

Liquids Info

Wednesday, October 2, 2019

8:23 PM

Wogrim's Epic Liquids Info

Why?

This is important info if you want to make clothing that supports liquids, or add liquids to clothing that doesn't have it.

Intro

An important part of KK gameplay involves a certain body liquid getting all over the place. The way this works is there are textures on many items which show liquids in the appropriate situations. These are:

liquidmask

Marks which area is covered by liquid from different events

Green is front bottom

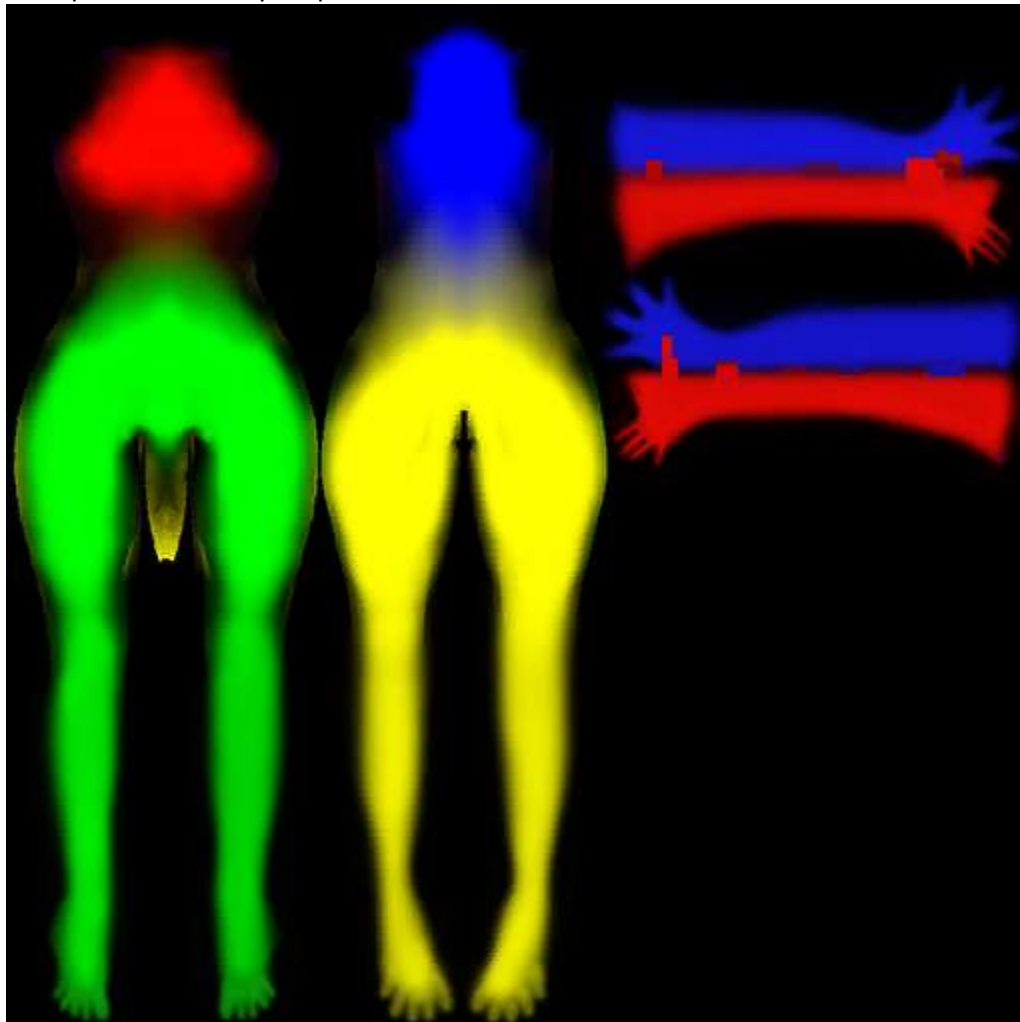
Yellow is back bottom, also shows on white

