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**RENEWAL APPLICATION
ADDENDUM B2**

**CHEMICAL COMPATIBILITY ANALYSIS OF WASTE FORMS AND CONTAINER
MATERIALS**

- 1 • heat generation
- 2 • gas generation (flammable gases)
- 3 • pressure build-up (nonflammable gases)
- 4 • toxic by-product generation

5 Each generator and storage site has produced a comprehensive list of all possible chemicals
6 present in its waste. The chemical components found in each waste generation process are
7 determined by examination of the process technology, by chemical analysis, or by process flow
8 analysis. Under this system, all chemical inputs into the system are accounted for, even though
9 all of these components may not be a part of the waste. For example, generator sites might
10 include both acids and bases in their lists, even though the two groups have been neutralized
11 prior to placement in a waste container.

12
13 In addition to the chemicals listed in Appendix 2 of the EPA document (Hatayama et al., 1980),
14 the following components that exhibit toxicity characteristics defined under 40 Code of Federal
15 Regulations (**CFR**) §261.24 were added to the chemical list in trace (<1 weight percent)
16 quantities:

17
18 Group 3 Acids, Organic

19 2,4-D

20 2,4,5-TP (Silvex)

21
22 Group 17 Halogenated Organics

23 Methoxychlor

24 Toxaphene

25 2,4-D

26 Hexachlorobutadiene

27 Hexachloroethane

28 Tetrachloroethylene

29 2,4,5-Trichlorophenol

30 2,4,6-Trichlorophenol

31
32 All hazardous constituents listed in the Renewal Application, Part A are present in the chemical
33 lists and accounted for in the compatibility analysis.

34
35 The compounds listed on the Material Safety Data Sheet for Radiac™ wash were added to the
36 chemical compatibility assessment. The reactive compounds associated with Radiac™ wash are:

<u>GROUP</u>	<u>COMPOUND</u>	<u>CONCENTRATION</u>
3	citric acid	Minor (M) (1-10 percent)
106	water	Dominant (D) (> 10 percent)

1 The compounds found in the fire suppressants in use at the WIPP facility were added to evaluate
2 chemical compatibility of these materials with the test wastes. The following reactive
3 compounds were added:
4

<u>GROUP</u>	<u>COMPOUND</u>	<u>CONCENTRATION</u>
14	diethylene glycol monobutyl ether	D
15	fluorosurfactants	D
106	water	D

9
10 Ansulite™ 6 percent AFFF (AFC-3) contains diethylene glycol monobutyl ether,
11 fluorosurfactants, and water. The FORAY Dry Chemical Extinguishing Agent contains
12 potassium aluminum silicate, magnesium aluminum silicate, monoammonium phosphate,
13 ammonium sulfate, and methyl hydrogen polysiloxane, which are not hazardous reactive
14 constituents.

15
16 To account for packaging, container, and backfill materials, the following components were
17 added to the database for each content code in dominant (>10 percent by weight) quantities:
18

19 Group 10 Caustics

20 Magnesium Oxide
21

22 Group 23 Metals, other elemental and alloys as sheets, rods, moldings, drops, etc.

23 Low Carbon Steel D
24

25 Group 101 Combustible Materials

26 Polyethylene D
27

28 The chemical concentration levels are reported as either Trace (T) (<1 percent by weight), Minor
29 (M) (1-10 percent by weight), or Dominant (D) (>10 percent by weight). The chemical list is
30 divided into groups based on chemical properties and structure (e.g., acids, caustics, metals, etc.).
31 If incompatible groups are combined, the possibility exists for the reactions listed above. For
32 example, a reaction between Group 1 (Acids, Mineral, Non-oxidizing) and Group 10 (Caustics)
33 could result in heat generation.
34

35 Possible chemical incompatibilities between compounds present in trace quantities (<1 percent
36 by weight) and compounds present in concentrations > 1 percent by weight (i.e., D x T, D x T1,
37 D x T2, D x T3, M x T, M x T1, M x T2, or M x T3) are included in this report. However,
38 interactions between compounds present in trace quantities (<1 percent by weight) and
39 compounds present in concentrations < 1 percent by weight do not pose an incompatibility
40 problem for the following reasons:
41

- 42 • The trace chemicals reported by the sites are in concentrations well below the trace limit
43 of 1 weight percent. Sampling programs show that the concentration levels of these
44 compounds are significantly lower than the upper limit of 1 percent.

- 1 • The trace chemicals are usually dispersed in the waste, which further dilutes
2 concentrations of these materials.

- 3 • Trace chemicals that might be incompatible with major and dominant
4 materials/chemicals would have reacted during the waste treatment process prior to
5 placement in waste containers.

- 6 • Because of restrictions imposed by the EPA on reporting of hazardous wastes, some
7 chemicals are listed in trace quantities even if they have already reacted. Hazardous waste
8 regulations as promulgated by the EPA mixture rule require that a mixture of any solid
9 waste and a hazardous waste listed in 40 CFR Part 261, Subpart D, be considered a
10 hazardous waste subject to Resource Conservation and Recovery Act regulations.
11 However, Subpart D does not list minimum concentrations for these listed wastes, with
12 the result that any such mixtures must be considered hazardous waste even if the Subpart
13 D constituent is at or below detection limits.

- 14 • The waste is either solidified and immobilized (solidified materials) or present in bulk
15 form as a solid (solid materials). In almost all cases, any possible reactions take place
16 before the waste is generated in its final form.

- 17 • Total trace chemicals within a payload container are limited to less than 5 weight percent.

18 All potential incompatibilities between trace, minor, and dominant compounds have been
19 analyzed on a case-by-case basis for each waste stream included in the analysis. Some chemicals
20 listed as being present in the waste have reacted prior to placement in a waste container. For
21 example, a site listing a caustic (Group 10) and an acid (Group 1) in its waste has only the
22 neutralized product present in an immobilized form. Further reactions of this type do not occur
23 once the waste is neutralized in its final form. An additional constraint on the chemicals and
24 materials that can be present within each waste stream code is their gas generation potential due
25 to radiolysis.

26
27 Unresolved incompatibilities between trace and minor, trace and dominant, minor and dominant,
28 minor and minor, or dominant and dominant waste constituents were identified and segregated.
29 These wastes cannot be transported until the incompatibilities are resolved (NuPac, 1989).
30 Table B2-1 presents the chemical compatibility analysis for the modified chemical lists for the
31 waste streams in the analysis. A list of explanations describing any noted incompatibilities
32 precedes Table B2-1.

33 34 Summary of Potential Incompatibilities for Waste Forms and Container Material

35 The following is a listing and explanation of compatibility code numbers used to identify
36 potential incompatibilities in Table B2-1. Where incompatibilities are noted, it is important to
37 remember that to the extent these incompatibilities are subject to the list of prohibited waste
38 listed in Renewal Application Chapter B, Section B-1c, these potential incompatibilities will be
39 removed prior to shipment of the waste to WIPP.

1 Explanation Code Number Descriptions

- 2 00 (1 x 10, 2 x 10, 3 x 10, 5 x 10, 10 x 13, 10 x 17, 10 x 18, 10 x 19, 10 x 21, 10 x 22, 10 x
3 23, 10 x 24, 10 x 25, 10 x 27, 10 x 32, 10 x 102, 10 x 107) These potential
4 incompatibilities result from the addition of magnesium oxide backfill material.
5 However, the hydration of magnesium oxide results in the formation of brucite ($Mg(OH)_2$),
6 which buffers the pH of the solution at approximately 8.5. Therefore, caustic conditions
7 are not produced by the use of magnesium oxide backfill.
- 8 0a. (1 x 4) The potential chemical incompatibility is the possible dehydration or displacement
9 reactions between non-oxidizing mineral acids (Group 1) and alcohols and glycols in
10 waste forms (Group 4) resulting in heat generation. The potential chemical
11 incompatibility results from reporting trace quantities (<1 percent) of non-oxidizing acid
12 in generator waste streams. However, the non-oxidizing mineral acids are neutralized
13 prior to packaging, and the materials in this waste stream are considered chemically
14 compatible.
- 15 0aa. (1 x 10) The potential chemical incompatibility is the possible acid-base reaction between
16 strong mineral acids (Group 1) and strong caustics (Group 10) resulting in heat
17 generation. The potential chemical incompatibility results from reporting trace quantities
18 (<1 percent) of non-oxidizing acid in generator waste streams. However, the non-
19 oxidizing mineral acids are neutralized prior to packaging, and the materials in this waste
20 stream are considered chemically compatible.
- 21 0aaa. (1 x 14) The potential chemical incompatibility is the possible hydrolysis reaction
22 between strong mineral acids (Group 1) and ethers (Group 14), resulting in heat
23 generation. The potential chemical incompatibility results from reporting trace quantities
24 (<1 percent) of non-oxidizing acid in generator waste streams. However, the non-
25 oxidizing mineral acids are neutralized prior to packaging, and the materials in this waste
26 stream are considered chemically compatible.
- 27 0aaaa. (1 x 15) The potential chemical incompatibility is the possible formation of hydrogen
28 fluoride when strong mineral acids (Group 1) mix with inorganic fluorides (Group 15),
29 resulting in toxic gas generation. The potential chemical incompatibility results from
30 reporting trace quantities (<1 percent) of non-oxidizing acid in generator waste streams.
31 However, the non-oxidizing mineral acids are neutralized prior to packaging, and the
32 materials in this waste stream are considered chemically compatible.
- 33 0b. (1 x 17) The potential chemical incompatibility is the possible reaction between strong
34 mineral acids (Group 1) and halogenated organics (Group 17), resulting in generation of
35 heat and toxic hydrogen halide fumes. The potential chemical incompatibility results
36 from reporting trace quantities (<1 percent) of non-oxidizing acid in generator waste
37 streams. However, the non-oxidizing mineral acids are neutralized prior to packaging,
38 and the materials in this waste stream are considered chemically compatible.

