CORE TABLES

AUTHORIZATION
Maps users to recipes

Column	Data Type	Description
authorization_id	int	System-generated ID of authorization
user_id	int	System-generated ID of user
recipe_id	int	System-generated ID of recipe
update_date	datetime	record update date
create_date	datetime	record create date

RECIPE
Main table, holds links to ingredients and equipment

Column	Data Type	Description
recipe_id	int	System-generated ID of recipe
recipe_name	varchar(255)	free-text name of recipe
brewer_name	varchar(255)	free-text name of brewer
recipe_type_id	int	category, FK recipe_type
batch_size	numeric(18,2)	volume of recipe
batch_size_uom_id	int	FK, uom_type (gal)
equipment_profile_id	int	FK to equipment_profiles
update_date	datetime	record update date
create_date	datetime	record create date

RECIPE_COMPONENT
Connects recipes to ingredients

Column	Data Type	Description
recipe_component_id	int	System-generated ID of record
recipe_id	int	FK, recipe
component_id	int	FK, component
amount	numeric(18,2)	amount of component
amount_uom_id	int	FK, uom_type
update_date	datetime	record update date
create_date	datetime	record create date

PROFILE_EQUIPMENT
Brewing equipment profile

Column	Data Type	Description
profile_equipment_id	int	System-generated ID of profile
name	varchar(255)	name of the profile
efficiency	numeric(18,2)	brewhouse efficiency
ferm_batch_vol	numeric(18,2)	batch volume
batch_vol_uom_id	int	FK, uom_type (gal)
mash_tun_vol	numeric(18,2)	mash tun volume
mash_tun_uom_id	int	FK, uom_type (gal)

boil_vol	numeric(18,2)	calculated batch volume
boil_vol_uom_id	int	FK, uom_type (gal)
boil_time	numeric(18,2)	boil time
boil_time_uom_id	int	FK, uom_type (min)
boil_off_per_hr_vol	numeric(18,2)	boil off rate per hour
boil_off_per_hr_uom_id	int	FK, uom_type (gal)
boil_shrinkage	numeric(18,2)	shrinkage percentage
boil_total_boil_off	numeric(18,2)	calculated total boil off
boil_total_boil_off_uom_id	int	FK, uom_type (gal)
boil_post_boil_vol	numeric(18,2)	calculated post-boil volume
boil_post_boil_vol_uom_id	int	FK, uom_type (gal)
ferm_loss	numeric(18,2)	fermenter loss
ferm_loss_uom_id	int	FK, uom_type (gal)
ferm_top_up	numeric(18,2)	top up water
ferm_top_up_uom_id	int	FK, uom_type (gal)
ferm_loss_trub_chill	numeric(18,2)	loss to trub and chiller
ferm_loss_trub_chill_uom_id	int	FK, uom_type (gal)
bottling_vol	numeric(18,2)	calculated bottling volume
bottling_vol_uom_id	int	FK, uom_type (gal)
notes	mediumtext	notes about the profile
update_date	datetime	record update date
create_date	datetime	record create date

COMPONENT		
Shared attributes of recipe components		
Column	Data Type	Description
component_id	int	System-generated ID of component
name	varchar(255)	Description of component
component_type_id	int	Category, FK component_type
comp_hop_id	int	FK, component_hop
comp_grain_id	int	FK, component_grain
comp_yeast_id	int	FK, component_yeast
comp_water_id	int	FK, component_water
comp_other_id	int	FK, component_other
update_date	datetime	record update date
create_date	datetime	record create date

ORIGIN		
Country of origin for components		
Column	Data Type	Description
origin_id	int	System-generated ID of origin
name	varchar(255)	Description of origin
update_date	datetime	record update date
create_date	datetime	record create date

SUPPLIER

Information about component suppliers

Column	Data Type	Description
supplier_id	int	System-generated ID of supplier
supplier_type_id	int	FK, supplier_type
name	varchar(255)	Description of supplier
url	varchar(255)	website of supplier
email	varchar(255)	email address of supplier
phone	varchar(255)	phone number of supplier
contact_name	varchar(255)	contact name of supplier
notes	mediumtext	notes about the supplier
update_date	datetime	record update date
create_date	datetime	record create date

USER

Table of users and passwords

Column	Data Type	Description
user_id	int	System-generated ID of user
user_name	varchar(255)	user name
user_pass	varchar(255)	password

USER_ROLES

Defines user/role relationships

Column	Data Type	Description
user_role_id	int	System-generated ID of user/role
user_name	varchar(255)	user name
role_name	varchar(255)	role name

ATTRIBUTE TABLES

COMPONENT_HOP		
Additional attributes for hops		
Column	**Data Type**	**Description**
comp_hop_id	int	System-generated ID of hop
name	varchar(255)	Description of hop
origin_id	int	FK, origin
supplier_id	int	FK, supplier
alpha_pct	numeric(18,2)	Alpha acid percentage
beta_pct	numeric(18,2)	Beta acid percentage
hop_type_id	int	FK, hop_type
hop_form_id	int	FK, hop_form_type
notes	mediumtext	Notes about the hop
update_date	datetime	record update date
create_date	datetime	record create date

COMPONENT_GRAIN		
Additional attributes for grains		
Column	**Data Type**	**Description**
comp_grain_id	int	System-generated ID of hop
name	varchar(255)	Description of hop
origin_id	int	FK, origin
supplier_id	int	FK, supplier
grain_type_id	int	FK, grain_type
color	numeric(18,2)	color of grain in SRM
potential	numeric(18,2)	specific gravity of the grain
notes	mediumtext	Notes about the grain
update_date	mediumtext	record update date
create_date	datetime	record create date

