

A close-up photograph of a person's eye. A finger is shown inserting a contact lens into the eye. The image is overlaid with a semi-transparent blue filter. The word 'EUROMCONTACT' is centered over the eye, flanked by two white curved lines that resemble a stylized eye or a lens.

EUROMCONTACT

THE VOICE OF EUROPEAN
CONTACT LENS AND LENS CARE INDUSTRY
Economic and Social impact of total ban on
PFAS for the RGP contact lens sector

EUROMCONTACT survey 2022



Survey run from 22nd July 2022 to 1st September 2022

Focused on Eye Care Professionals

Survey circulated to ECOO and ECLSO members

ECOO – European Council of Optometrists and Opticians

ECLSO – European Contact Lens Society of Ophthalmologists

Impact of total ban on PFAS on Eye Care Professionals

Survey run from 22.07.22 to 01.09.22

- Practices located in EU-27, UK and CH
- Impact of total ban on PFAS:
 - . Turnover reduced by a minimum of 30% and up to 85%...
 - . Redundancy of staff ranging from 1/3 of the practice at minimum up
- European Council of Optometrists and Opticians : cover 150 000 ECP in the EU
- ECOO estimates: 1/3 of the 150 000 practitioners would be impacted

Impact of total ban on PFAS on RGP contact lens' wearers

Testimonials from Eye Care Professionals

Keratoconus Patients,
Patients with corneal graft
or other corneal scars
would be unable to work
or drive. Their quality of
life will be significantly
impacted...

Innovation and
technological progress
could never compensate
for the loss of this special
lens. The quality of life of
patients depends on these
lenses

The forced return to
glasses would have
dramatic consequences
such as reduced quality of
life, inability to work,
poorer social integration;
and for children in
orthokeratology, an
increase in myopia.

EUROMCONTACT surveys 2023



Survey to polymer manufacturers and RGP contact lenses manufacturers on industrial & environmental impacts of a PFAS ban

Survey run from 5th May 2023 to 1st June 2023
37 participants

Survey circulated to EUROMCONTACT/ EFCLIN members

EUROMCONTACT — European association of the contact lens and lens care manufacturers

EFCLIN — European Federation of the contact lens and IOL industries

Survey to Eye Care Professionals on potential PFAS ban and its impact on patients

Survey run from 23rd March 2023 to 30th May 2023
513 participants

Survey circulated to ECOO and ECLSO members

ECOO — European Council of Optometrists and Opticians

ECLSO — European Contact Lens Society of Ophthalmologists

Results of the survey to polymer manufacturers and RGP contact lenses manufacturers on industrial & environmental impacts of a PFAS ban

Economic impact of total ban on PFAS on RGP contact lenses manufacturers

Location of polymer & RGP contact lenses production



Most respondents are located **in Europe** (Spain, Italy, Switzerland, UK, Netherlands, Germany, Austria, Slovakia, Sweden, France, Croatia, Belgium)
Some are located **outside Europe** (USA, Japan, Israel...)

Employment and potential of job losses in Europe



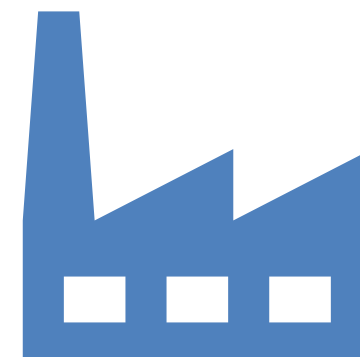
4000 jobs in Europe linked to the manufacturing of RGP contact lenses.
Assuming that a ban on PFAS means that RGP materials can no longer be manufactured, the impact in terms of the number of **job losses in Europe is estimated at 2 278.**

Impact on turnover



Assuming that a ban on PFAS means that RGP materials and all types of rigid lenses can no longer be manufactured, the **annual turnover of the companies would decrease by 54% on average.**

Number of companies in Europe



Estimated 60 RGP contact lens manufacturing laboratories impacted in the EU by the potential PFAS ban.
A total ban on PFAS would result in the **closure of most companies.**

Environmental impact of total ban on PFAS on RGP contact lenses

Waste generated

Annual estimate tonnage of PFAS waste and emissions generated from the manufacture of rigid buttons and rigid contact lenses for the EU market : 2 742 kg / year

Waste management

Today, waste containing PFAS is treated through :

- Incineration (55%)
- Landfilling (33%)
- Recycling (11%)

Alternatives to PFAS for RGP contact lenses

Regarding the availability, technical and economic feasibility, of alternatives to PFAS to manufacture RGP, would you say that...

