Product Safety Assessment

ICOLARIN™ HC Series Dyes


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Names
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- ICOLARIN HC 018 Giallo Dye
- ICOLARIN HC 021 Bordo Dye
- ICOLARIN HC 038 Bruno Dye
- ICOLARIN HC 039 Blu Dye
- ICOLARIN HC 040 Rosso Dye
- ICOLARIN HC 041 Giallo Dye

Product Overview
- ICOLARIN HC Series dyes are liquids with a characteristic odor. These dyes are available in seven different colors and are compatible with water-based products, as well as with solvent-based or solvent-free products. For further details, see Product Description.
- ICOLARIN HC Series dyes are used to color polyurethane resins used in the manufacture of leather, artificial leather and textiles. For further details, see Product Uses.
- Exposure can occur either in facilities that manufacture ICOLARIN HC Series dyes or in the various industrial or manufacturing facilities that use these products. Dow does not sell these products for direct consumer use, but they are used at 1 to 3 percent to color polyurethane resins in leather, artificial leather and textiles with which consumers may come into contact. For further details, see Exposure Potential.
- Direct eye and skin contact with liquid formulations may cause slight to severe irritation. Prolonged skin exposure may result in drying of the skin and dermatitis. Inhalation of high concentrations of vapor or mist from solvents may cause irritation of the nose, throat, and lungs, as well as dizziness, headache, nausea, vomiting, diarrhea, anesthetic effects, and drowsiness. Ingestion may cause headache, dizziness, gastrointestinal effects, abdominal pain, respiratory effects, central nervous system effects, or even death. For further details, see Health Information.
- The solvents in ICOLARIN HC Series dyes are biodegradable, have a low to moderate potential for bioconcentration, and range from practically nontoxic to highly toxic to aquatic organisms on an acute basis. The main dye components are expected to slowly degrade through chemical and biological processes, have a low to moderate potential to accumulate in the food chain, and are expected to be moderately to highly toxic to aquatic organisms. For further details, see Environmental Information.
- ICOLARIN HC Series dyes are considered stable under recommended storage and normal use conditions. Avoid contact with strong acids and oxidizing agents. For further details, see Physical Hazard Information.

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Manufacture of Product
- Location – ICOLARIN™ HC Series dyes are produced in locations and quantities necessary to meet market demand
- Process – These materials are produced using proprietary chemistries, processes, and blending techniques.

Product Description
ICOLARIN™ HC Series dyes are organic pigments dissolved in one of several solvents or solvent blends. They have a characteristic odor defined mostly by the solvent used. Solvents vary from ethoxylated alcohols to petroleum distillates or their mixtures. ICOLARIN HC Series dyes are compatible with water-based products, as well as with solvent-based or solvent-free products. These products include the pigments indicated below:

<table>
<thead>
<tr>
<th>ICOLARIN HC 041 Giallo Dye</th>
<th>Solvent Yellow 146</th>
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</thead>
<tbody>
<tr>
<td>ICOLARIN HC 018 Giallo Dye</td>
<td>Acid Yellow 204</td>
</tr>
<tr>
<td>ICOLARIN HC 040 Rosso Dye</td>
<td>Acid Red 357</td>
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<tr>
<td>ICOLARIN HC 021 Bordo Dye</td>
<td>Acid Violet 90</td>
</tr>
<tr>
<td>ICOLARIN HC 038 Bruno Dye</td>
<td>Acid Brown 355</td>
</tr>
<tr>
<td>ICOLARIN HC 023 Nero Dye</td>
<td>Acid Black 194</td>
</tr>
<tr>
<td>ICOLARIN HC 039 Blu Dye</td>
<td>Anthraquinone dye</td>
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</tbody>
</table>

Product Uses
ICOLARIN™ HC Series dyes are used to color polyurethane resins used in leather, artificial leather and textiles. They are used typically at the 1 to 3 percent level in resins and offer good resistance to light, heat and leaching. These products may also be used with additional pigments to obtain specific effects.

Exposure Potential
ICOLARIN™ HC Series dyes are used in the formulation of a variety of industrial and consumer products. Based on the uses for this product, the public could be exposed through:
- Workplace exposure – Exposure can occur either in facilities that manufacture or formulate ICOLARIN HC Series dyes or in the various industrial facilities that use these products. Those working with these products in manufacturing operations could be exposed during maintenance, sampling, testing, or other procedures. Each manufacturing facility should have a thorough training program for employees and appropriate work processes, ventilation, and safety equipment in place to prevent exposure. See Health Information.
- Consumer exposure to products containing ICOLARIN HC Series dyes – Dow does not sell these products for direct consumer use, but they are used at 1 to 3 percent to color polyurethane resins used in leather, artificial leather and textiles with which consumers may come into contact. Once introduced to the artificial leather or textiles, the color is dried and bound to the materials and for this reason, is not considered to present a risk to consumers. See Health Information.
- Environmental releases – Engineering controls in facilities that manufacture or formulate ICOLARIN HC Series dyes should be designed to limit environmental exposure. In the event of a spill, the focus should be on containing the spill to prevent contamination of soil, surface water, or groundwater. For small spills, these products should be absorbed with inert materials such as sand. Respiratory protection is necessary for cleaning up spills and leaks. If released to the environment, the dye components are expected to bind to soils, suspended solids, and sediments, while the solvents are likely to biodegrade in soil or water environments, including biological wastewater-treatment facilities. See Environmental, Health, and Physical Hazard Information.
- Large release – Industrial spills or releases are infrequent and generally contained. If a large spill does occur, the products should be captured, collected, and reprocessed or disposed of according to applicable governmental regulations. Certified respiratory protection equipment is recommended for emergency work. All sources of ignition must be immediately eliminated. Only explosion-proof equipment should be used; Containers and handling equipment should be grounded and bonded. See Environmental, Health, and Physical Hazard Information.