Red is front top

Blue is back top

Teal is face, also shows on white

Example: female body's liquid mask

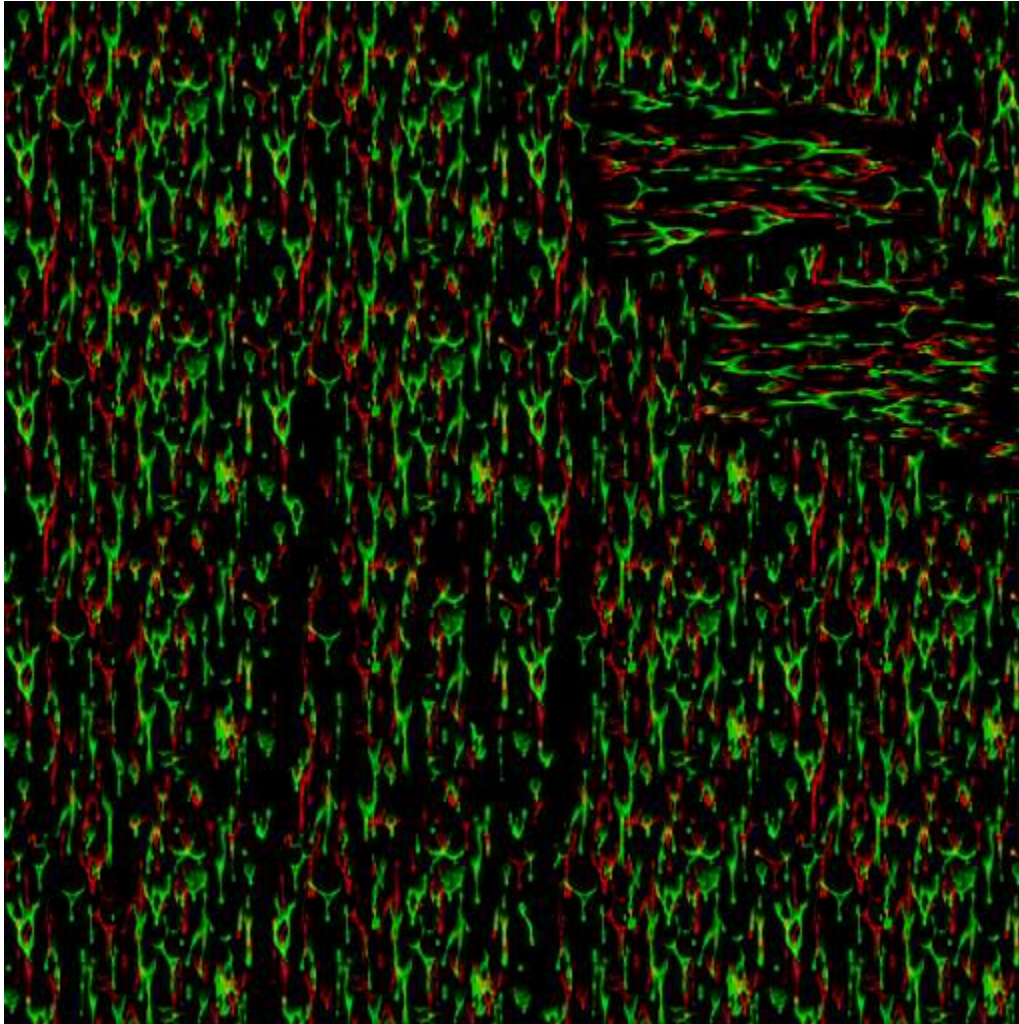


liquid spatter pattern (called "Texture2" on the shaders)

Red is first time

Green is 2 or more times

Example: female body liquid spatter pattern (notice liquid rotation for arms)

