

P24

Manual screen reclamation

COSHH essentials for printers



This information is intended to help employers in the printing industry comply with the requirements of the Control of Substances

Hazardous to Health Regulations 2002 (COSHH), as amended, to control exposure to chemicals and protect workers' health.

It is also useful for trade union safety representatives.

This sheet provides good practice for ink removal and screen reclamation in an extracted wash-out booth.

It is important to follow all the points or use equally effective measures.

Main points

- Dermatitis is common in printing. This is caused by frequent contact with chemicals used in printing processes.
- Minimise skin contact with inks and cleaning chemicals.
- Solvent-based cleaners (eg solvent naphtha) can be absorbed through the skin.
- Electrical equipment must be designed to work safely in a wet environment.

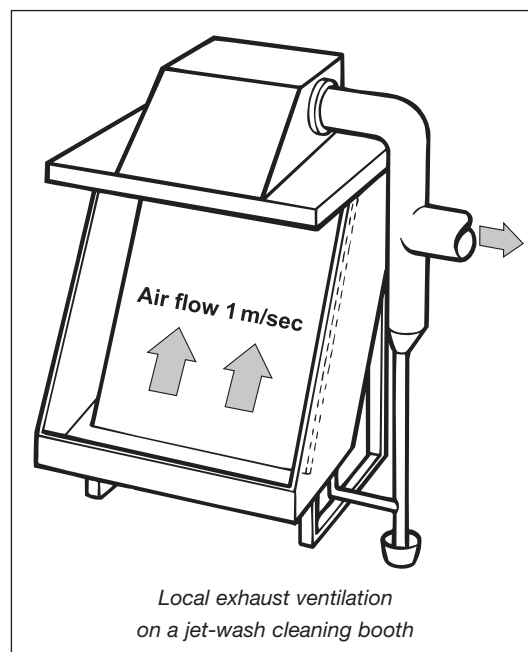
Screen printing

Access and premises

- ✓ Only allow authorised staff access to the cleaning area.
- ✓ Provide good facilities for washing, skin care, and for taking refreshments.

Equipment

- ✓ Could you install an automated screen cleaner?
- ✓ Use water-borne products wherever possible.
- ✓ Never jet-wash a screen that is wet with solvent. Squeegee off the excess first.
- ✓ Provide a good standard of general ventilation. Use powered wall- or window-mounted fans to supply fresh air - five to ten air changes per hour, with a through draught.
- ✓ Minimise the risk of skin contact with ink - scrape parts as clean as possible before manual cleaning.
- ✓ Use the jet washer at the lowest effective water pressure.
- ✓ Provide chemical-resistant gloves.
- ✓ Use an extracted wash-out booth. You normally need extraction at the top and bottom of the booth, with splash boards - see illustration.
- ✓ The booth should be large enough to hold the screen, and allow cleaning without splashback into the cleaning area.
- ✓ Locate the booth away from doors, windows and walkways. Draughts may interfere with the extraction.
- ✓ Fit a manometer, pressure gauge or tell-tale to show that extraction is working.
- ✓ Discharge extracted air to a safe place in the open air, away from doors, windows and air inlets.
- ✓ Make sure that the unit drains properly and that solid wastes are filtered out.



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- ✓ For smaller screens, you need an airflow between 1 and 2.5 metres per second into the booth.
 - ✓ For larger screens you may need to use respiratory protective equipment (RPE) if the screens will not fit into an extraction booth.

Special care

- ✓ Skin contact with UV-curable inks can cause dermatitis.
- ✓ Screen repair products containing isocyanates can cause dermatitis and asthma.

Maintenance, examination and testing

- ✓ Follow the instructions in the maintenance manual - keep equipment in effective and efficient working order.
- ✓ If the machine extraction stops, or is faulty, get it repaired straight away.
- ✓ Don't alter, add or remove extraction without specialist advice.
- ✓ Noisy or vibrating fans indicate a problem. Do repairs as necessary.
- ✓ At least once a week, check that the extraction system and gauges work properly.
- ✓ You need to know the manufacturer's performance specifications to know if extraction is working properly.
- ✓ If this information isn't available, hire a competent ventilation engineer to determine the performance needed for effective control.
- ✓ The engineer's report must show the target extraction rates.
- ✓ Keep this information in your testing logbook.
- ✓ Get a competent ventilation engineer to examine the extraction thoroughly and test its performance at least once every 14 months - see HSE publication HSG54.
- ✓ Keep records of all examinations and tests for at least five years.
- ✓ Ensure users examine their RPE thoroughly and test that it works properly every time they use it.

