



KPT Reaction

KPT Reaction creates organic textures—similar to the stripes on a zebra or the growth pattern of coral—based on a reaction-diffusion process. You start by choosing a reaction seed, which initializes the reaction-diffusion process. KPT Reaction then builds a texture based on the apply mode, speed, and direction of the diffusion. The resulting pattern tiles seamlessly—lending it a multitude of uses in print media and on the Web.

This chapter provides specific information about working with KPT Reaction, including:

- [Setting the Direction](#)
- [Setting the Reaction Seed](#)
- [Setting the Apply Mode](#)
- [Setting the Pattern Width](#)
- [Setting the Diffusion Speed](#)
- [Using the Presets Library](#)

Refer to [KPT 6 Basics](#) for more information about using standard features of the KPT user interface.

To launch KPT Reaction:

- 1 Open the image you want to modify in the host application.
If the image includes multiple layers, select the layer on which you want to render the pattern.
If you want to apply the effect to a selected area, make that selection now. Otherwise, make sure that no selections are active in the host application.
- 2 Select **Filter menu > KPT6 > KPT Reaction**.
KPT Reaction launches and occupies the entire screen.

The Parameters panel contains options for changing the characteristics of the reaction.



The Parameters panel.

Working with KPT Reaction

When you launch KPT Reaction, the image appears in the Preview window. As you adjust the reaction parameters, the image in the Preview window updates to display the changes.



The Preview window.

Setting the Direction

The direction control button sets the direction of the diffusion.



The direction control button.

The central circle on the button sets an even diffusion—with no directional bias.

The arrows around the outer rim of the button add a directional bias to the diffusion—either horizontal, vertical, or diagonal.

To set an even diffusion:

- Click the central circle on the direction control button.

The circle is darkened when active.

To set a directional diffusion:

- Click an arrow on the direction control button.

The arrow is darkened to indicate the active direction.

Setting the Reaction Seed

The reaction seed is the basis for the pattern created by KPT Reaction. There are eight seed options:

- Source Image
- Inverse Image
- Noise
- Dots
- Voronoi
- Image plus Noise
- Image plus Dots
- Image plus Voronoi

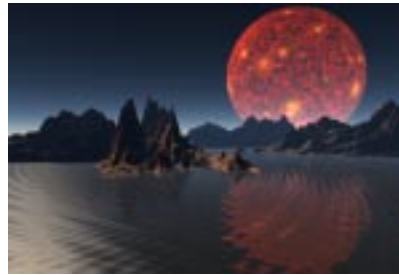
To set the reaction seed:

- 1 Click on the Reaction Seed bar to display the Reaction Seed menu.
- 2 Select an option from the menu.
A check indicates which type is enabled.

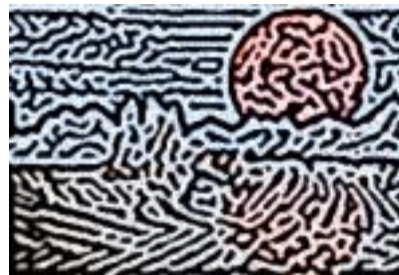
Source Image generates a pattern based on the contours of the source image.

Inverse Image generates an alternate pattern based on the contours of the source image.

Original Image



Pattern created with the Source Image seed

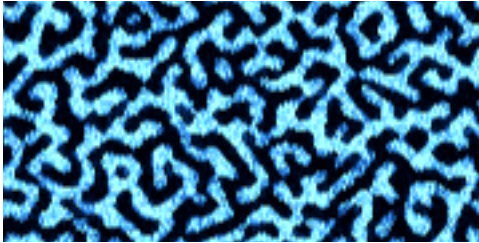


Pattern created with the Inverse Image seed



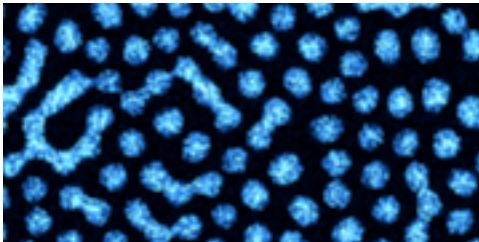
When you use the Image seed, the reaction/diffusion process is initialized with the source image. Patterns form around features in the image—evolving and propagating where textures and gradients occur. The Inverse Image seed produces an alternate set of patterns.

Noise uses fine noise to initiate the reaction/diffusion process.



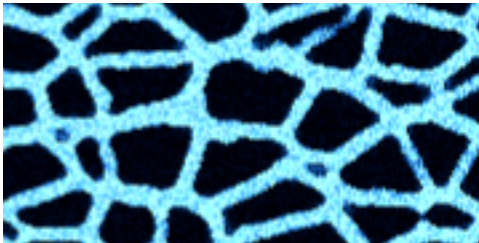
The Noise seed produces a pattern with irregular stripes. The source image has no effect on the pattern.

Dots uses equally spaced dots to initiate the reaction/diffusion process.



The Dots seed produces circular patterns with occasional connections. The source image has no effect on the pattern.

Voronoi uses a Voronoi pattern to initiate the reaction/diffusion process.



The Voronoi seed produces reticulated patterns. The source image has no effect on the pattern.

Image plus Noise is a hybrid of the Image Source and Noise seeds.



The Image plus Noise seed produces irregular stripes that evolve around the image features.

Image plus Dots is a hybrid of the Image Source and Dots seeds.



The Image plus Dots seed produces circular patterns that evolve around the image features.

