruptors, so we really may have a problem.

Mathilde [00:40:01]

Why do you think it would be interesting to analyse children's urine samples?

Catherine Pirard [00:40:05]

Because this population is particularly vulnerable, for two reasons. The first is that they put objects in their mouths like toys or other goods. These products can be ingested. And the other reason that makes this a particularly sensitive population is that they are in full development. So they are really at a critical stage in the development of certain functions that may be affected by these substances.

40 34

To take part in this study, you have to be between three and twelve…

Mum [00:40:41]

Hello!

Catherine Pirard [00:40:43]

...and of course you have to have parental consent.

Mathilde [00:40:47]

Thank you Valentin.

Valentin [00:40:49]

That’s okay.

Mathilde [00:40:50]

Thank you very much. Perfect.

Catherine Pirard [00:40:54]

The samples must be kept in a cool place between four and six degrees until they are transferred to the laboratory.

Mathilde [00:41:02]

**We're also going to analyse urine samples from children in other towns in the Ile de France region.**

Catherine Pirard [00:41:07]

To get an initial understanding, the ideal is to have fifty or so children, fifty or so samples.

Mathilde [00:41:14]

**On Catherine Pirard's recommendation, to get a better estimate of the potential contamination in France of these new flame retardants we also collected samples in a less urbanised area than Paris. For example in the Basque country, where we organised a new collection.**

Mathilde [00:41:35]

Hello. Who am I collecting?

Parent 1 [00:41:38]

Ana, my daughter.

This is Ibai.

Mathilde [00:41:44]

So we have a sample of these two ladies. Thank you for taking part.

Mathilde [00:41:54]

**We went to various villages in the region to collect around fifty samples that we sent to Catherine Pirard.**

**Four months later, the scientist arranged to meet us at her laboratory at the C.H.U. in Liège, Belgium.**

Mathilde 42 12

**The analysis of the French children's urine had been completed, and the scientist already wanted to tell us about the results. She found them worrying.**

**Not only were all the children tested exposed to TDCPP, one of the new-generation phosphorus flame retardants, but above all, those from the Basque Country had abnormally high levels.**

Catherine Pirard [00:42:31]

We saw a big difference between the group of children from the Paris region and the group of Basque children. For the Basque children, the concentrations were much higher, 3 to 5 times higher than usual. So this is really a case of specific contamination, specific exposure of this group of children. There's probably another source of contamination, which could be the outside environment, air, soil, water, drinking water or surface water.

Mathilde [00:42:53]

So now, what would be interesting is to go and take samples?

Catherine Pirard [00:42:55]

Yes, take samples to see where this source of contamination comes from, this particular source of exposure, whether it’s in sediments or in river water. Probably in drinking water too.

Mathilde [00:43:05]

**The new generation of phosphorus flame retardants isn't just polluting our everyday objects like toys, but also the environment and, ultimately, our children.**

Mathilde 43 18

**We returned to the Basque country to identify the sources of contamination…such as drinking water.**

Mathilde 43 25

**Michel Botella is a local activist who has set up an association to protect rivers.**

**He has pointed out one river in particular, the Nivelle, which rises in the Basque mountains and supplies the region with drinking water.**

Michel Botella [00:43:41]

For example, between Saint-Pée-sur-Nivelle and Saint-Jean-de-Luz, there is obviously a drinking water supply for this population. It enters the networks and is then distributed. And here, for example, between Saint-Pée and Ascain, there are two water catchments on the river which are treated to make the water drinkable.

Mathilde [00:44:04]

**According to Michel Botella, these two catchment stations pump polluted water due to industrial activity and ageing wastewater treatment plants.**

Michel Botella [00:44:15]

The problem with treatment plants is that some don't have all the necessary filters. In the mountains, as in the lowlands, agrochemicals are still used. So the more villages there are, the more micropollutants are discharged into the environment. There's a lack of equipment, what we call water treatment technologies.

Mathilde [00:44:44]

**Thanks to Michel Botella's information, we are going to check whether the water in the Nivelle is contaminated by phosphorus flame retardants.**

Mathilde [00:44:54]

We're going to take a sample.