- 1 0bb. (1 x 19) The potential chemical incompatibility is the possible condensation reaction
2 between strong mineral acids (Group 1) and ketones (Group 19), resulting in generation
3 of heat. The potential chemical incompatibility results from reporting trace quantities (<1
4 percent) of non-oxidizing acid in generator waste streams. However, the non-oxidizing
5 mineral acids are neutralized prior to packaging, and the materials in this waste stream
6 are considered chemically compatible.
- 7 1 (1 x 23) The potential chemical incompatibility is the possible reaction between non-
8 oxidizing mineral acids (Group 1) and metals and other elemental alloys as sheets, rods,
9 moldings, drops, etc. (Group 23). The non-oxidizing mineral acids are present only in
10 trace quantities (<1 percent) and are neutralized and bound in the cemented waste form.
11 Due to the immobilization and prior reaction of the acids, the materials in this waste
12 stream are considered chemically compatible.
- 13 2 (1 x 24) The potential chemical incompatibility is the tendency of non-oxidizing mineral
14 acids (Group 1) to solubilize toxic metals and metal compounds (Group 24). The mineral
15 acids are present only in trace quantities (<1 percent) and are neutralized and bound in
16 the cemented waste form. Due to the immobilization and prior reaction of the non-
17 oxidizing acids, the materials in this waste stream are considered chemically compatible.
- 18 3 (1 x 101) The potential chemical incompatibility is the possible reaction between non-
19 oxidizing mineral acids (Group 1) and combustible materials (Group 101). The mineral
20 acids are present only in trace quantities (<1 percent) and are neutralized and bound in
21 the cemented waste form. An absorbent has been added to immobilize free liquids. Due
22 to the immobilization and prior reaction of the non-oxidizing acids, the materials in this
23 waste stream are considered chemically compatible.
- 24 3a. (1 x 102) The potential chemical incompatibility is the possible violent reaction between
25 non-oxidizing mineral acids (Group 1) and explosives (Group 102). However, explosives
26 are not allowed to be shipped to WIPP unless treatment renders them inert. Additionally,
27 mineral acids are present only in trace quantities (<1 percent) and are neutralized prior to
28 loading in waste containers. Therefore, the materials in this waste stream are considered
29 chemically compatible.
- 30 3aa. (1 x 104) The potential chemical incompatibility is the possible reaction between non-
31 oxidizing mineral acids (Group 1) and strong oxidizing agents (Group 104), resulting in
32 heat and generation of toxic and corrosive gases. However, the mineral acids and
33 oxidizing agents are present in trace quantities (<1 percent) and neutralized prior to
34 loading in waste containers. Therefore, the materials in this waste stream are considered
35 chemically compatible.
- 36 3b. (1 x 106) The potential chemical incompatibility is the possible reaction between mineral
37 acids (Group 1) and water (Group 106), resulting in the generation of heat. This potential
38 incompatibility results from the presence of water in Ansulite™ fire extinguishing agents
39 and/or Radiac™ wash solutions and/or absorbed water. However, the mineral acids are
40 present only in trace quantities (<1 percent) and are neutralized prior to loading in waste

- 1 containers. In addition, the presence of any absorbed liquids are immobilized in an
2 absorbent and would not be available for reaction.
- 3 3c. (2 x 3) The potential chemical incompatibility is the reaction of oxidizing mineral acids
4 (Group 2) with organic acids (Group 3) resulting in heat and gas generation. The
5 potential chemical incompatibility results from the use of citric acid in Radiac™ wash
6 solutions. The solid citric acid is diluted during preparation of the Radiac™ wash and is
7 often further diluted prior to use for decontamination. As a result, the potential for
8 reactions of solid citric acid with oxidizing mineral acids in waste forms is removed.
- 9 3d. (2 x 4) The potential chemical incompatibility is the possible dehydration or displacement
10 reactions between oxidizing mineral acids (Group 2) and alcohols and glycols (Group 4),
11 resulting in heat generation. The potential chemical incompatibility results from reporting
12 trace quantities (<1 percent) of oxidizing acid in generator waste streams. However, the
13 oxidizing mineral acids are neutralized prior to packaging, and the materials in this waste
14 stream are considered chemically compatible.
- 15 3e. (2 x 10) The potential chemical incompatibility is the possible acid-base reaction between
16 oxidizing mineral acids (Group 2) and strong caustics (Group 10), resulting in heat
17 generation. The potential chemical incompatibility results from reporting trace quantities
18 (<1 percent) of oxidizing acid in generator waste streams. However, the oxidizing
19 mineral acids are neutralized prior to packaging, and the materials in this waste stream
20 are considered chemically compatible.
- 21 3ee. (2 x 13) The potential chemical incompatibility is the possible reaction between oxidizing
22 mineral acids (Group 2) and esters (Group 13), resulting in heat generation. The potential
23 chemical incompatibility results from reporting trace quantities (<1 percent) of oxidizing
24 acid in generator waste streams. However, the oxidizing mineral acids are neutralized
25 prior to packaging, and the materials in this waste stream are considered chemically
26 compatible.
- 27 3f. (2 x 14) The potential chemical incompatibility is the possible hydrolysis reaction
28 between oxidizing mineral acids (Group 2) and ethers (Group 14), resulting in heat
29 generation. The potential chemical incompatibility results from reporting trace quantities
30 (<1 percent) of oxidizing acid in generator waste streams. However, the oxidizing
31 mineral acids are neutralized prior to packaging, and the materials in this waste stream
32 are considered chemically compatible.
- 33 3g. (2 x 15) The potential chemical incompatibility is the possible formation of hydrogen
34 fluoride when oxidizing mineral acids (Group 2) mix with inorganic fluorides (Group
35 15), resulting in toxic gas generation. The potential chemical incompatibility results from
36 reporting trace quantities (<1 percent) of oxidizing acid in generator waste streams.
37 However, the oxidizing mineral acids are neutralized prior to packaging, and the
38 materials in this waste stream are considered chemically compatible.

- 1 3gg. (2 x 16) The potential chemical incompatibility is the possible reaction between oxidizing
2 mineral acids (Group 2) and aromatic hydrocarbons (Group 16). Oxidation of the
3 hydrocarbon may produce enough heat to ignite the mixture. The potential chemical
4 incompatibility results from reporting trace quantities (<1 percent) of oxidizing acid in
5 generator waste streams. However, the oxidizing mineral acids are neutralized prior to
6 packaging, and the materials in this waste stream are considered chemically compatible.
- 7 3h. (2 x 17) The potential chemical incompatibility is the possible reaction between oxidizing
8 mineral acids (Group 2) and halogenated organics (Group 17), resulting in generation of
9 heat and toxic hydrogen halide fumes. The potential chemical incompatibility results
10 from reporting trace quantities (<1 percent) of oxidizing acid in generator waste streams.
11 However, the oxidizing mineral acids are neutralized prior to packaging, and the
12 materials in this waste stream are considered chemically compatible.
- 13 3i. (2 x 19) The potential chemical incompatibility is the possible condensation reaction
14 between oxidizing mineral acids (Group 2) and ketones (Group 19), resulting in
15 generation of heat. The potential chemical incompatibility results from reporting trace
16 quantities (<1 percent) of oxidizing acid in generator waste streams. However, the
17 oxidizing mineral acids are neutralized prior to packaging, and the materials in this waste
18 stream are considered chemically compatible.
- 19 3j. (2 x 20) The potential chemical incompatibility is the possible reaction between oxidizing
20 mineral acids (Group 2) and mercaptans (Group 20), resulting in generation of heat and
21 toxic hydrogen sulfide fumes. The potential chemical incompatibility results from
22 reporting trace quantities (<1 percent) of oxidizing acid in generator waste streams.
23 However, the oxidizing mineral acids are neutralized prior to packaging, and the
24 materials in this waste stream are considered chemically compatible.
- 25 4. (2 x 23) The potential chemical incompatibility is the possible reaction between oxidizing
26 mineral acids (Group 2) and metals and other elemental alloys as sheets, rods, moldings,
27 drops, etc. (Group 23). The oxidizing mineral acids are present only in trace quantities
28 (<1 percent) and are reacted prior to loading in waste containers. In addition, the
29 oxidizing mineral acids are fixed in the solidified product and would not be available to
30 react with the metal.
- 31 5. (2 x 23) The potential chemical incompatibility is the possible reaction between oxidizing
32 mineral acids (Group 2) and metals and other elemental alloys as sheets, rods, moldings,
33 drops, etc. (Group 23). The oxidizing mineral acids are present only in trace quantities
34 (<1 percent) as residues on glass or rubber gloves, and not as free liquids that could react
35 with metals.
- 36 6. (2 x 24) The potential chemical incompatibility is the solubilization of toxic metals and
37 metal compounds (Group 24) in oxidizing mineral acids (Group 2). The oxidizing
38 mineral acids are present only in trace quantities (<1 percent) and are reacted prior to
39 loading in waste containers. In addition, the oxidizing mineral acids are fixed in the
40 solidified product and would not be available to react with the metal.

- 1 7. (2 x 24) The potential chemical incompatibility is the possible reaction between oxidizing
2 mineral acids (Group 2) and toxic metals and compounds (Group 24). The oxidizing
3 mineral acids are present only in trace quantities (<1 percent) as residues on glass or
4 rubber gloves, and not as free liquids that could react with metals.
- 5 7a. (2 x 27) The potential chemical incompatibility is the possible reaction between oxidizing
6 mineral acids (Group 2) and nitro compounds (Group 27), resulting in generation of heat
7 and toxic nitrogen oxide fumes. The potential chemical incompatibility results from
8 reporting trace quantities (<1 percent) of oxidizing acid in generator waste streams.
9 However, the oxidizing mineral acids are neutralized prior to packaging, and the
10 materials in this waste stream are considered chemically compatible.
- 11 8. (2 x 101) The potential chemical incompatibility is the possible reaction between
12 oxidizing mineral acids (Group 2) and combustible materials (Group 101). The oxidizing
13 mineral acids are present only in trace quantities (<1 percent) as residues on glass or
14 rubber gloves, and not as free liquids that could react with metals.
- 15 9. (2 x 101) The potential chemical incompatibility is the possible decomposition of
16 combustible materials (Group 101) by the oxidizing mineral acids (Group 2). The
17 oxidizing mineral acids are present only in trace quantities (<1 percent) and are reacted
18 prior to loading in waste containers. In addition, the oxidizing mineral acids are fixed in
19 the solidified product and would not be available to react with the combustible materials.
- 20 9a. (2 x 102) The potential chemical incompatibility is the possible violent reaction between
21 oxidizing mineral acids (Group 2) and explosives (Group 102). However, explosives are
22 not allowed to be shipped to WIPP unless treatment renders them inert. Additionally,
23 mineral acids are present only in trace quantities (<1 percent) and are neutralized prior to
24 loading in waste containers. Therefore, the materials in this waste stream are considered
25 chemically compatible.
- 26 10. (2 x 106) The potential chemical incompatibility is the possible dissolution of oxidizing
27 mineral acids (Group 2) by water (Group 106). The oxidizing mineral acids are present
28 only in trace quantities (<1 percent) and reacted prior to loading in waste containers. Both
29 the water and the oxidizing mineral acids are fixed in the solidified product and would
30 not be available for reaction.
- 31 10a. (2 x 106) The potential chemical incompatibility is the possible reaction between
32 oxidizing mineral acids (Group 2) and water (Group 106), resulting in the generation of
33 heat. This potential incompatibility results from the presence of water in Ansulite™ fire
34 extinguishing agents and/or Radiac™ wash solutions and/or absorbed water. However,
35 the mineral acids are present only in trace quantities (<1 percent) and are neutralized
36 prior to loading in waste containers. In addition, the presence of any absorbed liquids are
37 immobilized in an absorbent and would not be available for reaction.
- 38 11. (3 x 4) The potential chemical incompatibility is the possible reaction between organic
39 acids (Group 3) and alcohols and glycols (Group 4). The organic acids are immobilized