- alternatives are already available on the market
- substitution is technically and economically feasible but more time is required to substitute
- substitution is not technically or economically feasible ?

Among the 37 surveyed companies, no one has alternatives already available on the market

Information on the status of R&D processes for finding suitable alternatives

R&D has been conducted but no alternatives which has same properties as PFAS has been found. The unique characteristics of fluoroacrylates as admixtures in RGP polymers cannot be replaced equivalently. Approximately, other material formulations can be explored with an even higher siloxane and alkyl acrylate content. There will be more lens deposits and more hygienic user problems.

The likelihood to find an alternative is considered very low.

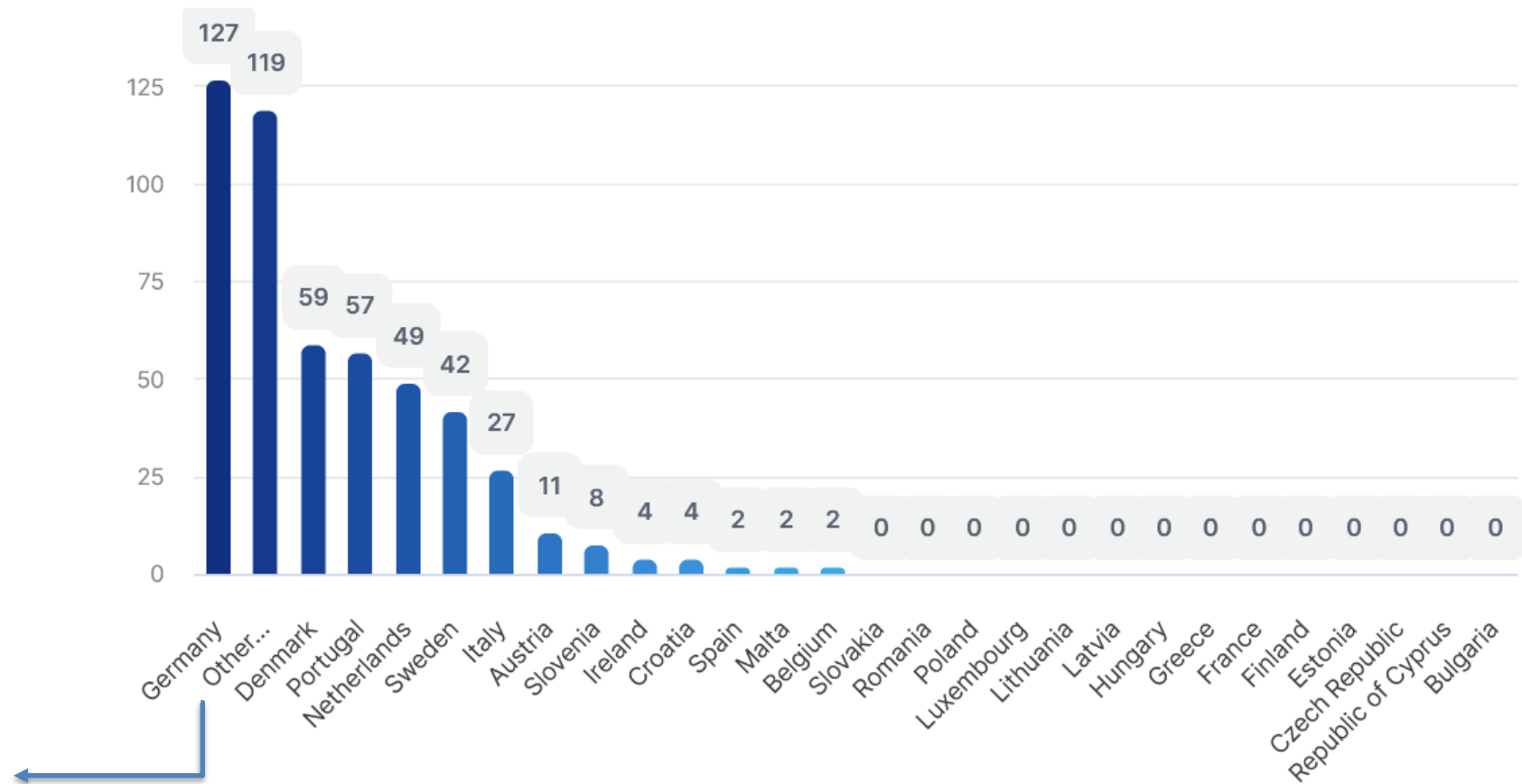
If successful, the R&D process would in any case be extensive : 1. Monomer synthesis – 2. Polymer development – 3. Clinical trials – 4. Material regulatory testing, clinical work and approvals – 5. Customer regulatory approvals (MDR) – Additional clinical work.

