

Research and Development

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Summary of results of corrosion and material compatibility tests with mikrozid® universal wipes

Summary

The material compatibility of the impregnating liquid of mikrozid® universal wipes (hereinafter referred as mikrozid® universal) is very good to good with the relevant tested metals, plastics and elastomers.

At the usually brief contact of the product during the application no incompatibilities with the released materials are expected. Therefore, with a reference to material compatibility mikrozid® universal is very well suited for its intended use: surface disinfection.

Introduction

mikrozid® universal wipes are ready-to-use wipes impregnated with alcoholic solution used for rapid disinfection and cleaning of surfaces.

In order to ensure compatibility with various materials, a series of different metals, plastics and elastomers were tested according to a standardised procedure. The test methods are designed in such a way that the normal contact times are substantially exceeded and thus a reliable assessment is also obtained for frequent applications.

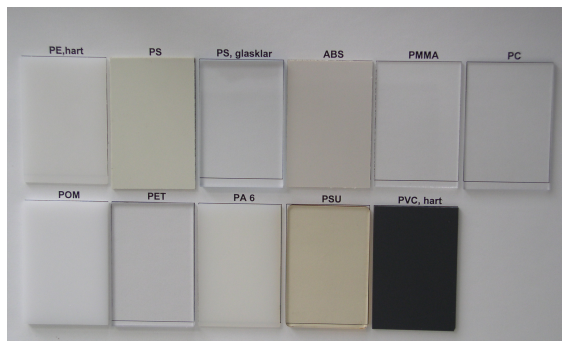
Test materials

Metals



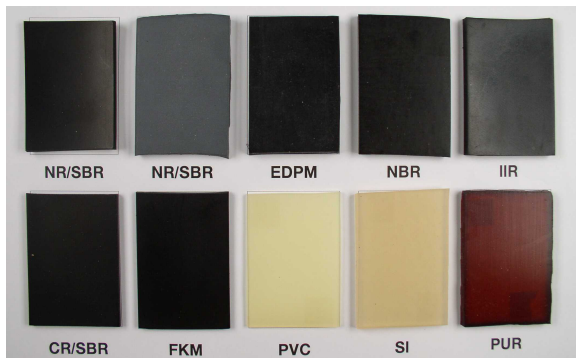
Stainless steel (V2A)
Copper
Brass
Zinc
Iron (tool steel)
Aluminium

Plastics



PE hard	Polyethylene, hard
PS	Polystyrene
PS crystal-clear	Polystyrene, crystal-clear
ABS	Acrylonitrile-butadiene-styrene-copolymer
PMMA	Polymethyl methacrylate
PC	Polycarbonate
POM	Polyoxymethylene
PET	Polyethylene terephthalate
PA 6	Polyamide 6
PSU	Polysulfone
PVC hard	Polyvinylchloride, hard

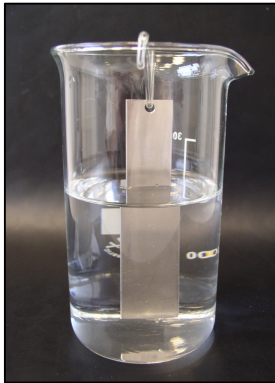
Elastomers



NR/SBR	Natural rubber/ styrene-butadiene rubber
EPDM	Ethylene propylene diene monomer
NBR	Nitrile butadiene rubber
IIR	Isobutene-isoprene rubber
CR/SBR	Chloroprene rubber
FKM	Fluorinated rubber
PVC soft	Polyvinyl chloride, soft
SI	Polymethyl siloxane
PUR	Polyurethane

Test methods

Corrosion test



Standard test pieces (20 mm x 100 mm x 1 mm or 2 mm) with a total surface area of 0.00424 m² were 60% immersed in mikrozyd® universal for 24 hours at a temperature of 35°C. The weight difference (increase/decrease) in g/m² was determined and the test metals and disinfection solutions were subjected to visual examination.

Material compatibility test

Standard test pieces (40 mm x 60 mm) were placed in mikrozyd® universal for 14 days at a temperature of 40°C. The weight difference (swelling/shrinkage) was determined in % and the test metals and disinfection solutions were subjected to visual examination.



Results

Metals

mikrozyd® universal displays a very good compatibility with Stainless steel, Copper, Brass and Aluminium. The product is incompatible with Zinc and tool steel. These metals are not commonly used for the intended application.

Thus, the corrosion behavior in relation to the respective metals for the intended use is very good.

Plastics

mikrozid® universal displays with the tested plastics only very low swelling values. The swelling behaviour displayed by polyamide 6 (PA6) is typical of this material. The plastics were visually without any changes.

In summary, it can be stated that mikrozid® universal displays a very good material compatibility with the tested plastics.

Elastomers

The material compatibility with NR/SBR, EPDM, NBR, IIR, CR/SBR, FKM, PVC soft and SI is very good to good, the swelling values are low, and there are none or only minor visual changes.

NR/SBR grey and PUR display slightly higher swelling values, but still show a good material compatibility with mikrozid® universal. Both materials were visually with none or only minor changes.

In summary it can be stated that considering the actual short contact times mikrozid® displays a very good to good material compatibility with the tested elastomers.

It should be noted that different qualities of elastomer materials of the same chemical structure can differ considerably in their material compatibility properties. Consequently, general statements about certain types of elastomers can be made only with some limitations.

Norderstedt, 30.03.2016

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