- 1 in a cement matrix and not available to react with the alcohols and glycols. The alcohols
2 and glycols are also immobilized in the solidified product.
- 3 11aa. (3 x 4) The potential chemical incompatibility is the heat generated by polymerization of
4 alcohols and glycols (Group 4) by organic acids (Group 3). Carboxylic acids with á-
5 halogen substituents, or á-or â-hydroxyl substituents (e.g., citric acid) are the main
6 concern among the organic acids (Group 3). The potential chemical incompatibility
7 results from the use of citric acid in Radiac™ wash solutions. The solid citric acid is
8 diluted during preparation of the Radiac™ wash and is often further diluted prior to use
9 for decontamination. As a result, the potential for reactions of solid citric acid with
10 alcohols and glycols (Group 4) that are dispersed and fixed in waste forms is removed.
- 11 11b. (3 x 10) The potential chemical incompatibility is the possibility of acid-base reactions.
12 The organic acids (Group 3) are neutralized in a cement matrix and are not available to
13 react with the Caustics (Group 10). Thus, this potential chemical incompatibility would
14 not occur.
- 15 11c. (3 x 10) The potential chemical incompatibility is the heat generated by reactions of
16 organic acids (Group 3) with caustics (Group 10). The potential chemical incompatibility
17 results from the use of citric acid in Radiac™ wash solutions. The solid citric acid is
18 diluted during preparation of the Radiac™ wash and is often further diluted prior to use
19 for decontamination. As a result, the potential for reactions of solid citric acid with
20 caustics in test waste forms is removed. The caustic in the waste forms is calcium oxide.
21 Thus, the more significant incompatibility is potential hydrolysis reaction between water
22 and calcium oxide to release heat. Because the calcium oxide is dispersed in the wastes,
23 reaction is considered unlikely.
- 24 11d. (3 x 15) The potential chemical incompatibility is toxic and corrosive fumes generated by
25 reactions of organic acids (Group 3) with metal fluoride salts (Group 15). The potential
26 chemical incompatibility results from the use of citric acid in Radiac™ wash solutions.
27 The solid citric acid is diluted during preparation of the Radiac™ wash and is often
28 further diluted prior to use for decontamination. As a result, the potential for reactions of
29 solid citric acid with fluoride salts in waste forms is removed.
- 30 12. (3 x 24) The potential chemical incompatibility is the possible reaction between organic
31 acids (Group 3) and toxic metals and compounds (Group 24). The organic acids are
32 neutralized prior to cementation and do not exist as free acids in the resulting product.
33 Based on the immobilization of the acids, reactions are considered highly unlikely. In this
34 case, solubilization is not possible.
- 35 12aa. (3 x 24) The potential chemical incompatibility is solubilization of toxic metals (Group
36 24) by complexation with organic acids (Group 3). The potential chemical
37 incompatibility results from the use of citric acid in Radiac™ wash solutions. The solid
38 citric acid is diluted during preparation of the Radiac™ wash and is often further diluted
39 prior to use for decontamination. As a result, the potential for reactions of solid citric acid
40 with toxic metals in waste forms is removed.

- 1 12bbb. (3 x 104) The potential chemical incompatibility is decomposition of the hydrocarbon
2 moiety of organic acids (Group 3) by oxidizing agents (Group 104) resulting in heat and
3 gas formation. The potential chemical incompatibility results from the use of citric acid in
4 Radiac™ wash solutions. The solid citric acid is diluted during preparation of the
5 Radiac™ wash and is often further diluted prior to use for decontamination. As a result,
6 the potential for reactions of solid citric acid with oxidizing agents that are dispersed and
7 fixed in waste forms is removed.
- 8 12bb. (4 x 104) The potential chemical incompatibility is formation of unstable compounds by
9 reaction of alcohols and glycols (Group 4) with oxidizing agents (Group 104). However
10 the alcohols and glycols are present as trace quantities (<1 percent) in the waste stream,
11 and they are further isolated by dissemination within the waste stream. Additionally,
12 oxidizing agents must be neutralized prior to shipment to WIPP. Therefore, the final
13 waste form will contain compatible materials.
- 14 12b. (7 x 17) The potential chemical incompatibility between amines (Group 7) and
15 halogenated organics (Group 17) would not occur because the halogenated organics are
16 solidified and are not available for reaction.
- 17 12c. (7 x 24) The potential chemical incompatibility is the possible increase in the solubility of
18 toxic metal compounds in water due to amines acting as potential surfactants. The amines
19 are present only in trace (<1 percent) and are immobilized through absorption on sorbent
20 materials. Also, these solid waste forms usually contain very little water and excess
21 sorbents are added to waste containers to sorb any fluids.
- 22 12d. (7 x 104) The potential chemical incompatibility is formation of toxic nitrogen oxide
23 fumes by reaction of amines (Group 7) with oxidizing agents (Group 104). However, the
24 alcohols and glycols are present as trace quantities (<1 percent) in the waste stream, they
25 are further isolated by dissemination within the waste stream. Additionally, oxidizing
26 agents must be neutralized prior to shipment to WIPP. Therefore, the final waste form
27 will contain compatible materials.
- 28 12e. (8 x 23) The potential chemical incompatibility is combustion of some azo compounds
29 (Group 8) on contact with surfaces of metal sheets, rods, drops, etc (Group 23). However
30 the azo compounds are present as trace quantities (<1 percent) in the waste stream and
31 are further isolated by dissemination within the waste stream. Therefore, spontaneous
32 combustion by reaction with metal surfaces is unlikely.
- 33 12f. (8 x 106) The potential chemical incompatibility is the generation of nitrogen gas by
34 reaction of some azo compounds (Group 8) with water (Group 106). This potential
35 incompatibility results from the presence of water in Ansulite™ fire extinguishing agents
36 and/or Radiac™ wash solutions and/or absorbed water. However, the azo compounds are
37 present only in trace quantities (T<1 percent) and are disseminated in the waste
38 containers, which minimizes their potential to form nitrogen gas. In addition, the
39 presence of any absorbed liquids are immobilized in an absorbent and would not be
40 available for reaction.

- 1 13. (10 x 17) The potential chemical incompatibility is the possible reaction between caustics
2 (Group 10) and halogenated organics (Group 17). The caustic in this content code is
3 calcium oxide, a solid, which is dispersed in the chloride salts. The halogenated organics
4 are present in only trace quantities (T<1 percent) and are absorbed, immobilized, or
5 solidified. Due to the immobilization of the calcium oxide in the salt, reactions are
6 considered highly unlikely.
- 7 13a. (10 x 19) The potential chemical incompatibility is the possible self-condensation of
8 ketones (Group 19) catalyzed by caustics (Group 10). The caustic in this content code is
9 calcium oxide, a solid, which is dispersed in the chloride salts. Due to the immobilization
10 of the calcium oxide in salt, reactions are considered highly unlikely.
- 11 14. (10 x 23) The potential incompatibility is the possible reaction between caustics (Group
12 10) metals and other elemental alloys as sheets, rods, moldings, drops, etc. (Group 23).
13 The caustic in this waste stream code is calcium oxide, a solid, which is dispersed in the
14 chloride salts. Due to the immobilization of the calcium oxide in salt, dissolution of
15 metals in caustics is not possible.
- 16 15. (10 x 23) The potential incompatibility is the possible dissolution of metals and other
17 elemental alloys as sheets, rods, moldings, drops, etc. (Group 23) in caustics (Group 10).
18 The caustics are present only in trace quantities (<1 percent) and are reacted prior to
19 loading in waste containers. In addition, the caustics are fixed in the cemented sludge and
20 would not be available to react with the metals.
- 21 16. (10 x 24) The potential chemical incompatibility is the possible solubilization of toxic
22 metals (Group 24) in caustics (Group 10). The caustic in this content code is calcium
23 oxide, a solid, which is dispersed in the chloride salts. In this case, solubilization is not
24 possible.
- 25 16a. (10 x 24) The potential incompatibility is the possible solubility of toxic metals (Group
26 24) in caustics (Group 10). The caustics are present only in trace (<1 percent quantities
27 and are reacted prior to loading in waste containers. In addition, the caustics are fixed in
28 the cemented sludge and would not be available to react with the metals.
- 29 16b. (10 x 27) The potential chemical incompatibility is the formation of salts from nitro
30 alkanes (Group 27) and caustics (Group 10) in the presence of water. The only caustic in
31 this content code is calcium oxide, a solid, which is dispersed in the chloride salts. In
32 addition, liquids are immobilized through absorption on sorbent materials. Due to the
33 immobilization of the caustic in the fused salt, this reaction would not occur.
- 34 16c. (10 x 102) The potential chemical incompatibility is the possible violent reaction between
35 caustics (Group 10) and explosives (Group 102) due to the generation of heat. However,
36 explosives are not allowed to be shipped to WIPP unless treatment renders them inert.
37 Additionally, caustics are present only in minor quantities (<10 percent) and are
38 neutralized prior to loading in waste containers. Therefore, the materials in this waste
39 stream are considered chemically compatible.