The majority of respondents (53%) considers that it would take **around 10 years only to obtain regulatory approval** to market your lens designs in new, PFAS-free materials

Outcome of the survey to Eye Care Professionals on potential PFAS ban
and its impact on patient

Profile of respondents

Where is your practice located ?

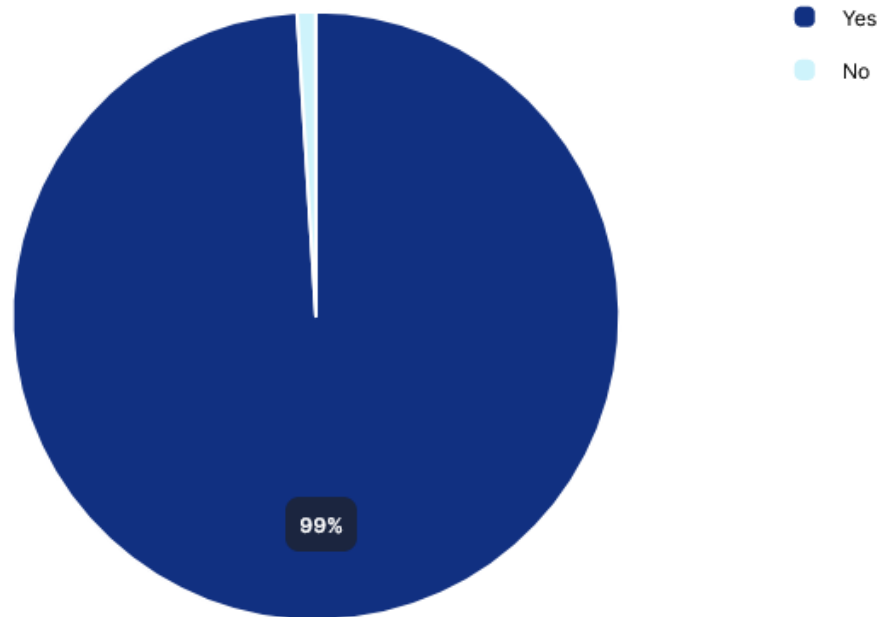


UK : 92

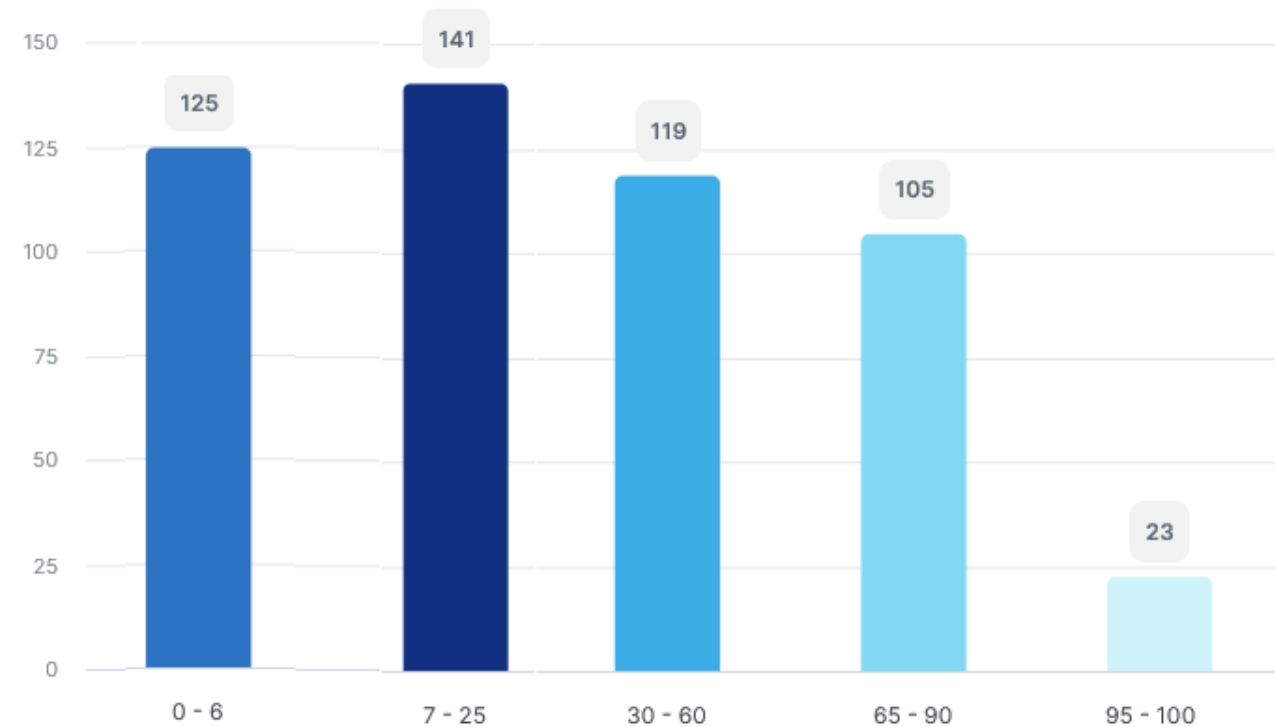
Switzerland : 26

Profile of respondents

Does your practice supply and fit contact lenses ?



Of your patients that use contact lenses, what is the percentage using RGP contact lenses in your practice (including scleral, orthokeratology, keratoconus, hybrid lenses etc) ?



Alternative treatment for patients

If RGP contact lenses were no longer available, approximately what percentage of your current RGP patients :

- could you no longer treat ?  Average : 52% of patients

What conditions would you no longer be able to treat in your patients if RGP contact lenses were no longer available?

RÉPONSE	RÉPONSES	RATIO
Irregular corneas	467	91%
Keratoconus	459	89.5%
High astigmatism	338	65.9%

- would be treated with alternative, but less effective, modalities ?  Average : 29% of patients

81% of RGP patients would be no longer treated or treated with less effective alternatives

Impact on the quality of life of patients

What do you anticipate to be the impact for patients who cannot be treated by means of RGP contact lenses due to a total ban on PFAS?

Please estimate what percentage of your current RGP patients would have a visual acuity less than 6/12 (20/40) in both eyes if you could only use soft contact lenses or glasses to correct their vision.

RÉPONSE	RÉPONSES	RATIO
Reduced quality of life	482	94%
Very poor vision	458	89.3%
Inability to drive	400	78%
Inability to work	379	73.9%
Increase in myopia	266	51.9%
Other...	42	8.2%

Average : 44% of current RGP patients would have a visual acuity less than 6/12 in both eyes

Impact on the quality of life of patients

What, if any, specific health and safety risks to patients do you think would arise if you can no longer treat them with RGP lenses?

RÉPONSE	RÉPONSES	RATIO
Patients will continue to use old/out of date medical devices	386	75.2%
Patients will have no alternative solution resulting in deteriorating eye health	379	73.9%
Patients will source unregulated devices from outside the EU	338	65.9%
Other...	24	4.7%
None	22	4.3%

Impact of time-limited derogation on RGP prescription – shortage risk for patients in the short term

If there was uncertainty over the future of rigid contact lenses due to the potential PFAS ban, would this make you less likely to prescribe rigid contact lenses?