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In case of fire – Unnecessary entry into the area should be denied and the use of unmanned hose holders should be considered. Water spray or fog, carbon-dioxide or dry-chemical extinguishers, or foam should be used to fight the fire. Use of a direct water stream may spread the fire. Irritating and highly toxic gases and/or fumes may be generated during combustion or decomposition. Firefighters should wear positive-pressure, self-contained breathing apparatus (SCBA) and protective firefighting clothing. Fire water should be kept out of waterways and sewers to minimize the potential for environmental damage. Emergency procedures should be carefully followed. See Environmental, Health, and Physical Hazard Information.

For more information, request the relevant Safety Data Sheet from the Dow Customer Information Group.

Health Information

Health information for ICOLARIN™ HC Series dyes is summarized on the relevant Safety Data Sheets. It is important to note that health risks associated with individual products may vary based on their formulation or intended use. An overview of health information for these products appears below. However, specific products may also contain solvents and other components or additives that have additional health risks. The Safety Data Sheet is the preferred source for specific health information.

Eye contact – Direct contact with these products may cause slight to severe irritation.

Skin contact – Direct contact may cause slight to moderate irritation. Prolonged exposure may result in drying of the skin and dermatitis. Solvents absorbed through the skin may cause symptoms similar to those observed following inhalation exposure.

Inhalation – Inhalation of high concentrations of vapor or mist from solvents may cause irritation of the nose, throat, and lungs, as well as dizziness, headache, nausea, vomiting, diarrhea, anesthetic effects, and drowsiness. Prolonged exposure could result in central nervous system effects and, even death.

Ingestion – These products may be harmful if swallowed and may cause gastrointestinal irritation, including abdominal pain and nausea. Ingestion may also cause headache, dizziness, labored breathing, lack of coordination, light-headedness, and even death. Aspiration of some products into the lungs may cause lung damage, including inflammation and fluid in the lungs.

Repeated exposure – Prolonged or repeated exposure to naphthenic solvents in some of these formulations may cause liver and kidney damage. Repeated exposure to high doses of diethylene glycol monobutyl ether in laboratory animals caused red blood cell damage as well as changes in the liver, kidneys and stomach.

For more information, request the relevant Safety Data Sheet from the Dow Customer Information Group.

Environmental Information

Environmental information for ICOLARIN™ HC Series dyes is summarized on the relevant Safety Data Sheets. It is important to note that environmental risks associated with individual products vary based on their formulation or intended use. These products may contain minor components or additives that have additional risks. The Safety Data Sheet is the preferred source for specific information. An overview of environmental information appears below.

Dye components used in ICOLARIN HC Series dyes are dispersible or miscible in water and have low volatility. If released to water, dye components are expected to float on the water or bind to soils, suspended solids, or sediments. The majority of dye components are expected to degrade slowly in the environment in response to chemical and biological processes. These components have a low-to-moderate potential to bioconcentrate (accumulate in the food chain) and are anticipated to be moderately to highly toxic to aquatic organisms on an acute basis.

The solvents used in ICOLARIN HC Series dyes have low volatility. If released to the environment, they would have a high potential to bind to soils and sediments. The solvents are expected to be rapidly degraded in the environment by chemical and biological
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processes. They show a low to moderate potential for bioconcentration, and the aquatic toxicity ranges from practically nontoxic to highly toxic on an acute basis.

For more information, request the relevant Safety Data Sheet from the Dow Customer Information Group.

Physical Hazard Information

ICOLARIN™ HC Series dyes are considered stable under recommended storage and normal use conditions.

Avoid contact with strong acids and oxidizing agents.

For more information, request the relevant Safety Data Sheet from the Dow Customer Information Group.

Regulatory Information

Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of ICOLARIN HC Series dyes. These regulations may vary by city, state, country, or geographic region. Information may be found by consulting the relevant Safety Data Sheet or Contact Us.

Additional Information

- Request the relevant Safety Data Sheet from the Dow Customer Information Group (www.dow.com/assistance/dowcig.htm)
- Contact Us (www.dow.com/assistance/index.htm)

For more business information about ICOLARIN™ HC Series dyes, contact the the Dow Customer Information Group at www.dow.com/assistance/dowcig.htm.

References

2 A World of Colours: ICOLARIN™ HC [Dyes], Rohm and Haas Company, page 2.
3 A World of Colours: ICOLARIN™ HC [Dyes], Rohm and Haas Company, page 2.
10 A World of Colours: ICOLARIN™ HC [Dyes], Rohm and Haas Company, page 2.
11 A World of Colours: ICOLARIN™ HC [Dyes], Rohm and Haas Company, page 2.
NOTICES

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