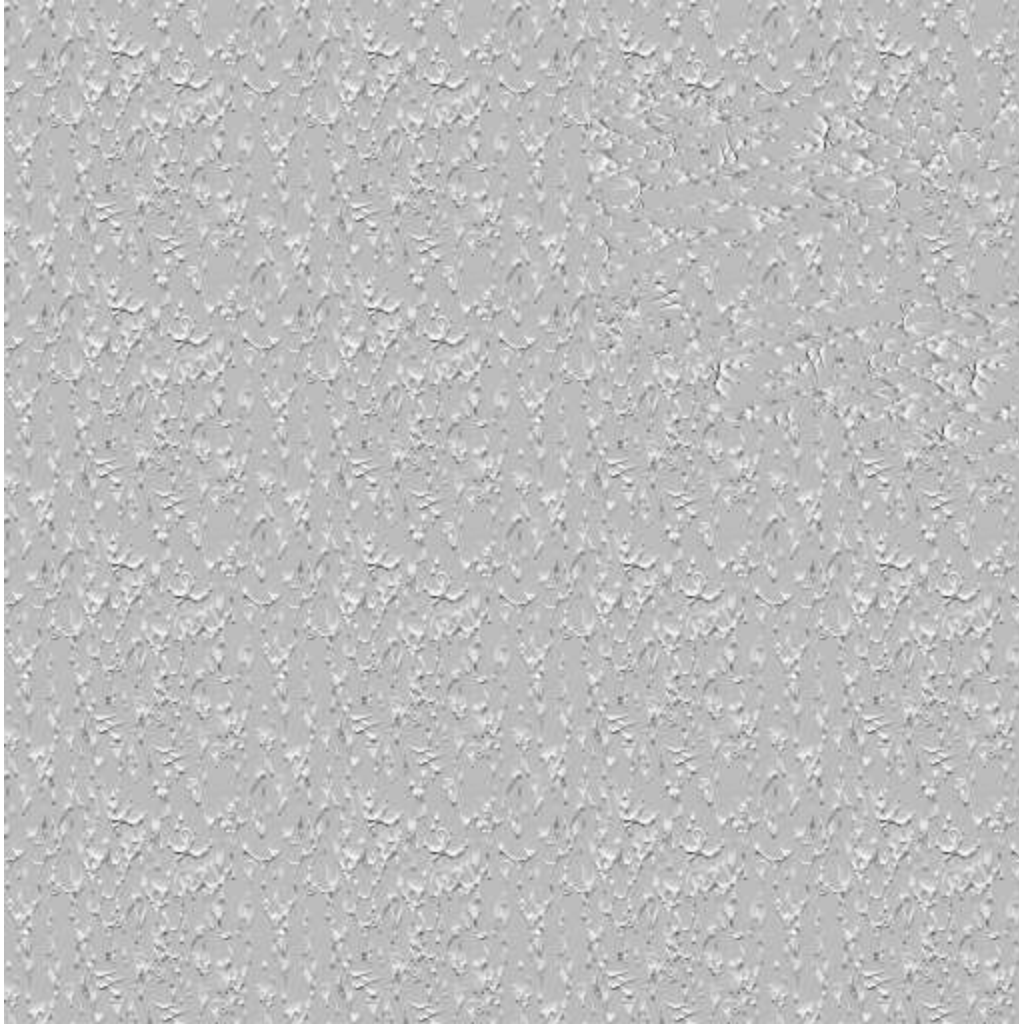


liquid normals (called "Texture3" on shaders)

This is a KK-style normal map for liquids; it makes them look 3D instead of flat.

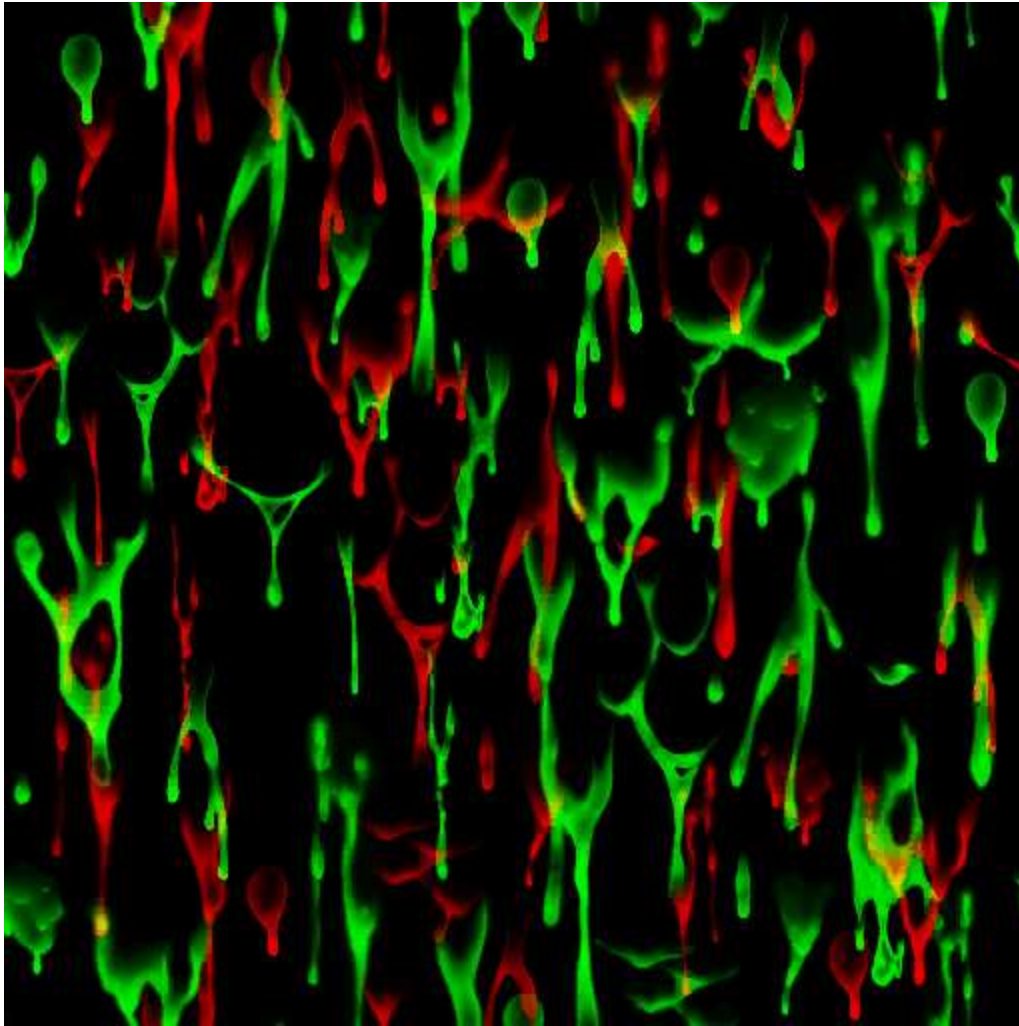
This must match the spatter pattern or else the liquids will not look right.

