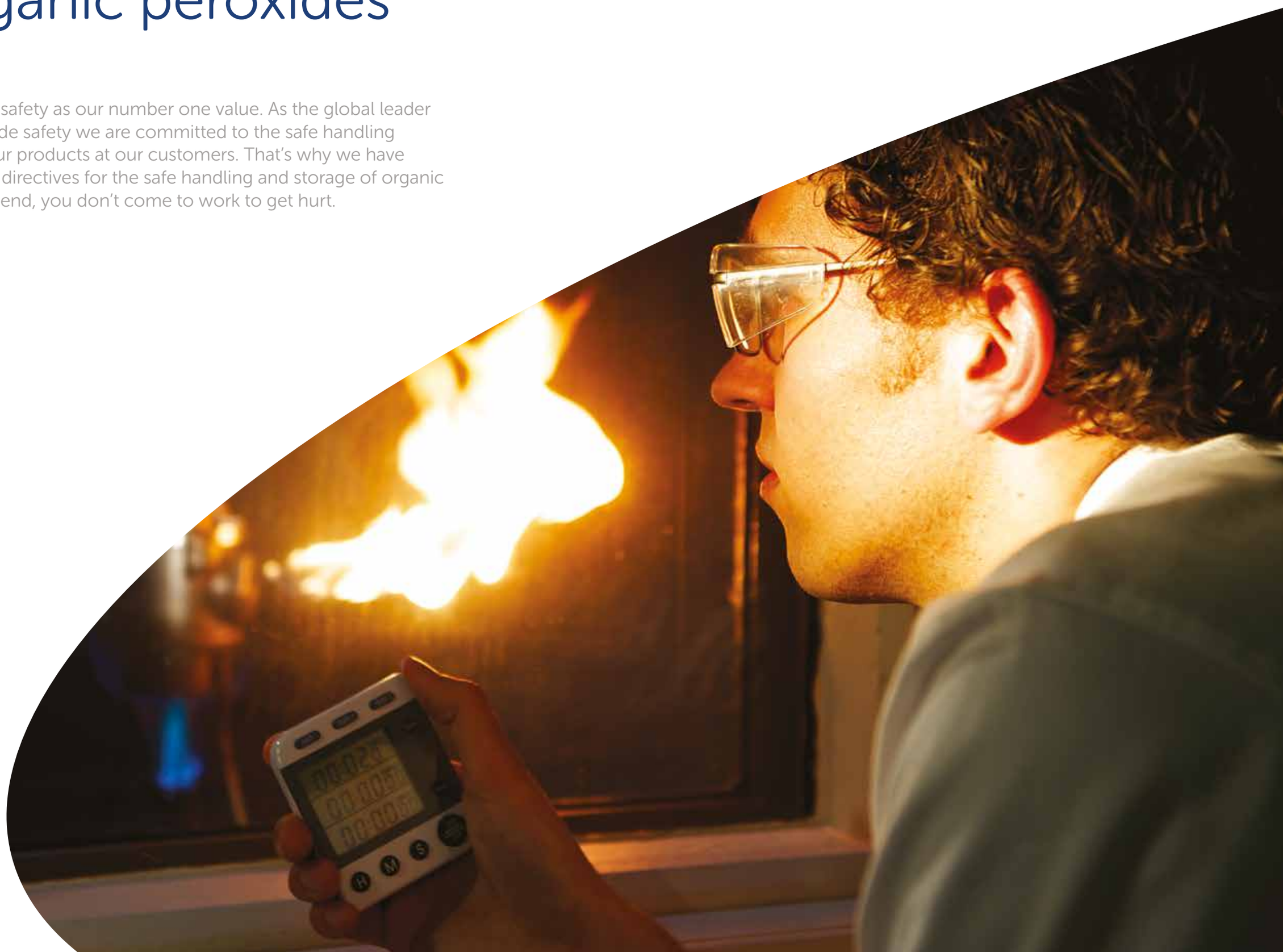
Be Safe

Directives for the safe handling
and storage of organic peroxides

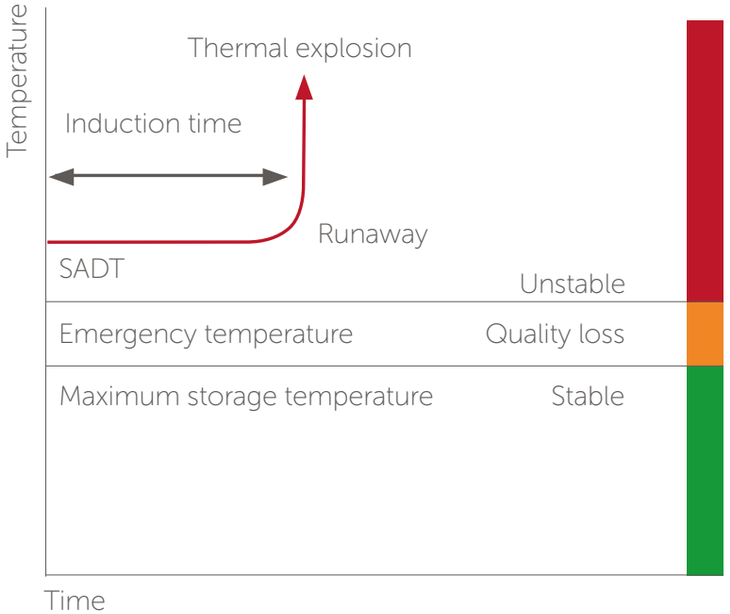
Nouryon

Hazardous properties of organic peroxides

We always place safety as our number one value. As the global leader in organic peroxide safety we are committed to the safe handling and storage of our products at our customers. That's why we have developed these directives for the safe handling and storage of organic peroxides. In the end, you don't come to work to get hurt.



Thermal stability of organic peroxides



Watch our video on
Safety Services organic peroxides

Thermal stability

Organic peroxides are in principle thermally unstable compounds. The thermal stability of an organic peroxide is characterized by its Self-Accelerating Decomposition Temperature (SADT). The SADT is the lowest temperature at which the peroxide will decompose in its original packaging via a so-called runaway reaction. This runaway reaction can be, dependent on the circumstances, a fierce decomposition, followed by self-ignition of the vapors or even an explosion.

To prevent decomposition from occurring, always ship and store organic peroxides below the T_s max. The T_s max. is the maximum storage temperature at which the product is stable and quality loss will be minimal.

The T_s max. used for peroxides in the thermoset industry is 25°C unless otherwise specified on the packaging and Safety Data Sheet (SDS). A minimum storage temperature (T_s min.) is given if phase separation, crystallization or solidification of the product is known to occur below the temperature indicated. Also for safety reasons we recommend you store the product above the T_s min. indicated. If a product freezes or separates, please contact Nouryon.

Contamination

Contamination of a peroxide with for instance metals, acid, alkalis or accelerators lowers the stability and consequently the SADT of the peroxide. This can result in a runaway reaction at ambient temperatures. Especially MEKP formulations are very sensitive for contamination.

Flammability

Organic peroxides are combustible substances. The flash point of a peroxide is, with a few exceptions, above its SADT. Exceptions are Trigonox® B and peroxide dilutions in e.g. ethylacetate and butylacetate. Most peroxides are difficult to ignite. However, once ignited they burn fiercely.

Mechanical sensitivity

Most commercially available peroxide formulations show a low degree of mechanical sensitivity. Rough handling, severe friction or heavy impact should always be avoided.

Physiological properties

Please refer to our SDSs which are available at polymerchemistry.nouryon.com

Ingestion and inhalation

Most peroxides are moderately toxic.

Contact with the eyes

Most, especially liquid, organic peroxides are very dangerous in contact with the eyes. Exposure may lead to blindness.

Contact with the skin

The corrosive character of some peroxides may lead to skin irritation.

Packaging labels

The hazardous properties of organic peroxides are mentioned on the packaging in the form of hazard labels and hazard & precautionary statements. These statements must be followed at all times.