Personal protective equipment (PPE)

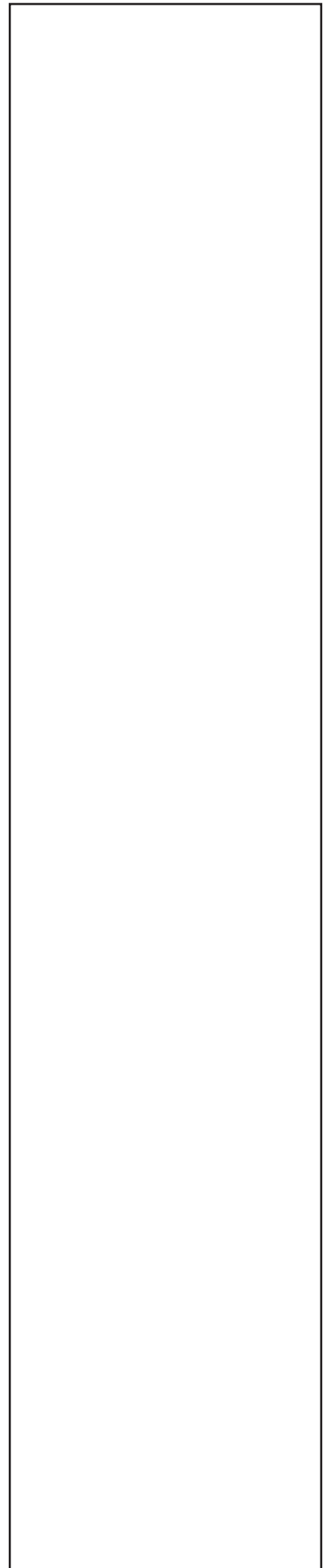
- ✓ Provide storage for PPE to prevent damage or contamination when not in use.

Respiratory protective equipment (RPE)

- ✓ RPE may be needed if the extraction cannot control the mists from washing.
- ✓ Provide a half-mask respirator and a combined organic vapour/particulate filter with an assigned protection factor (APF) of 10 or more. See sheet P48.

Gloves

- ✓ Use chemical resistant gloves – nitrile gloves 0.4 mm thick are acceptable. These are suitable for splash protection only, for no more than 30 minutes.
- ✓ Ensure that workers wear them.
- ✓ Avoid wiping screens by hand.
- ✓ Ensure workers remove and discard damaged gloves.



Other protective equipment

- ✓ Face visor.
- ✓ Waterproof footwear.
- ✓ Impervious apron.
- ✓ Cotton overalls to minimise clothing contamination.
- ✓ Change contaminated overalls immediately and ensure they are laundered before reuse.

Skin management

- ✓ Skin contact with the chemicals may cause dermatitis.

Skin care

- ✓ Keep hands clean and in good condition.
- ✓ Using pre-work creams helps make removing chemicals easier. However, pre-work creams should not be seen as a substitute for gloves.
- ✓ If you need to use hand cleansers to remove ink, ensure that the cleanser is rinsed off afterwards.
- ✓ Provide after-work creams (moisturisers) to replace skin oils.
- ✓ Never allow solvents to be used for cleaning skin.

Skin surveillance/checks

- ✓ Consider seeking advice from an occupational health professional.
- ✓ Appoint a responsible person to carry out periodic skin inspections and record the findings.