Image plus Voronoi is a hybrid of the Image Source and Voronoi seeds.



The Image plus Voronoi seed produces reticulated patterns that evolve around the image features.

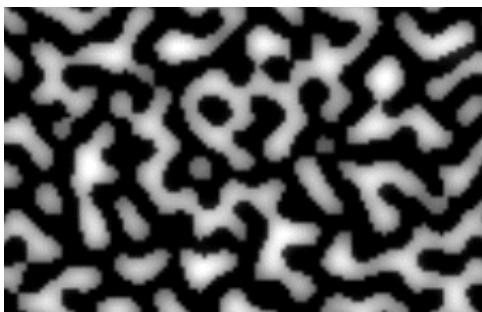
Setting the Apply Mode

The apply mode determines how the pattern created by the reaction/diffusion process is applied to the image. KPT Reaction provides eighteen apply modes.

To set the apply mode:

- 1 Click on the Apply Mode bar to display the Apply Mode menu.
- 2 Select an option from the menu.
A check indicates which type is enabled.

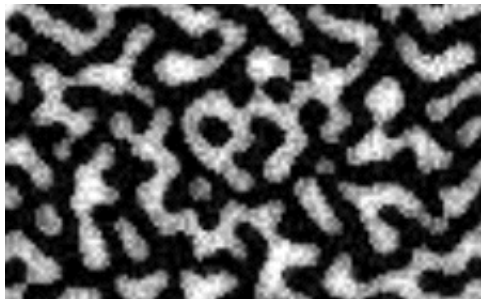
Raw Grayscale replaces the image with a grayscale pattern.



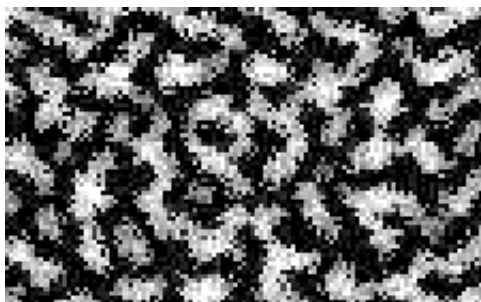
Raw Diffused provides additional diffusion to the Raw Grayscale pattern.



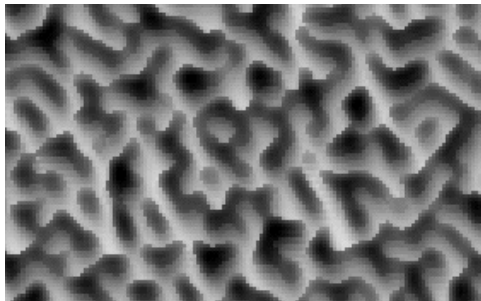
Raw with Noise replaces the image with a grayscale pattern that is mixed with monochromatic noise.



Raw Diffused with Noise provides additional diffusion to the Raw with Noise pattern.



Raw Smudged replaces the image with a grayscale pattern that is smudged with a directional bias.



Emboss applies a grayscale pattern with a liquid metal effect—showing highlights and shadows—to the source image.



Emboss Screen applies a pattern with a transparent metal effect—allowing the colors from the source image to tint the pattern.



Emboss Multiply applies an embossed pattern that derives its color from the source image based on a “multiply” blend mode—creating a dark pattern.



Emboss Luminance applies an embossed pattern that derives its color from the source image based on a “luminosity” blend mode.



Luminance uses the red, green, and blue channels from source image to apply color behind a grayscale pattern.



Luminance with Noise adds monochromatic noise to the Luminance apply model (described above).



Luminance Diffused with Noise adds additional diffusion to the Luminance with Noise pattern.



Luminance Smudged smudges the Luminance pattern with a directional bias.

Multiply applies an grayscale pattern to the source image using a “multiply” blend mode.



Multiply Diffused diffuses the Multiply pattern described above.



Screen Diffused diffuses the Screen pattern described above.



Screen applies a white pattern to the source image using a “screen” blend mode.



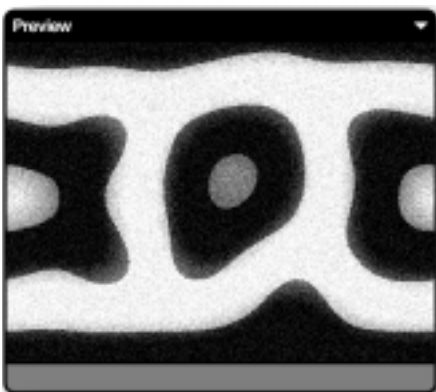
Setting the Pattern Width

The Width slider controls the size of the pattern features created by the reaction-diffusion process.

Width=5



Width=32



The lower the width setting, the more detailed the resulting pattern.

To set the width of the pattern features:

- Adjust the Width slider to the desired level.

Refer to [“Setting Sliders”](#) for more information about working with sliders.

Setting the Diffusion Speed

The Diffusion slider controls the number of iterations the KPT Reaction performs during the reaction-diffusion process. The higher the diffusion setting, the longer the reaction-diffusion process takes to complete.

To set the diffusion speed:

- Adjust the Diffusion slider to the desired level.

Refer to [“Setting Sliders”](#) for more information about working with sliders.

Using the Presets Library

KPT Reaction includes a library of preset reaction diffusions. You can also add reactions of your own creation to the library for future use.

Refer to [“Working with the Presets Library”](#) for details about using the Presets Library.