Do's

- Read the safety instructions
- Store in a cool room away from direct sunlight and separate from other chemicals at max. 25°C or at the maximum temperature as mentioned on the packaging
- Leave product in the original packaging and close the packaging after use
- Use only materials which are compatible with peroxides for weighing and handling
- Wear safety goggles
- Wear gloves
- Use explosion proof electrical equipment

Don'ts

- Never mix peroxides with accelerators
- Do not mix methyl ethyl ketone peroxides with acetone
- Do not allow contamination with dust or other chemical substances (keep packagings closed)
- Do not allow accumulation of spilled peroxide in spill trays
- Do not return excess product into original container
- Never confine the peroxide; tightly closed tanks, vessels and dosing lines should be avoided
- Never heat peroxides
- Do not place near open fire or other sources of ignition
- Do not smoke
- Never handle peroxides in a rough way; avoid friction and impact forces
- Do not store the product below the minimum storage temperature

First aid in case of:

Ingestion

Seek medical attention immediately.
DO NOT induce vomiting because of risk of aspiration.

Skin contact

Flush with ample water.
Seek medical attention after significant exposure.

In case of fire

Fight a small fire with powder or carbon dioxide and apply water to prevent re-ignition. Alert the fire department.

In case of spillage

Liquids: absorb with inert material, e.g. vermicullite and add water.
Pastes: take up with a polyethylene spatula and add water. Flush the remainder with water.
Solids: collect spilled material and place in a clean plastic bucket with a loose fitting lid and add water.
Flush the remainder with water.
Remove the waste to a safe place. Arrange disposal as soon as possible. The waste should NOT be confined.

Inhalation

Seek medical attention.
Move to fresh air, rest, half upright position, loosen clothing.

Eye contact

Seek medical attention immediately.
Flush wiht water for at least 10 minutes.

Storage conditions:

Keep containers tightly closed in a well ventilated place.
Ts max. 25°C or as indicated on the labels. Keep away from reducing agents e.g. accelerators. Never weigh out in the storage room.

Additional information

Product Data Sheets (PDS) and Safety Data Sheets (SDS) are available at nouryon.com.
On request we also provide specific publications on the use and the safe handling and storage of our products.

In case of emergency call the following telephone number:
+31 (0)570 679 211 or
+1 800 424 9300

Contact us

For product inquiry and ordering information, please contact your Nouryon account manager or regional sales office.

Americas

US and other countries
100 Matsonford Road
Building 5, Suite 550
Radnor, PA 19087
USA
T +1 800 828 7929 (US only)
E polymer.amer@nouryon.com

Mexico
Av. Morelos No. 49
Col. Tecamachalco
Los Reyes La Paz Estado de Mexico
C.P. 56500 Mexico
T +52 55 5858 0700
E polymer.mx@nouryon.com

Brazil
Rodavia Nouryon no. 707
Portão A – Planta C
Bairro São Roque da Chave
13295-000 Itupeva - São Paulo
Brazil
T +55 11 4591 8800
E polymer.sa@nouryon.com

Europe, India, Middle East and Africa

France, Italy, Spain and Portugal
Autovia de Castelldefels, km 4.65
08820 El Prat de Llobregat
Barcelona
Spain
T +34 933 741991
E polymer.es@nouryon.com

India
North Block 801, Empire Tower,
Reliable Cloud City Campus,
Off Thane – Belapur Road
Airoli, Navi Mumbai - 400708
India
T +91(0) 22 68426700
E polymer.emeia@nouryon.com

Middle East
Nouryon Saudi Arabia
King Saud Road, Kanoo Tower
P.O. Box 37
31411 Dammam
Saudi Arabia
T + 96 61383 46526
E communications.me@nouryon.com

Russia and CIS
Smolnaya Str., 24D,
Commercial Tower Meridian
125445 Moscow
Russia
T +7 495 766 16 06
E info.moscow@nouryon.com

Other countries
Zutphenseweg 10
7418 AJ Deventer
The Netherlands
E polymer.emeia@nouryon.com

Asia Pacific
Room 2501 & 26F, Building A
Caohejing Center
No. 1520 Gumei Road, Xuhui District
Shanghai 200233
P.R. China
T +86 21 2289 1000
E polymer.apac@nouryon.com

Additional information
Product Data Sheets (PDS) and Safety Data Sheets (SDS) for our polymerization initiators are available at nouryon.com

Nouryon