

values for the ethanol properties, they are to be specified to the same number of decimal places as is shown for the default properties.

**Table 1  
Default Ethanol Properties Values Used in the CARBOB Model**

Property	Default Property
Aromatic content	1.7 vol.%
Olefin content	0.5 vol.%
Sulfur content	10 ppmw
Benzene content	0.06 vol.%

After the user specifies the ethanol properties (or elects to use the default ethanol property values), he specifies the values of the properties of the CARBOB and the ethanol content (including the denaturant) of the finished gasoline. The values of the CARBOB properties and ethanol content are specified to the number of decimal places shown in Table 2.

**Table 2  
Fuel Properties Specified in CARBOB Model**

Fuel Property	Units	Decimal Places
Reid vapor pressure (RVP)	psi, max.	0.01
T50 Distillation Temperature (T50)	deg. F, max.	1.0
T90 Distillation Temperature (T90)	deg. F, max.	1.0
Aromatics Content	vol.%, max.	0.1
Olefin Content	vol.%, max.	0.1
Ethanol Content	vol.%, max.	0.1
Sulfur Content	ppmw, max.	1.0
Benzene Content	vol.%, max.	0.01

The user then uses the CARBOB model equations shown in Section 3 above and the values for each CARBOB property, ethanol property, and the ethanol content of the finished gasoline, to compute, for each property for which there is a CARBOB model, the corresponding property for the finished gasoline. The value for each property of the finished gasoline is then input into either the Phase 2 or Phase 3 predictive model as the predictive model candidate gasoline. The use of the Phase 2 or Phase 3 predictive model is dictated by which regulations are in effect or applicable to the user at the time. The applicable Predictive Model then evaluates the emissions equivalency of the predictive model candidate gasoline in accordance with the process described in the Phase 2 and Phase 3 Predictive Model Procedures.

If the user intends to produce gasoline in which at least one property will comply with the predictive model averaging compliance option, and the user is establishing a DAL for the CARBOB in accordance with section 2266.5(a)(5)(B), the CARBOB model

must be used to calculate the designated alternative limit (DAL) for the final blend of oxygenated gasoline.

For the gasoline aromatic content, olefin content, benzene content, and sulfur content, the DAL for the final blend of oxygenated gasoline is calculated directly from the CARBOB models for these properties by inputting into the CARBOB models for these properties the DAL for the CARBOB. The CARBOB model prediction is the DAL for the final blend of oxygenated gasoline.

The methodology described above is also used in calculating the T50 and T90 DALs for final blends of oxygenated gasoline, with one exception. This exception occurs if a producer is producing gasoline in which the T50 will comply with a predictive model flat limit and the T90 will comply with a predictive model averaging limit, or the T50 will comply with a predictive model averaging limit and the T90 will comply with a predictive model flat limit. In these cases, the DAL for the final blend of oxygenated gasoline is calculated by inputting into the CARBOB model the value of the CARBOB DAL for the property (either T50 or T90) which is being produced to the predictive model averaging limit, and inputting into the CARBOB model the flat limit of the CARBOB property (T50 or T90) that is being produced to the predictive model flat limit. The CARBOB model prediction is the DAL for the final blend of oxygenated gasoline for the property being produced under the predictive model averaging compliance option.

Shown in Table 3 on the next page is a worksheet which includes a step-by-step process to illustrate the use of the CARBOB procedures and to assist the user in using the CARBOB model. The worksheet in Table 3 assumes that the user is complying with the Phase 3 regulations, but the same process would be used if the user were complying with the Phase 2 regulations. Only Step 5 in the process shown in Table 3 would be different if the user were complying with the Phase 2 gasoline regulations. In that case, the user would compare his predictive model candidate gasoline to the applicable Phase 2 limits instead of the Phase 3 limits.