Example: female body liquid normals



How Do Most Items Do Liquids?

Most items use a generic liquid spatter pattern and normals. The pattern looks like this:



Values in "LiquidTiling" on the shader allow you to make it bigger or smaller to fit your item.

It is important to note that to make this work, items are UV mapped to:

- a) minimize stretching so that liquids are consistent size across the whole item
- b) have the proper rotation so that liquids go in the intended direction

Many items are also aligned to a generic liquidmask, but those are easy to make

How to Put Liquids on an Item?

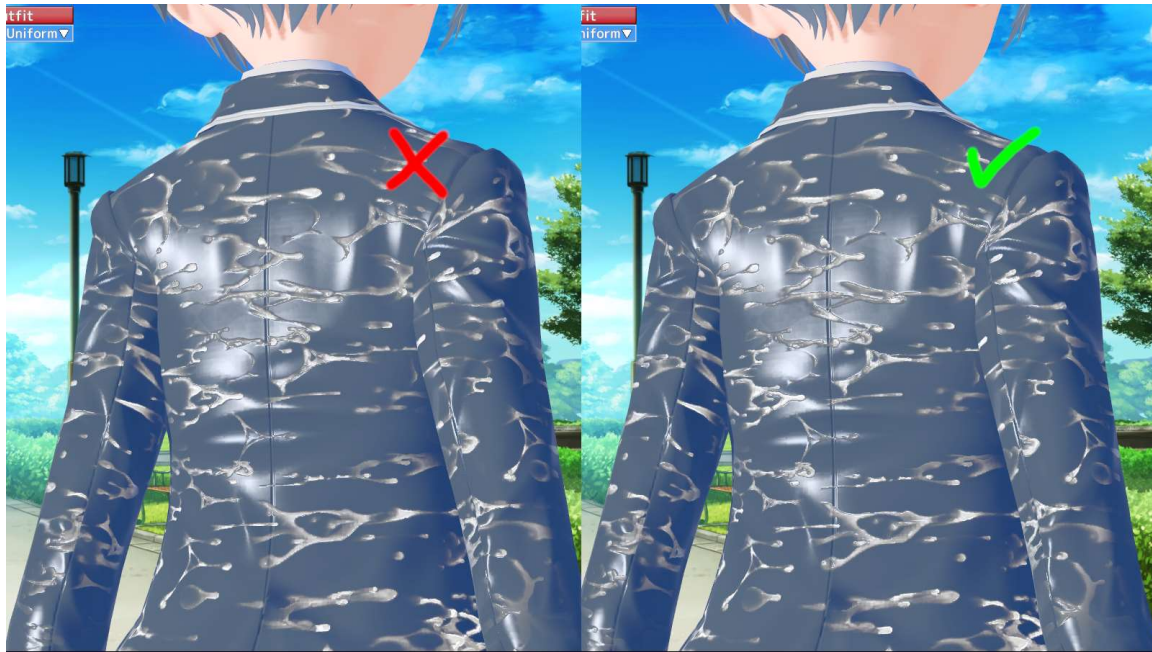
If you are making an item from scratch, the easiest way is to follow the principles above when you are UV unwrapping. However, you may be trying to add liquids to an item that was not set up for them.

Here are your options:

- a) use 3D modeling software to redo the UVs so that they will work with default liquids (this will require you to redo the item's other textures)
- b) use 3D modeling software to make custom 3D liquids that you create spatter pattern and generate normal map for (probably more effort unless the textures are really complicated)
- c) make a copy of default liquids and use image editing software to make them work for your item (has limitation)

Limitation of Using Image Editor to Modify Liquids

The way normal maps work means you can not simply rotate them. If you try, the light does not hit at the proper angle. But if you understand how KK normal maps work (a topic for a different guide), you can make proper rotations of 90 degrees. Left image is simple rotation of normal map, right image is properly rotated normal map. I know it is hard to see.



How To Easily Test Liquids?

Liquids can be easily tested with the Material Editor in the character creator. On your item's material, change values for these numbers to show liquids in the corresponding places. 0 for no liquid, 1 for first layer, 2 for both layers.

liquidbbot

liquidbtop

liquidface

liquidfbot

liquidftop

I do not recommend using Material Editor to try adjustments of the liquid normals. There is a formatting difference that causes problems.