COMPONENT_YEAST		
Additional attributes for yeast		
Column	**Data Type**	**Description**
comp_yeast_id	int	System-generated ID of yeast
name	varchar(255)	Description of yeast
lab_id	int	FK, supplier
supplier_id	int	FK, supplier
yeast_type_id	int	FK, yeast_type
yeast_form_id	int	FK, yeast_form
yeast_floc_type_id	int	FK, yeast_floc_type
attenuation_min	numeric(18,2)	minimum attenuation percentage
attenuation_max	numeric(18,2)	maximum attenuation percentage
temperature_min	numeric(18,2)	minimum temperature (F)
temperature_max	numeric(18,2)	maximum temperature (F)

cells_per_pack	numeric(18,2)	number of cells per pack (billions)
notes	mediumtext	Notes about the yeast
update_date	datetime	record update date
create_date	datetime	record create date

COMPONENT_OTHER		
Additional attributes for other component types		
Column	Data Type	Description
comp_other_id	int	System-generated ID of other component
name	varchar(255)	Description of other component
use_for	varchar(255)	Description of use of component
use_type_id	int	FK, use_type
time	numeric(18,2)	time at which component should be used
time_uom_id	int	FK, uom_type
amount	numeric(18,2)	recommended amount of component
amount_uom_id	int	FK, uom_type
batch_size	numeric(18,2)	recommended batch size for amount
batch_size_uom_id	int	FK, uom_type (gal)
notes	mediumtext	Notes about the other component
update_date	datetime	record update date
create_date	datetime	record create date

COMPONENT_WATER		
Additional attributes for water		
Column	Data Type	Description
comp_water_id	int	System-generated ID of hop
name	varchar(255)	Description of hop
ph	numeric(18,2)	pH of water
ca_ppm	numeric(18,2)	Calcium (ppm)
mg_ppm	numeric(18,2)	Magnesium (ppm)
na_ppm	numeric(18,2)	Sodium (ppm)
so4_ppm	numeric(18,2)	Sulfate (ppm)
cl_ppm	numeric(18,2)	Chloride (ppm)
hco3_ppm	numeric(18,2)	Bicarbonate (ppm)
caso4_g	numeric(18,2)	Gypsum (g), weight to achieve this water
nacl_g	numeric(18,2)	Table salt (g), weight to achieve this water
mgso4_g	numeric(18,2)	Epsom salt (g), weight to achieve this water
cacl_g	numeric(18,2)	Calcium Chloride (g), weight to achieve this water
nahco3_g	numeric(18,2)	Baking soda (g), weight to achieve this water
caco3_g	numeric(18,2)	Chak (g), weight to achieve this water
batch_size	numeric(18,2)	recommended batch size for amounts
batch_size_uom_id	int	FK, uom_type (gal)
notes	mediumtext	Notes about the water
update_date	datetime	record update date
create_date	datetime	record create date

CATEGORY TABLES

RECIPE_TYPE		
Category table for recipe types		
Column	**Data Type**	**Description**
recipe_type_id	int	System-generated ID of type
name	varchar(255)	Description of type
update_date	datetime	record update date
create_date	datetime	record create date

UOM_TYPE		
Category table for units of measure		
Column	**Data Type**	**Description**
uom_id	int	System-generated ID of UOM
name	varchar(255)	Description of UOM
update_date	datetime	record update date
create_date	datetime	record create date

COMPONENT_TYPE		
Category table for component types		
Column	**Data Type**	**Description**
component_type_id	int	System-generated ID of UOM
name	varchar(255)	Description of UOM
update_date	datetime	record update date
create_date	datetime	record create date

HOP_TYPE		
Category table for hop types (bittering, aroma, both)		
Column	**Data Type**	**Description**
hop_type_id	int	System-generated ID of hop type
name	varchar(255)	Description of hop type
update_date	datetime	record update date
create_date	datetime	record create date

HOP_FORM_TYPE		
Category table for hop forms (pellet, leaf, plug)		
Column	**Data Type**	**Description**
hop_form_id	int	System-generated ID of hop form
name	varchar(255)	Description of hop form
update_date	datetime	record update date
create_date	datetime	record create date

GRAIN_TYPE

Category table for grain types (grain, extract, dry extract, sugar, adjunct)

Column	Data Type	Description
hop_type_id	int	System-generated ID of hop type
name	varchar(255)	Description of hop type
update_date	datetime	record update date
create_date	datetime	record create date

SUPPLIER_TYPE

Category table for supplier type (vendor, lab)

Column	Data Type	Description
supplier_type_id	int	System-generated ID of supplier type
name	varchar(255)	Description of supplier type
update_date	datetime	record update date
create_date	datetime	record create date

YEAST_TYPE

Category table for yeast types (ale, lager, wine, champagne, wheat)

Column	Data Type	Description
yeast_type_id	int	System-generated ID of yeast type
name	varchar(255)	Description of yeast type
update_date	datetime	record update date
create_date	datetime	record create date

YEAST_FORM

Category table for yeast form (liquid, dry, slant, culture)

Column	Data Type	Description
yeast_form_id	int	System-generated ID of form type
name	varchar(255)	Description of yeast form
update_date	datetime	record update date
create_date	datetime	record create date

YEAST_FLOC_TYPE

Category table for yeast flocculation (low, med, high, very high)

Column	Data Type	Description
yeast_floc_type_id	int	System-generated ID of flocculation type
name	varchar(255)	Description of yeast flocculation
update_date	datetime	record update date
create_date	datetime	record create date

USE_TYPE

Category table for use types (boil, mash, primary, secondary, bottling)

Column	Data Type	Description
use_type_id	int	System-generated ID of use type
name	varchar(255)	Description of use
update_date	datetime	record update date
create_date	datetime	record create date