



ORTHO-PHENYLPHENOL (OPP)

Other Names	o-pp; OPP 2-Biphenyl (1,1-biphenyl)-2-ol
CAS Number	Substance
90-43-7	Ortho-phenylphenol
May Be Found In	<ul style="list-style-type: none">LeatherDyed synthetic fibers

Ortho-Phenylphenol (OPP) is an organic chemical that is a white, buff, crystalline (sand-like) solid. OPP has biocidal properties, making it useful for various preservation applications.

Uses in the Supply Chain

Leathers: Due to its preservative properties, OPP is used as an auxiliary to protect leather through various production stages, from hide to finished good

Textiles: OPP may be used in textile material production as a dye carrier, especially for synthetic fibers.

Why OPP is Restricted

- Many brands and several voluntary standards limit concentrations of OPP in finished goods, especially in textile articles since there are known safer dye carrier alternatives. In leather, OPP is still a preferred preservative for use during wet blue production, but it should be carefully controlled to minimize final concentrations.
- OPP has been found to cause skin changes (discoloration) and irritation to the mucous membranes, particularly of the eyes.¹
- Chemical hazard information for many chemicals can be found at the following external databases:
 - GESTIS Substance Database: [Here \(external link\)](#)
 - US National Library of Medicine: [Here \(external link\)](#)
 - US OSHA Occupational Chemical Database: [Here \(external link\)](#)

Sourcing Compliant Materials from Your Suppliers

- Contact your suppliers and explain that you require their manufactured materials to be compliant with the current AFIRM RSL limits.²
- Require suppliers to submit a confirmation of material compliance or a test report from a third-party laboratory.
- When materials are received, consider performing risk-based testing to ensure the current AFIRM RSL limit is met.
- Share this information sheet with your material suppliers so they have full visibility and understand your sourcing requirements.
- Pay special attention to suppliers of leather and synthetic fibers, as OPP is often an active ingredient in preserving agents and dye carriers.

Sourcing Compliant Formulations from Your Chemical Suppliers

In large part, there is no “compliant formulation” unless it does not contain OPP as part of the preservation treatment. Refer to positive lists available through leather and textile communities to research alternate formulations. In general, for all formulations:

- Request SDS documentation that meets current GHS requirements.
- Contact your suppliers and explain that you require formulations to be compliant with the current ZDHC MRSL limits whenever applicable.³



Chemical Information Sheet

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- Discuss with your chemical supplier whether any safer alternatives are available that are suitable substitutes for your production needs.
- Prior to procuring any formulation, the chemical properties must be reviewed to ensure that proper protective equipment, chemical storage facilities, facility engineering controls, and associated treatment/disposal facilities are appropriate for the chemical(s).

Safer Alternatives

As each apparel or footwear brand may handle preservation chemistries differently, the starting point is to engage with the specific brand to gather details about their individual requirements. There are alternatives available for OPP, depending on the preservation needed and the biology of the affected material. Each application is unique and requires a review of efficacy of the treatment.

- The proper (minimum effective) amount of any biocide needs to be determined to avoid over-application of this class of chemistry.
- Specific considerations of wastewater treatment need to be made any time a biocidal chemistry is in use, to avoid release into the environment.

Additional Information

Visit ECHA's Candidate List of substances of very high concern to view dossiers for many restricted substances

<https://echa.europa.eu/candidate-list-table>.

OPP is a well-known preserving agent in the leather industry that is listed in the REACH Biocidal Product Rule (BPR).

In general, a single preservative such as OPP should not be used alone for extended periods of time. This type of use can lead to a buildup of resistance which makes the treatment ineffective.

References

¹ Institute for Occupational Safety and Health of the German Social Accident Insurance. Biphenyl-2-ol profile <https://gestis-database.dguv.de/data?name=020480>

² Apparel and Footwear International RSL Management Group Restricted Substances List (AFIRM RSL) <http://afirm-group.com/afirm-rsl/>

³ ZDHC Manufacturing Restricted Substances List (ZDHC MRSL) https://www.roadmaptozero.com/mrsl_online/