Mathilde [00:44:57]

**First of all, an initial sample near the banks and houses.**

**To avoid affecting the analyses, we used a treated glass container that doesn't contain any flame retardants.**

**We also took samples at the outlet of the water treatment plant indicated by Michel Botella.**

Mathilde [00:45:26]

Ok, I think we can go that way.

Mathilde 45 33

Wait, be careful, there are brambles everywhere.

Mathilde [00:45:38]

**It's impossible to get there from the road. We have to make our way along the opposite bank.**

Mathilde [00:45:49]

There are the plant employees watching us, so we'll try to hurry.

Mathilde [00:45:57]

I feel like I'm about to lose my footing. I'm going to swim there. Ok, I'm going to take a sample here.

Mathilde [00:46:08]

**On the other side, the treated water flows into the Nivelle.**

**We collected a sample to see if any phosphorus flame retardants had passed through the plant's filters.**

**We also visited private homes in the region to take samples of drinking water.**

**We sent all these samples to a laboratory specialising in water analysis.**

Mathilde 46 32

**A few weeks later, we received the results.**

**The samples revealed contamination with TDCPP, a new-generation phosphorus flame retardant found in the urine of Basque children. In France there are no water regulations for it.**

**Even in small doses TDCPP is an endocrine disruptor and it is suspected of being carcinogenic.**

Mathilde 46 59

**It is found in the River Nivelle, near the wastewater treatment plant, at a level of 0.057 microgrammes per litre….but also in the tap water of Saint Pée sur Nivelle, Ciboure and Saint Jean de Luz.**

Mathilde 47 13

**As a reminder, Basque children have five times more TDCPP in their bodies than children in the Ile de France region.**

Mathilde 47 22

**Back in the Basque country, we shared these results with Michel Botella, the Basque activist, and the parents of the children who had taken part in the study. To mark the occasion, they were holding a public information meeting that evening in the town hall in Saint-Jean-de-Luz.**

Parent 3 [00:47:41]

There's an effect on the health of children, there's a risk to their development, so we're going to have to take action.

Michel Botella [00:47:49]

The State, the administration, health, the DDTTN, the water agency…You know, there are administrations to control this. We're going to ask them: Where do you stand? What decisions have you taken? We're not going to let them go.

Parent 4 Peio [00:48:06]

My daughter and my nephews and nieces have been tested because I think it's important. We know that there are flame retardants in our children's urine. I’m not very happy, it's not very glorious. Thank you for the work of the whistleblowers.

Mathilde [00:48:27]

**We gave the individual results to the parents.**

Parent 5 [00:48:32]

The rate is awfully high.

Parent 6 [00:48:35]

I'm amazed, we really pay attention to our children's lifestyle.

Parent 7 [00:48:43]

We pay attention to everything, we don't have too many plastic toys. In fact, we're all in it together. Makes me a bit nervous.

Mathilde [00:48:58]

**The Basque Country Agglomeration agreed to meet with us. Emmanuel Alzurri, the councillor responsible for drinking water and natural environments, wanted to get to grips with our study.**

Emmanuel Alzurri [00:49:10]

Immediately, and from January, the conurbation, of course, Ifremer, the ARS, the Regional Health Agency, the Adour Garonne Water Agency and the University of Pau and the Pays de l'Adour are going to start a joint study to try and understand this phenomenon better and work on the subject of flame retardants, which is once again a subject that wasn't on our work table because it didn’t exist. As far as we know, there are no standards, no rules, no framework on this subject, either at national or European level.

Mathilde [00:49:41]

Are you going to take new samples?

Emmanuel Alzurri [00:49:44]

Yes, of course. All kinds of samples from all over the place. We need to try and understand where it's coming from, maybe isolate the source if it's a single source or the sources if there are several. It’s a tedious, scientific job, and the work that needs to be done should be thorough and methodical.

Martin [00:50:01]

**A few days after our revelations, the Basque parents contacted Catherine Pirard, the Belgian scientist. They are going to send new urine samples to expand the research.**

**Things are also advancing for the firefighters. One of their unions has filed a complaint against X for endangering the lives of others.**

**Stéphane Morizot, the firefighter suffering from cancer, has set up an association of sick firefighters.**

**He has joined forces with Tony Stefani, his American counterpart, to help the fight against chemicals.**

**In the United States, as in France, the fight against flame retardants is spreading.**