- 1 17. (10 x 107) This potential incompatibility is an artifact of the EPA method. Calcium oxide
2 appears in Groups 10 and 107, and is compatible within itself.
- 3 17a. (14 x 104) This potential incompatibility is the reaction of ethers (Group 14) with strong
4 oxidizers (Group 104) to produce heat, and possibly ignition or explosions. This
5 incompatibility arises from the presence of diethylene glycol monobutyl ether in
6 Ansulite™ fire extinguishing agents. However, the strong oxidizers are present in trace
7 quantities (<1 percent) and disseminated in the waste, making ignition or explosions
8 unlikely in the event the fire extinguishers are used.
- 9 17b. (14 x 107) This potential chemical incompatibility is the reaction of ethers (Group 14)
10 with water reactives (Group 107). This incompatibility arises from the presence of
11 diethylene glycol monobutyl ether in Ansulite™ fire extinguishing agents. However, the
12 water reactive substances are present in trace quantities (<1 percent) and disseminated in
13 the waste, making reactions unlikely in the event the fire extinguishers are used.
- 14
- 15 18. (15 x 107) This potential chemical incompatibility is the reaction of fluorides (Group 15)
16 and water reactive substances (Group 107). The solid fluorides are present in only trace
17 quantities (T<1 percent) and form part of the pyrochemical salt matrix. Calcium oxide,
18 the only water reactive substance present, is a solid dispersed in the pyrochemical salt
19 matrix. These salts always occur with each other and are compatible.
- 20
- 21 18a. (17 x 20) The potential chemical incompatibility is the possible reaction between
22 halogenated organics (Group 17) and mercaptans (Group 20), resulting in generation of
23 heat. The potential chemical incompatibility results from reporting trace quantities (<1
24 percent) of halogenated organics and mercaptans in generator waste streams. However,
25 the chemicals are neutralized prior to packaging, and the materials in this waste stream
26 are considered chemically compatible.
- 27 19. (17 x 23) The potential chemical incompatibility is the reaction of halogenated organics
28 (Group 17) with metals and other elemental alloys as sheets, rods, moldings, drops, etc.
29 (Group 23). The halogenated organics are present in only trace quantities (T1<1 percent)
30 and are fixed in cemented sludge and would not be available to react with the metals.
- 31 20. (17 x 23) The potential chemical incompatibility is the reaction of halogenated organics
32 (Group 17) with metals and other elemental alloys, as sheets, rods, moldings, drops, etc.
33 (Group 23). The halogenated organics are present in only trace quantities (T<1 percent)
34 and are absorbed on combustibles. The halogenated organics are not present as free
35 liquids to react with the metals.
- 36 21. (17 x 23) The potential chemical incompatibility is the potential reaction between
37 halogenated organics (Group 17) and metals and other elemental alloys as sheets, rods,

- 1 drops, moldings, etc. (Group 23). Aluminum and magnesium in bulk forms are especially
2 reactive with halogenated hydrocarbons, releasing much heat. Although this is a potential
3 incompatibility, the potential effects are considered minimal for the following reasons.
4 First, the halogenated hydrocarbons are only present in trace quantities (<1 percent by
5 weight) and are immobilized through absorption on sorbent materials or solidification
6 with calcium silicates or gypsum-base processes. Second, although the metals of concern
7 may occur in dominant quantities in the content code, the metals only occur as large
8 pieces and not in powder form. Due to the trace quantities of immobilized halogenated
9 organics and the non-powder size of the metal pieces, any reaction that may occur will
10 produce minimal heat.
- 11 22. (17 x 23) The potential chemical incompatibility is the reaction of halogenated organics
12 (Group 17) with metals and other elemental alloys, as sheets, rods, moldings, drops, etc.
13 (Group 23). The halogenated organics are present in only very small trace quantities (<1
14 part per million) as residual films on the glass and not as free liquids that could react with
15 metals.
- 16 23. (17 x 23) The potential chemical incompatibility is the reaction of halogenated organics
17 (Group 17) with metals and other elemental alloys as sheets, rods, moldings, drops, etc.
18 (Group 23). The halogenated organics are present in only trace quantities (<1 percent) as
19 coatings on solid organic materials and are not present as free liquids that could react
20 with metals.
- 21 24. (17 x 23) The potential chemical incompatibility is the reaction of halogenated organics
22 (Group 17) with metals and other elemental alloys as sheets, rods, moldings, drops, etc.
23 (Group 23). The halogenated organics are present in only trace quantities (<1 percent) as
24 coating on the inorganic solid materials and are not present as free liquids that could react
25 with metals.
- 26 25. (17 x 23) The potential chemical incompatibility is the reaction of halogenated organics
27 (Group 17) with metals and other elemental alloys as sheets, rods, moldings, drops, etc.
28 (Group 23). The halogenated organics are fixed in the cemented product and would not
29 be available for reaction.
- 30 26. (17 x 23) The potential chemical incompatibility is the reaction of halogenated organics
31 (Group 17) with metals and other elemental alloys, as sheets, rods, moldings, drops, etc.
32 (Group 23). The halogenated organics are fixed in the solidified product and are not
33 available for reaction with the metals.
- 34 27. (17 x 23) The potential chemical incompatibility is the reaction of halogenated organics
35 (Group 17) with metals and other elemental alloys, as sheets, rods, moldings, drops, etc.
36 (Group 23). An absorbent has been added to immobilize any free liquids that may exist.
37 Due to the trace quantities and immobilization of the halogenated organics, reactions are
38 highly unlikely.

- 1 28. (17 x 104) The potential chemical incompatibility is the reaction of halogenated organics
2 (Group 17) with oxidizing agents (Group 107), resulting in the liberation of heat and
3 formation of toxic gases. The halogenated organics are present in only trace quantities
4 (<1 percent) and are not in the form of free liquids. Additionally, the oxidizing agents are
5 neutralized prior to loading waste containers. Therefore, based on the neutralization of
6 the oxidizing agents, reactions are considered highly unlikely.
- 7 28a. (18 x 106) The potential incompatibility is the possible reaction between isocyanates
8 (Group 18) with water (Group 106). The isocyanates are present only in trace quantities
9 (<1 percent). The water is usually fixed in the solidified product and would not be
10 available for reaction.
- 11 28aa. (18 x 106) The potential chemical incompatibility is between isocyanates (Group 18) and
12 water (Group 106) to generate carbon dioxide gas and heat. The potential chemical
13 incompatibility results from the use of water in Ansulite™ fire extinguishing agents and
14 Radiac™ wash solutions. However, isocyanates in the waste forms are present in trace
15 quantities (<1 percent), are neutralized and fixed prior to loading the waste containers,
16 and are not available for reaction. Therefore, the final waste form contains compatible
17 materials.
- 18 28aaa. (19 x 20) The potential chemical incompatibility is the reaction between ketones (Group
19 19) and mercaptans (Group 20), resulting in heat generation. These chemicals are present
20 only in trace quantities (<1 percent) as coatings on laboratory glassware. Therefore,
21 contact between the chemicals, if it occurs, will be limited.
- 22 28b. (21 x 101) The potential chemical incompatibility is the reaction of alkali and alkaline
23 earth metals (Group 21) with residual water present in the combustible materials (101),
24 resulting in heat generation and ignition of the combustible materials. However, the
25 combustible materials are polyethylene and polyvinyl chloride packaging materials which
26 contain no residual water. Additionally, alkali and alkaline earth metals must be
27 neutralized prior to shipment to WIPP. Therefore, the final waste form will contain
28 compatible materials.
- 29 28c. (21 x 104) The potential chemical incompatibility is the violent reaction between alkali
30 and alkaline earth metals (Group 21) and oxidizing agents (Group 104). Oxidizing agents
31 are present in trace quantities (<1 percent) and are neutralized prior to packaging.
32 Additionally, alkali and alkaline earth metals must be neutralized prior to shipment to
33 WIPP. Therefore, the final waste form will contain compatible materials.
- 34 28d. (21 x 106) The potential chemical incompatibility is the violent reaction between alkali
35 and alkaline earth metals (Group 21) and water (Group 106), resulting in the evolution of
36 hydrogen gas and formation of strong caustics. However, alkali and alkaline earth metals
37 must be neutralized prior to shipment to WIPP. Therefore, the final waste form will
38 contain compatible materials.

- 1 28e. (22 x 106) The potential chemical incompatibility is the reaction of metal powders
2 (Group 22) with water (Group 106), resulting in the evolution of hydrogen gas and
3 production of heat. Metal powders or shavings are present as trace quantities (<1 percent)
4 on paper, rags, and rubber. This potential incompatibility results from the presence of
5 water in Ansulite™ fire extinguishing agents and/or Radiac™ wash solutions and/or
6 absorbed water. However, metal powders or shavings are present as trace quantities (<1
7 percent) on paper, rags, and rubber, which minimizes their potential to form hydrogen
8 gas. In addition, the presence of any absorbed liquids are immobilized in an absorbent
9 and would not be available for reaction.
- 10 29. (23 x 104) The potential incompatibility is the possible reaction between metals and other
11 elemental alloys as sheets, rods, moldings, drops, etc. (Group 23) and oxidizing agents
12 (Group 104). The oxidizing agents are present only in trace quantities (<1 percent) and
13 reacted prior to loading in waste containers. The waste is mixed with cement to absorb
14 any residual liquid. Due to the immobilization and prior reaction of the oxidizing agents,
15 reactions are highly unlikely.
- 16 30. (23 x 104) The potential incompatibility is the possible reaction between metals, other
17 elemental alloys as sheets, rods, moldings, drops, etc. (Group 23) and oxidizing agents
18 (Group 104). The oxidizing agents are present only in trace quantities (<1 percent) and
19 dissolved in aqueous solutions that were cemented into a solid monolith-type structure.
20 Due to the immobilization and prior reaction of the oxidizing agents, reactions will not
21 occur.
- 22 31. (23 x 107) The potential incompatibility is the possible reaction between metals and other
23 elemental alloys, as sheets, rods, moldings, drops, etc. (Group 23) and water reactive
24 substances (Group 107). The outer low carbon steel drum is the only Group 23 metal
25 found in this content code. Calcium oxide, the only water reactive substance present, is a
26 solid dispersed in the chloride salts. Based on the immobilization of the calcium oxide in
27 the salt, reactions are considered highly unlikely.
- 28 32. (23 x 107) The potential incompatibility is the possible reaction between metals and other
29 elemental alloys as sheets, rods, moldings, drops, etc. (Group 23) and water reactive
30 substances (Group 107). Calcium oxide, the only water reactive substance present, is a
31 solid dispersed in the chloride salts. Based on the immobilization of the calcium oxide in
32 the salt, reactions are considered highly unlikely.
- 33
- 34 33. (24 x 106) The potential chemical incompatibility is the possible solubilization of toxic
35 metals (Group 24), which is not a concern since the water (Group 106) from the sludge is
36 fixed in the cemented product and would not be available for reaction.
37
- 38 33a. (24 x 106) The potential chemical incompatibility is the possible solubilization of toxic
39 metals (Group 24) by water (Group 106). This potential chemical incompatibility results