Cleaning and housekeeping

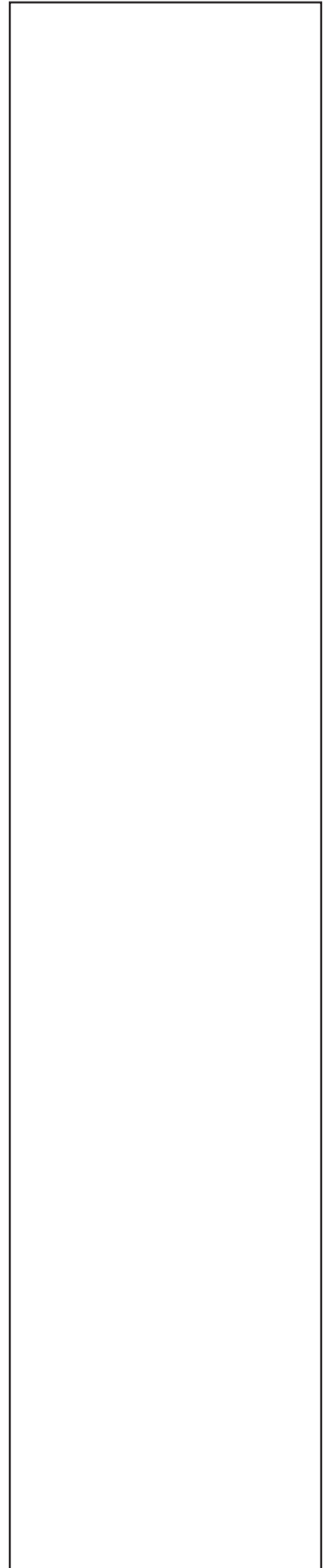
- ✓ Clean the workroom at least once a week.
- ✓ Handle containers with care and replace caps.
- ✓ Store containers in a safe place, securely closed.
- ✓ Clean up spills immediately. Use new nitrile gloves 0.4 mm thick. Throw away gloves once used.
- ✓ Keep inks, solvents and solid wastes out of the drains.
- ✓ Store contaminated cloths, wipes and gloves in fire-resisting, closed, metal containers. Dispose of them as hazardous waste.
- ✓ Dispose of waste solvent, ink and empty containers as hazardous waste.
- ✓ Use a contract laundry or a suitable equivalent to wash work clothing. Don't do this at home.

Training and supervision

- ✓ Working in the right way is important for exposure control. Train and supervise workers - see details in sheet P0.

Environmental guidelines

Releases into the air may be regulated within the Pollution Prevention and Control (PPC) framework. Your local authority or the Environment Agency will tell you if PPC applies to your company, and give advice on air cleaning and discharging emissions. In Scotland, consult the



Scottish Environment Protection Agency (SEPA). For more information, see <http://www.environment-agency.gov.uk/netregs/sectors/>.

Further information

- *The printer's guide to health and safety* (Second edition)
HSE Books 2002 ISBN 0 7176 2267 3
- *Skin problems in the printing industry* Leaflet IACL101(rev1)
HSE Books 2002 (single copy free or priced packs of 15
ISBN 0 7176 2322 X)
- *General ventilation in the workplace: Guidance for employers* HSG202
HSE Books 2000 ISBN 0 7176 1793 9
- *Maintenance, examination and testing of local exhaust ventilation*
HSG54 (Second edition) HSE Books 1998 ISBN 0 7176 1485 9
- *Respiratory protective equipment at work: A practical guide* HSG53
(Third edition) HSE Books 2005 ISBN 0 7176 2904 X

Useful links

Contact the British Occupational Hygiene Society (BOHS) on 01332 298101 or at www.bohs.org/ for lists of qualified hygienists who can help you.

Look in Yellow Pages under 'Health and safety consultants' and 'Health authorities and services' for occupational physicians (doctors and nurses). Also see www.nhsplus.nhs.uk/.

Employee checklist

- Is the workroom ventilation switched on and working properly?
- Is the machine extraction switched on and working properly?
- Look for signs of wear and damage.
- If you find any problems, tell your supervisor or safety/employee representative. Don't just carry on working.
- Wear your protective equipment as directed.
- Check your respiratory protective equipment works properly every time you use it.
- Throw away protective gloves at the end of the job.
- Don't use damaged gloves.
- Never use solvents to clean your hands - only use proprietary skin cleansers.
- Use skin creams provided, as instructed.
- Check your skin regularly for dryness or soreness - tell your supervisor if these appear.
- Wash your hands before eating and drinking and before you leave work.
- Don't smoke in the work area.

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance as illustrating good practice.