- 1 from the use of water in Ansulite™ fire extinguishing agents or Radiac™ wash solutions.
2 Metals in the test waste forms are present in trace quantities (T<1 percent) as large pieces
3 and not in powdered form. As a result, only minimal heat is expected to be formed.
- 4 34. (24 x 106) The potential incompatibility is the possible solubilization of toxic metals
5 (Group 24). The water (Group 106) is fixed in the cemented product and would not be
6 available for reaction.
- 7 35. (24 x 107) The potential incompatibility is the possible reaction between toxic metals and
8 metal compounds (Group 24) and water reactive substances (Group 107). The metals are
9 present only in trace quantities (<1 percent by weight). Calcium oxide, the only water
10 reactive substance present, is a solid dispersed in the chloride salts. Based on the
11 immobilization of the calcium oxide in the salt, reactions are considered highly unlikely.
- 12 36. (24 x 107) The potential incompatibility is the possible reaction between toxic metals and
13 metal compounds (Group 24) and water reactive substances (Group 107). Calcium oxide,
14 the only water reactive substance present, is dispersed in chloride salts. Based on the
15 immobilization of the calcium oxide in the salts, reactions are considered highly unlikely.
- 16 36a. (25 x 101) The potential chemical incompatibility is the reaction of nitrides (Group 25)
17 with residual water present in the combustible materials (Group 101), resulting in
18 formation of ammonia gas, heat generation, and possible ignition of the combustible
19 materials. However, the combustible materials are polyethylene and polyvinyl chloride
20 packaging materials which contain no residual water. Additionally, any reactive nitrides
21 must be neutralized prior to shipment to WIPP. Therefore, the final waste form will
22 contain compatible materials.
- 23 36aa. (25 x 106) The potential chemical incompatibility is the reaction of nitrides (Group 25)
24 with water present in the combustible materials (101), resulting in formation of ammonia
25 gas, heat generation, and possible ignition of the combustible materials. However, any
26 reactive nitrides must be neutralized prior to shipment to WIPP. Therefore, the final
27 waste form will contain compatible materials.
- 28 36b. (27 x 104) The potential incompatibility is the possible reaction between nitro
29 compounds (Group 27) and oxidizing agents (Group 107). Calcium oxide, the only water
30 reactive substance present, is dispersed in chloride salts. Reactive oxidizing agents must
31 be neutralized prior to shipment to WIPP. Based on the immobilization of the calcium
32 oxide in the salts and neutralization of oxidizing agents, reactions are considered highly
33 unlikely.
- 34 36c. (29 x 104) The potential incompatibility is the possible reaction between saturated
35 aliphatics (Group 29) and oxidizing agents (Group 104). However, reactive oxidizing
36 agents must be neutralized prior to shipment to WIPP. Therefore, the final waste form
37 will contain compatible materials.

- 1 36d. (101 x 102) The potential incompatibility is the possible oxidation reaction between
2 combustibles (Group 101) and explosives (102). However, explosives must be reacted
3 prior to shipment to WIPP. Therefore, the final waste form will contain compatible
4 materials.
- 5 37. (101 x 104) The potential incompatibility is the possible reaction between combustible
6 materials (Group 101) and oxidizing agents (Group 104). The oxidizing agents are
7 present only in trace quantities (<1 percent) and are reacted prior to loading in waste
8 containers. In addition, cement is added to absorb any residual liquid. Due to the
9 immobilization and prior reaction of the oxidizing agents, this content code is considered
10 to be chemically compatible.
- 11 38. (101 x 104) The potential incompatibility is the possible reaction between combustible
12 materials (Group 101) and oxidizing agents (Group 104). The oxidizing agents are
13 present only in trace quantities (<1 percent) and are fixed in the solidified product. Due
14 to the immobilization and prior reaction of the oxidizing agents, this content code is
15 considered to be chemically compatible.
- 16 39. (101 x 107) The potential incompatibility is the possible reaction between combustible
17 and flammable materials (Group 101) and water reactive substances (Group 107). The
18 dominant combustible material in Group 101 is the polyethylene rigid drum liner.
19 Calcium oxide, the only water reactive substance present, is a solid dispersed in the
20 chloride salts. Based on the immobilization of the calcium oxide in the salt, reactions are
21 considered highly unlikely.
- 22 40. (102 x 104) The potential incompatibility is the possible violent reaction between
23 explosives (Group 102) and oxidizing agents (Group 104). However, both of these groups
24 must be neutralized before shipment to WIPP. Therefore, the final waste form will
25 contain compatible materials.
- 26 41. (104 x 107) The potential incompatibility is the possible violent reaction between
27 oxidizing agents (Group 104) and water reactives (Group 107). However, both of these
28 groups must be neutralized before shipment to WIPP. Therefore, the final waste form will
29 contain compatible materials.

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TABLES

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TABLE B2-1 SUMMARY OF POTENTIAL INCOMPATIBILITIES FOR WASTE FORMS AND CONTAINER MATERIAL					
Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Solidified inorganics	AL W005	Acids, mineral, oxidizing x ethers (2 x 14)	T x D	H F	3f
Solidified inorganics	AL W005	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	T x D	GT	3g
Solidified inorganics	AL W005	Acids, mineral, oxidizing x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (2 x 23)	T x D	GF H F	4
Solidified inorganics	AL W005	Acids, mineral, oxidizing x miscellaneous combustible and flammable materials (2 x 101)	T x D	H F GT	9
Solidified inorganics	AL W005	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	T x D	H	10 10a
Solidified inorganics	AL W005	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a 34
Lead/cadmium metal waste	AW M001	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a 34
Lead/cadmium metal waste	AW M002	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Filter	AW M003	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Lead/cadmium metal waste	AW W016	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	M x D	S	33a

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Uncategorized metal	AW W018	Metals, alkali, and alkaline earth, elemental and alloys x miscellaneous combustible and flammable materials (21 x 101)	D x D	H G F	28b
Uncategorized metal	AW W018	Metals, alkali, and alkaline earth, elemental and alloys x water and mixtures containing water (21 x 106)	D x D	GF H	28d
Uncategorized metal	AW W019	Metals, alkali, and alkaline earth, elemental and alloys x miscellaneous combustible and flammable materials (21 x 101)	D x D	H G F	28b
Uncategorized metal	AW W019	Metals, alkali, and alkaline earth, elemental and alloys x water and mixtures containing water (21 x 106)	D x D	GF H	28d
Heterogeneous	AW W020	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Uncategorized metal	AW W021	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Lead/cadmium metal waste	AW W022	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	M x D	S	33a 34
Lead/cadmium metal waste	ET M001	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Salt waste	IN M001	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Heterogeneous	IN M002	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Lead/cadmium metal waste	IN M004	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	M x D	S	33a
Lead/cadmium metal waste	IN M005	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	M x D	S	33a
Heterogeneous	IN W139	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Solidified inorganics	IN W146	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Solidified inorganics	IN W157	Acids, organic x alcohols and glycols (3 x 4)	M x T	H P	11 11a
Solidified inorganics	IN W157	Acids, organic x fluorides, inorganic (3 x 15)	M x D	GT	11d
Solidified inorganics	IN W157	Acids, organic x metals and metal compounds, toxic (3 x 24)	M x T	S	12 12aa
Solidified inorganics	IN W157	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	25

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Solidified inorganics	IN W157	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a 34
Inorganic nonmetal	IN W161	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Solidified inorganics	IN W166	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T1 x D	H F	25
Solidified inorganics	IN W166	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T1 x D	S	33a 34
Solidified organics	IN W167	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	D x D	H F	23
Solidified organics	IN W167	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Heterogeneous	IN W169	Amines, aliphatic and aromatic x halogenated organics (7 X 17)	D x T	H G	12b
Heterogeneous	IN W169	Amines, aliphatic and aromatic x metals and metal compounds, toxic (7 X 24)	D x T	S	12c
Heterogeneous	IN W169	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	20

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Heterogeneous	IN W169	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Heterogeneous	IN W170	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Heterogeneous	IN W171	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Heterogeneous	IN W172	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	33a
Solidified organics	IN W174	Acids, mineral, oxidizing x ethers (2 x 14)	D x D	H F	3f
Solidified organics	IN W174	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	D x D	GT	3g
Solidified organics	IN W174	Acids, mineral, oxidizing x metals, other elemental, and alloys, as sheets, rods, drops, moldings, etc. (2 x 23)	D x D	GF H F	4
Solidified organics	IN W174	Acids, mineral, oxidizing x miscellaneous combustible and flammable materials (2 x 101)	D x D	H F GT	9
Solidified organics	IN W174	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	D x D	H	10a
Solidified inorganics	IN W177	Caustics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (10 x 23)	T x D	GF H	15

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Solidified inorganics	IN W179	Nonoxidizing mineral acids x ethers (1 x 14)	T x D	H	Oaaa
Solidified inorganics	IN W179	Nonoxidizing mineral acids x fluorides, inorganic (1 x 15)	T x D	GT	Oaaaa
Solidified inorganics	IN W179	Nonoxidizing mineral acids x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (1 x 23)	T x D	GF H F	1
Solidified inorganics	IN W179	Nonoxidizing mineral acids x miscellaneous combustible and flammable materials (1 x 101)	T x D	H G	3
Solidified inorganics	IN W179	Nonoxidizing mineral acids x water and mixtures containing water (1 x 106)	T x D	H	3b
Solidified inorganics	IN W179	Acids, mineral, oxidizing x esters (2 x 14)	T x D	H F	3f
Solidified inorganics	IN W179	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	T x D	GT	3g
Solidified inorganics	IN W179	Acids, mineral, oxidizing x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (2 x 23)	T x D	GF H F	4
Solidified inorganics	IN W179	Acids, mineral, oxidizing x miscellaneous combustible and flammable materials (2 x 101)	T x D	H F GT	9
Solidified inorganics	IN W179	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	T x D	H	10a

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Solidified inorganics	IN W179	Organic acids x fluorides, inorganic (3 x 15)	T x D	GT	11d
Solidified inorganics	IN W179	Caustics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (10 x 23)	T x D	GF H	15
Solidified inorganics	IN W179	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	19
Solidified inorganics	IN W179	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a 34
Solidified inorganics	IN W181	Acids, mineral, oxidizing x ethers (2 x 14)	T x D	H F	3f
Solidified inorganics	IN W181	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	T x D	GT	3g
Solidified inorganics	IN W181	Acids, mineral, oxidizing x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (2 x 23)	T x D	GF H F	4
Solidified inorganics	IN W181	Acids, mineral, oxidizing x miscellaneous combustible and flammable materials (2 x 101)	T x D	H F GT	9
Solidified inorganics	IN W181	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	T x D	H	10 10a
Solidified inorganics	IN W181	Caustics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (10 x 23)	T x D	GF H	15

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Solidified inorganics	IN W181	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	25
Solidified inorganics	IN W181	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a 34
Heterogeneous	IN W186	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	20
Heterogeneous	IN W186	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Solidified inorganics	IN W188	Acids, mineral, oxidizing x ethers (2 x 14)	T x D	H F	3f
Solidified inorganics	IN W188	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	T x D	GT	3g
Solidified inorganics	IN W188	Acids, mineral, oxidizing x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (2 x 23)	T x D	GF H F	4
Solidified inorganics	IN W188	Acids, mineral, oxidizing x miscellaneous combustible and flammable materials (2 x 101)	T x D	H F GT	9
Solidified inorganics	IN W188	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	T x D	H	10

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Solidified inorganics	IN W188	Caustics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (10 x 23)	T x D	GF H	15
Solidified inorganics	IN W188	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	25
Solidified inorganics	IN W188	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a 34
Heterogeneous	IN W189	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Heterogeneous	IN W197	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Combustible	IN W198	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Combustible	IN W202	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Heterogeneous	IN W203	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Heterogeneous	IN W204	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Combustible	IN W205	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Filter	IN W214	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Solidified inorganics	IN W216	Acids, mineral, oxidizing x ethers (2 x 14)	T x D	H F	3f
Solidified inorganics	IN W216	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	T x D	GT	3g
Solidified inorganics	IN W216	Acids, mineral, oxidizing x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (2 x 23)	T x D	GF H F	4
Solidified inorganics	IN W216	Acids, mineral, oxidizing x miscellaneous combustible and flammable materials (2 x 101)	T x D	H F GT	9
Solidified inorganics	IN W216	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	T x D	H	10
Solidified inorganics	IN W216	Caustics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (10 x 23)	T x D	GF H	15
Solidified inorganics	IN W216	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	25
Solidified inorganics	IN W216	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a 34

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Solidified inorganics	IN W220	Acids, mineral, oxidizing x ethers (2 x 14)	T x D	H F	3f
Solidified inorganics	IN W220	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	T x D	GT	3g
Solidified inorganics	IN W220	Acids, mineral, oxidizing x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (2 x 23)	T x D	GF H F	4
Solidified inorganics	IN W220	Acids, mineral, oxidizing x miscellaneous combustible and flammable materials (2 x 101)	T x D	H F GT	9
Solidified inorganics	IN W220	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	T x D	H F GT	10
Solidified inorganics	IN W220	Caustics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (10 x 23)	T x D	GF H	15
Solidified inorganics	IN W220	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	25
Solidified inorganics	IN W220	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33 33a 34
Solidified inorganics	IN W221	Acids, organic x alcohols and glycols (3 x 4)	M x T	H P	11
Solidified inorganics	IN W221	Acids, organic x fluorides, inorganic (3 x 15)	M x D	GT	11d
Solidified inorganics	IN W221	Acids, organic x metals and metal compounds, toxic (3 x 24)	M x T	S	12

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Solidified inorganics	IN W221	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	25
Solidified inorganics	IN W221	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a 34
Solidified inorganics	IN W222	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	25
Solidified inorganics	IN W222	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33 33a
Heterogeneous	IN W225	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Solidified inorganics	IN W228	Acids, mineral, oxidizing x ethers (2 x 14)	T x D	H F	3f
Solidified inorganics	IN W228	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	T x D	GT	3g
Solidified inorganics	IN W228	Acids, mineral, oxidizing x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (2 x 23)	T x D	GF H F	4
Solidified inorganics	IN W228	Acids, mineral, oxidizing x miscellaneous combustible and flammable materials (2 x 101)	T x D	H F GT	9

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Solidified inorganics	IN W228	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	T x D	H F GT	10
Solidified inorganics	IN W228	Caustics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (10 x 23)	T x D	GF H	15
Solidified inorganics	IN W228	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	25
Solidified inorganics	IN W228	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33 33a
Inorganic nonmetal	IN W230	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	24
Inorganic nonmetal	IN W240	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T3 x D	H F	24
Inorganic nonmetal	IN W240	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Inorganic nonmetal	IN W243	Acids, mineral, oxidizing x alcohols & glycols. (2 x 4)	T x T	H F	3d
Inorganic nonmetal	IN W243	Acids, mineral, oxidizing x esters. (2 x 13)	T x T	H F	3ee
Inorganic nonmetal	IN W243	Acids, mineral, oxidizing x ethers. (2 x 14)	T x T	H F	3f

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Inorganic nonmetal	IN W243	Acids, mineral, oxidizing x hydrocarbons, aromatic. (2 x 16)	T x T	H F	3gg
Inorganic nonmetal	IN W243	Acids, mineral, oxidizing x halogenated organics. (2 x 17)	D x D	H F GT	3h
Inorganic nonmetal	IN W243	Acids, mineral, oxidizing x ketones. (2 x 19)	T x T	H F	3i
Inorganic nonmetal	IN W243	Acids, mineral, oxidizing x mercaptans & other organic sulfides. (2 x 20)	T x T	H F GT	3j
Inorganic nonmetal	IN W243	Acids, mineral, oxidizing x metals, other elemental, & alloy, as sheets, rods, moldings, drops, etc. (2 x 23)	T x T	GF H F	5
Inorganic nonmetal	IN W243	Acids, mineral, oxidizing x metals & metal compounds, toxic. (2 x 24)	T x T	S	7
Inorganic nonmetal	IN W243	Acids, mineral, oxidizing x nitro compounds. (2 x 27)	T x T	H F GT	7a
Inorganic nonmetal	IN W243	Acids, mineral, oxidizing x combustible & flammable materials, miscellaneous. (2 x 101)	T x T	H F GT	8
Inorganic nonmetal	IN W243	Acids, mineral, oxidizing x water & mixtures containing water. (2 x 106)	T x D	H	10a
Inorganic nonmetal	IN W243	Halogenated organics x mercaptans & other organic sulfides. (17 x 20)	T x T	H	18a
Inorganic nonmetal	IN W243	Halogenated organics x metals, other elemental, & alloy, as sheets, rods, moldings, drops, etc. (17 x 23)	T x D	H F	24
Inorganic nonmetal	IN W243	Ketones x mercaptans & other organic sulfides. (19 x 20)	T x T	H	28aaa

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Inorganic nonmetal	IN W243	Metals & metal compounds, toxic x water & mixtures containing water. (24 x 106)	T x D	S	33a
Inorganic nonmetal	IN W245	Acids, mineral, oxidizing x ethers (2 x 14)	T x D	H F	3f
Inorganic nonmetal	IN W245	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	T x D	GT	3g
Inorganic nonmetal	IN W245	Acids, mineral, oxidizing x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (2 x 23)	T x D	GF H F	5
Inorganic nonmetal	IN W245	Acids, mineral, oxidizing x miscellaneous combustible and flammable materials (2 x 101)	T x D	H F GT	8
Inorganic nonmetal	IN W245	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	T x D	H F GT	10a
Inorganic nonmetal	IN W245	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	24
Inorganic nonmetal	IN W245	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Inorganic nonmetal	IN W247	Acids, mineral, oxidizing x ethers (2 x 14)	T x D	H F	3f
Inorganic nonmetal	IN W247	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	T x D	GT	3g

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Inorganic nonmetal	IN W247	Acids, mineral, oxidizing x miscellaneous combustible and flammable materials (2 x 101)	T x D	H F GT	8
Inorganic nonmetal	IN W247	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	T x D	H F GT	10a
Inorganic nonmetal	IN W247	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Inorganic nonmetal	IN W249	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Combustible	IN W250	Amines, aliphatic and aromatic x metals and metal compounds, toxic (7 X 24)	T x D	S	12c
Combustible	IN W250	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Combustible	IN W252	Amines, aliphatic and aromatic x metals and metal compounds, toxic (7 X 24)	T x D	S	12c
Combustible	IN W252	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Combustible	IN W254	Amines, aliphatic and aromatic x metals and metal compounds, toxic (7 X 24)	T x D	S	12c
Combustible	IN W254	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Combustible	IN W256	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	M x D	S	33a
Heterogeneous	IN W259	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Soils	IN W263	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Heterogeneous	IN W265	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	24
Heterogeneous	IN W265	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Heterogeneous	IN W271	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Graphite	IN W272	Halogenated organics x metals other elemental & alloy, as sheets, rods, moldings, drops, etc. (17 x 23)	T x D	H F	24
Graphite	IN W275	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	20

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Graphite	IN W276	Halogenated organics x metals other elemental & alloy, as sheets, rods, moldings, drops, etc. (17 x 23)	T x D	H F	24
Uncategorized metal	IN W280	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Heterogeneous	IN W281	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Heterogeneous	IN W283	Nonoxidizing mineral acids x ethers (1 x 14)	T x D	H	0aaa
Heterogeneous	IN W283	Nonoxidizing mineral acids x fluorides, inorganic (1 x 15)	T x D	GT	0aaaa
Heterogeneous	IN W283	Nonoxidizing mineral acids x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (1 x 23)	T x D	GF H F	1
Heterogeneous	IN W283	Acids, mineral, non-oxidizing x metals and metal compounds, toxic (1 x 24)	T x M	S	2
Heterogeneous	IN W283	Acids, mineral, non-oxidizing x combustible and flammable materials, miscellaneous (1 x 101)	T x D	H G	3
Heterogeneous	IN W283	Nonoxidizing mineral acids x water and mixtures containing water (1 x 106)	T x D	H	3b
Heterogeneous	IN W283	Acids, mineral, oxidizing x esters (2 x 14)	T x D	H F	3f

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Heterogeneous	IN W283	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	T x D	GT	3g
Heterogeneous	IN W283	Acids, mineral, oxidizing x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (2 x 23)	T x D	GF H F	5
Heterogeneous	IN W283	Acids, mineral, oxidizing x metals and metals compounds, toxic (2 x 24)	T x M	S	7
Heterogeneous	IN W283	Acids, mineral, oxidizing x combustible and flammable materials (2 x 101)	T x D	H F GT	8
Heterogeneous	IN W283	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	T x D	H	10a
Heterogeneous	IN W283	Ethers x oxidizing agents, strong (14 x 104)	D x T	H F	17a
Heterogeneous	IN W283	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	24
Heterogeneous	IN W283	Isocyanates x water and mixtures containing water (18 x 106)	T x D	H G	28aa
Heterogeneous	IN W283	Metals, other elemental and alloys as sheets, rods, drops, moldings, etc. x oxidizing agents, strong (23 x 104)	D x T	H F	30
Heterogeneous	IN W283	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	M x D	S	33a

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Heterogeneous	IN W283	Combustible and flammable materials, miscellaneous x oxidizing agents, strong (101 x 104)	D x T	H F G	37
Heterogeneous	IN W285	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Uncategorized metal	IN W287	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	M x D	S	33a
Heterogeneous	IN W289	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	20
Heterogeneous	IN W289	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Uncategorized metal	IN W294	Amines, aliphatic and aromatic x halogenated organics (7 X 17)	D x D	H G	12b
Uncategorized metal	IN W294	Amines, aliphatic and aromatic x metals and metal compounds, toxic (7 X 24)	D x D	S	12c
Uncategorized metal	IN W294	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	D x D	H F	24
Uncategorized metal	IN W294	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Uncategorized metal	IN W296	Amines, aliphatic and aromatic x metals and metal compounds, toxic (7 X 24)	T x D	S	12c
Uncategorized metal	IN W296	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	24
Uncategorized metal	IN W296	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Uncategorized metal	IN W298	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	24
Uncategorized metal	IN W298	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Uncategorized metal	IN W300	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T1 x D	H F	24
Uncategorized metal	IN W300	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Heterogeneous	IN W302	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	20

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Solidified organics	IN W309	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	D x D	H F	23
Solidified organics	IN W309	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Salt waste	IN W311	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	20
Salt waste	IN W312	Caustics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (10 x 23)	M x D	GF H	14
Salt waste	IN W312	Caustics x metals and metal compounds, toxic (10 x 24)	M x T1	S	16
Salt waste	IN W312	Caustics x water reactive substances (10 x 107)	M x M	Extremely reactive	17
Salt waste	IN W312	Ethers x water reactive substances (14 x 107)	D x M	Extremely reactive	17b
Salt waste	IN W312	Fluorides, inorganic x water reactive substances (15 x 107)	D x M	Extremely reactive	18
Salt waste	IN W312	Metals, other elemental and alloys as sheets, rods, drops, moldings, etc. x water reactive substances (23 x 107)	D x M	Extremely reactive	31
Salt waste	IN W312	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T1 x D	S	33a

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Salt waste	IN W312	Metals and metal compounds, toxic x water and mixtures containing water (24 x 107)	T1 x M	Extremely reactive	35
Salt waste	IN W312	Combustible and flammable materials, miscellaneous x water and mixtures containing water (101 x 107)	D x M	Extremely reactive	39
Salt waste	IN W314	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	20
Heterogeneous	IN W323	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Combustible	IN W330	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Solidified inorganics	IN W347	Caustics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (10 x 23)	M x D	GF H	15
Uncategorized metal	LA W001	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Solidified inorganics	LA W002	Ethers x oxidizing agents, strong (14 x 104)	D x T2	H F	17a
Solidified inorganics	LA W002	Ethers x water reactive substances (14 x 107)	D x T2	Extremely reactive	17b

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Solidified inorganics	LA W002	Fluorides, inorganic x water reactive substances (15 x 107)	D x T2	Extremely reactive	18
Solidified inorganics	LA W002	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T2 x D	S	33a 34
Solidified inorganics	LA W003	Ethers x oxidizing agents, strong (14 x 104)	D x T2	H F	17a
Solidified inorganics	LA W003	Ethers x water reactive substances (14 x 107)	D x T2	Extremely reactive	17b
Solidified inorganics	LA W003	Fluorides, inorganic x water reactive substances (15 x 107)	D x T2	Extremely reactive	18
Solidified inorganics	LA W003	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T3 x D	S	33 33a
Solidified inorganics	LA W003	Combustible and flammable materials, miscellaneous x explosives (101 x 102)	D x T2	H E	36d
Solidified inorganics	LA W003	Combustible and flammable materials, miscellaneous x oxidizing agents, strong (101 x 104)	D x T2	H F G	37
Solidified inorganics	LA W003	Combustible and flammable materials, miscellaneous x water reactive substances (101 x 107)	D x T2	Extremely reactive	39
Combustible	LA W004	Nonoxidizing mineral acids x ethers (1 x 14)	T1 x D	H	0aaa
Combustible	LA W004	Nonoxidizing mineral acids x fluorides, inorganic (1 x 15)	T1 x D	GT	0aaaa

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Combustible	LA W004	Nonoxidizing mineral acids x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (1 x 23)	T1 x D	GF H F	1
Combustible	LA W004	Nonoxidizing mineral acids x miscellaneous combustible and flammable materials (1 x 101)	T1 x D	H G	3
Combustible	LA W004	Nonoxidizing mineral acids x water and mixtures containing water (1 x 106)	T1 x D	H	3b
Combustible	LA W004	Acids, mineral, oxidizing x esters (2 x 14)	T1 x D	H F	3f
Combustible	LA W004	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	T1 x D	GT	3g
Combustible	LA W004	Acids, mineral, oxidizing x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (2 x 23)	T1 x D	GF H F	4
Combustible	LA W004	Acids, mineral, oxidizing x miscellaneous combustible and flammable materials (2 x 101)	T1 x D	H F GT	9
Combustible	LA W004	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	T1 x D	H	10a
Combustible	LA W004	Organic acids x fluorides, inorganic (3 x 15)	T x D	GT	11d
Combustible	LA W004	Caustics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (10 x 23)	T x D	GF H	15

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Combustible	LA W004	Ethers x oxidizing agents, strong (14 x 104)	D x T1	H F	17a
Combustible	LA W004	Ethers x water reactive substances (14 x 107)	D x T	Extremely reactive	17b
Combustible	LA W004	Flourides, inorganic x water reactive substances (15 x 107)	D x T	Extremely reactive	18
Combustible	LA W004	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T1 x D	H F	20
Combustible	LA W004	Metals, other elemental and alloys as powders, vapors, or sponges x water and mixtures containing water (22 x 106)	T2 x D	GF H	28e
Combustible	LA W004	Metals, other elemental and alloys as sheets, rods, drops, molding, etc. x oxidizing agents, strong (23 x 104)	D x T1	H F	29
Combustible	LA W004	Metals, other elemental and alloys as sheets, rods, drops, moldings, etc. x water reactive substances (23 x 107)	D x T	Extremely reactive	31
Combustible	LA W004	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T1 x D	S	33a
Combustible	LA W004	Nitrides x combustible and flammable materials, miscellaneous (25 x 101)	T1 x D	H GF F	36a
Combustible	LA W004	Nitrides x water and mixtures containing water (25 x 106)	T1 x D	GF H	36aa

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Combustible	LA W004	Combustible and flammable materials, miscellaneous x explosives (101 x 102)	D x T2	H E	36d
Combustible	LA W004	Combustible and flammable materials, miscellaneous x oxidizing agents, strong (101 x 104)	D x T1	H F G	38
Combustible	LA W004	Combustible and flammable materials, miscellaneous x water reactive substances (101 x 107)	D x T	Extremely reactive	39
Uncategorized metal	LA W005	Acids, mineral, non-oxidizing x ethers (1 x 14)	T2 x D	H	0aaa
Uncategorized metal	LA W005	Acids, mineral, non-oxidizing x fluorides, inorganic (1 x 15)	T2 x D	G T	0aaaa
Uncategorized metal	LA W005	Acids, mineral, non-oxidizing x Metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (1 x 23)	T2 x D	GF H F	1
Uncategorized metal	LA W005	Acids, mineral, non-oxidizing x combustible and flammable materials, miscellaneous (1 x 101)	T2 x D	H G	3
Uncategorized metal	LA W005	Acids, mineral, non-oxidizing x water and mixtures containing water (1 x 106)	T2 x D	H	3b
Uncategorized metal	LA W005	Acids, mineral, oxidizing x ethers (2 x 14)	T2 x D	H F	3f
Uncategorized metal	LA W005	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	T2 x D	GT	3g

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Uncategorized metal	LA W005	Acids, mineral, oxidizing x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (2 x 23)	T2 x D	GF H F	5
Uncategorized metal	LA W005	Acids, mineral, oxidizing x combustible and flammable materials, miscellaneous (2 x 101)	T2 x D	H F GT	8
Uncategorized metal	LA W005	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	T2 x D	H	10a
Uncategorized metal	LA W005	Acids, organic x fluorides, inorganic (3 x 15)	T2 x D	GT	11d
Uncategorized metal	LA W005	Caustics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (10 x 23)	T2 x D	GF H	15
Uncategorized metal	LA W005	Ethers x oxidizing agents, strong (14 x 104)	D x T2	H F	17a
Uncategorized metal	LA W005	Ethers x water reactive substances (14 x 107)	D x T2	Extremely reactive	17b
Uncategorized metal	LA W005	Flourides, inorganic x water reactive substances (15 x 107)	D x T2	Extremely reactive	18
Uncategorized metal	LA W005	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T2 x D	H F	24
Uncategorized metal	LA W005	Metals, other elemental and alloys as sheets, rods, drops, moldings, etc. x oxidizing agents, strong (23 x 104)	D x T2	H F	30

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Uncategorized metal	LA W005	Metals, other elemental and alloys as sheets, rods, drops, moldings, etc. x water reactive substances (23 x 107)	D x T2	Extremely reactive	32
Uncategorized metal	LA W005	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Uncategorized metal	LA W005	Combustible and flammable materials, miscellaneous x oxidizing agents, strong (101 x 104)	D x T2	H F G	38
Uncategorized metal	LA W005	Combustible and flammable materials, miscellaneous x water reactive substances (101 x 107)	D x T2	Extremely reactive	39
Solidified inorganics	LA W006	Acids, mineral, non-oxidizing x ethers (1 x 14)	T2 x D	H	Oaaa
Solidified inorganics	LA W006	Acids, mineral, non-oxidizing x fluorides, inorganic (1 x 15)	T2 x D	G T	Oaaaa
Solidified inorganics	LA W006	Acids, mineral, non-oxidizing x Metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (1 x 23)	T2 x D	GF H F	1
Solidified inorganics	LA W006	Acids, mineral, non-oxidizing x combustible and flammable materials, miscellaneous (1 x 101)	T2 x D	H G	3
Solidified inorganics	LA W006	Acids, mineral, non-oxidizing x oxidizing agents, strong (1 x 104)	T2 x D	H GT	3aa

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Solidified inorganics	LA W006	Acids, mineral, non-oxidizing x water and mixtures containing water (1 x 106)	T2 x D	H	3b
Solidified inorganics	LA W006	Acids, mineral, oxidizing x ethers (2 x 14)	T2 x D	H F	3f
Solidified inorganics	LA W006	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	T2 x D	GT	3g
Solidified inorganics	LA W006	Acids, mineral, oxidizing x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (2 x 23)	T2 x D	GF H F	4
Solidified inorganics	LA W006	Acids, mineral, oxidizing x combustible and flammable materials, miscellaneous (2 x 101)	T2 x D	H F GT	9
Solidified inorganics	LA W006	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	T2 x D	H	10
Solidified inorganics	LA W006	Acids, organic x fluorides, inorganic (3 x 15)	T2 x D	GT	11d
Solidified inorganics	LA W006	Acids, organic x oxidizing agents, strong (3 x 104)	T2 x D	H GT	12bbb
Solidified inorganics	LA W006	Alcohols and glycols x oxidizing agents, strong (4 x 104)	T2 x D	H F	12bb
Solidified inorganics	LA W006	Amines, aliphatic and aromatic x oxidizing agents, strong (7 x 104)	T2 x D	H F GT	12d
Solidified inorganics	LA W006	Caustics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (10 x 23)	T1 x D	GF H	15

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Solidified inorganics	LA W006	Ethers x oxidizing agents, strong (14 x 104)	D x D	H F	17a
Solidified inorganics	LA W006	Ethers x water reactive substances (14 x 107)	D x T1	Extremely reactive	17b
Solidified inorganics	LA W006	Flourides, inorganic x water reactive substances (15 x 107)	D x T1	Extremely reactive	18
Solidified inorganics	LA W006	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T2 x D	H F	25
Solidified inorganics	LA W006	Halogenated organics x oxidizing agents, strong (17 x 104)	T2 x D	H GT	28
Solidified inorganics	LA W006	Metals, alkali and alkaline earth, elemental x combustible and flammable materials, miscellaneous (21 x 101)	T x D	H G F	28b
Solidified inorganics	LA W006	Metals, alkali and alkaline earth, elemental x oxidizing agents, strong (21 x 104)	T x D	H F E	28c
Solidified inorganics	LA W006	Metals, alkali and alkaline earth, elemental x water and mixtures containing water (21 x 106)	T x D	GF H	28d
Solidified inorganics	LA W006	Metals, other elemental and alloys as sheets, rods, drops, moldings, etc. x oxidizing agents, strong (23 x 104)	D x D	H F	29
Solidified inorganics	LA W006	Metals, other elemental and alloys as sheets, rods, drops, moldings, etc. x water reactive substances (23 x 107)	D x T1	Extremely reactive	31

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Solidified inorganics	LA W006	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T1 x D	S	33a 34
Solidified inorganics	LA W006	Nitro compounds, organic x oxidizing agents, strong (27 x 104)	T2 x D	H E	36b
Solidified inorganics	LA W006	Hydrocarbons, aliphatic, saturated x oxidizing agents, strong (29 x 104)	T2 x D	H F	36c
Solidified inorganics	LA W006	Combustible and flammable materials, miscellaneous x explosives (101 x 102)	D x T	H E	36d
Solidified inorganics	LA W006	Combustible and flammable materials, miscellaneous x oxidizing agents, strong (101 x 104)	D x D	H F G	37
Solidified inorganics	LA W006	Combustible and flammable materials, miscellaneous x water reactive substances (101 x 107)	D x T1	Extremely reactive	39
Solidified inorganics	LA W006	Explosives x oxidizing agents, strong (102 x 104)	T x D	H E	40
Solidified inorganics	LA W006	Oxidizing agents, strong x water reactive substances (104 x 107)	D x T1	Extremely reactive	41
Uncategorized metal	LA W009	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	20
Combustible	LL M001	Acids, mineral, non-oxidizing x ethers (1 x 14)	T x D	H	0aaa

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Combustible	LL M001	Acids, mineral, non-oxidizing x fluorides, inorganic (1 x 15)	T x D	G T	0aaaa
Combustible	LL M001	Acids, mineral, non-oxidizing x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (1 x 23)	T x D	GF H F	1
Combustible	LL M001	Acids, mineral, non-oxidizing x combustible and flammable materials, miscellaneous (1 x 101)	T x D	H G	3
Combustible	LL M001	Acids, mineral, non-oxidizing x water and mixtures containing water (1 x 106)	T x D	H	3b
Combustible	LL M001	Acids, mineral, oxidizing x ethers (2 x 14)	T x D	H F	3f
Combustible	LL M001	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	T x D	GT	3g
Combustible	LL M001	Acids, mineral, oxidizing x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (2 x 23)	T x D	GF H F	4
Combustible	LL M001	Acids, mineral, oxidizing x combustible and flammable materials, miscellaneous (2 x 101)	T x D	H F GT	9
Combustible	LL M001	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	T x D	H	10
Combustible	LL M001	Acids, organic x fluorides, inorganic (3 x 15)	T x D	GT	11d

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Combustible	LL M001	Caustics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (10 x 23)	T x D	GF H	15
Combustible	LL M001	Ethers x oxidizing agents, strong (14 x 104)	D x T	H F	17a
Combustible	LL M001	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	26
Combustible	LL M001	Metals, alkali and alkaline earth, elemental x combustible and flammable materials, miscellaneous (21 x 101)	T x D	H G F	28b
Combustible	LL M001	Metals, alkali and alkaline earth, elemental x water and mixtures containing water (21 x 106)	T x D	GF H	28d
Combustible	LL M001	Metals, other elemental and alloys as powders, vapors, or sponges x water and mixtures containing water (22 x 106)	T x D	GF H	28e
Combustible	LL M001	Metals, other elemental and alloys as sheets, rods, drops, molding, etc. x oxidizing agents, strong (23 x 104)	D x T	H F	30
Combustible	LL M001	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a 34
Combustible	LL M001	Combustible and flammable materials, miscellaneous x explosives (101 x 102)	D x T	H E	36d

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Combustible	LL M001	Combustible and flammable materials, miscellaneous x oxidizing agents, strong (101 x 104)	D x T	H F G	38
Uncategorized metal	LL W018	Acids, mineral, non-oxidizing x ethers (1 x 14)	T x D	H	0aaaa
Uncategorized metal	LL W018	Acids, mineral, non-oxidizing x fluorides, inorganic (1 x 15)	T x D	G T	0aaa
Uncategorized metal	LL W018	Acids, mineral, non-oxidizing x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (1 x 23)	T x D	GF H F	1
Uncategorized metal	LL W018	Acids, mineral, non-oxidizing x combustible and flammable materials, miscellaneous (1 x 101)	T x D	H G	3
Uncategorized metal	LL W018	Acids, mineral, non-oxidizing x water and mixtures containing water (1 x 106)	T x D	H	3b
Uncategorized metal	LL W018	Acids, mineral, oxidizing x ethers (2 x 14)	T x D	H F	3f
Uncategorized metal	LL W018	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	T x D	GT	3g
Uncategorized metal	LL W018	Acids, mineral, oxidizing x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (2 x 23)	T x D	GF H F	5
Uncategorized metal	LL W018	Acids, mineral, oxidizing x combustible and flammable materials, miscellaneous (2 x 101)	T x D	H F GT	8

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Uncategorized metal	LL W018	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	T x D	H	10a
Uncategorized metal	LL W018	Acids, organic x fluorides, inorganic (3 x 15)	T x D	GT	11d
Uncategorized metal	LL W018	Caustics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (10 x 23)	T x D	GF H	15
Uncategorized metal	LL W018	Ethers x oxidizing agents, strong (14 x 104)	D x T	H F	17a
Uncategorized metal	LL W018	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	22
Uncategorized metal	LL W018	Metals, alkali and alkaline earth, elemental x combustible and flammable materials, miscellaneous (21 x 101)	T x D	H G F	28b
Uncategorized metal	LL W018	Metals, alkali and alkaline earth, elemental x water and mixtures containing water (21 x 106)	T x D	GF H	28d
Uncategorized metal	LL W018	Metals, other elemental and alloys as powders, vapors, or sponges x water and mixtures containing water (22 x 106)	T x D	GF H	28e
Uncategorized metal	LL W018	Metals, other elemental and alloys as sheets, rods, drops, molding, etc. x oxidizing agents, strong (23 x 104)	D x T	H F	30

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Uncategorized metal	LL W018	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Uncategorized metal	LL W018	Combustible and flammable materials, miscellaneous x explosives (101 x 102)	D x T	H E	36d
Uncategorized metal	LL W018	Combustible and flammable materials, miscellaneous x oxidizing agents, strong (101 x 104)	D x T	H F G	38
Solidified inorganics	LL W019	Acids, mineral, non-oxidizing x alcohols and glycols (1 x 4)	M x T	H	0a
Solidified inorganics	LL W019	Acids, mineral, non-oxidizing x caustics (1 x 10)	M x M	H	0aa
Solidified inorganics	LL W019	Acids, mineral, non-oxidizing x ethers (1 x 14)	M x D	H	0aaa
Solidified inorganics	LL W019	Acids, mineral, non-oxidizing x fluorides, inorganic (1 x 15)	M x D	G T	0aaaa
Solidified inorganics	LL W019	Acids, mineral, non-oxidizing x halogenated organics (1 x 17)	M x T	H G T	0b
Solidified inorganics	LL W019	Acids, mineral, non-oxidizing x ketones (1 x 19)	M x T	H	0bb
Solidified inorganics	LL W019	Acids, mineral, non-oxidizing x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (1 x 23)	M x D	G F H F	1
Solidified inorganics	LL W019	Acids, mineral, non-oxidizing x metals and metal compounds, toxic (1 x 24)	M x T	S	2

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Solidified inorganics	LL W019	Acids, mineral, non-oxidizing x combustible and flammable materials, miscellaneous (1 x 101)	M x D	H G	3
Solidified inorganics	LL W019	Acids, mineral, non-oxidizing x explosives (1 x 102)	M x T	H E	3a
Solidified inorganics	LL W019	Acids, mineral, non-oxidizing x oxidizing agents, strong (1 x 104)	M x T	H GT	3aa
Solidified inorganics	LL W019	Acids, mineral, non-oxidizing x water and mixtures containing water (1 x 106)	M x D	H	3b
Solidified inorganics	LL W019	Acids, mineral, oxidizing x acids, organic (2 x 3)	M x T	G H	3c
Solidified inorganics	LL W019	Acids, mineral, oxidizing x alcohols and glycols (2 x 4)	M x T	H F	3d
Solidified inorganics	LL W019	Acids, mineral, oxidizing x caustics (2 x 10)	M x M	H	3e
Solidified inorganics	LL W019	Acids, mineral, oxidizing x ethers (2 x 14)	M x D	H F	3f
Solidified inorganics	LL W019	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	M x D	GT	3g
Solidified inorganics	LL W019	Acids, mineral, oxidizing x halogenated organics (2 x 17)	M x T	H F GT	3h
Solidified inorganics	LL W019	Acids, mineral, oxidizing x ketones (2 x 19)	M x T	H F	3i
Solidified inorganics	LL W019	Acids, mineral, oxidizing x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (2 x 23)	M x D	GF H F	4

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Solidified inorganics	LL W019	Acids, mineral, oxidizing x metals and metals compounds, toxic (2 x 24)	M x T	S	6
Solidified inorganics	LL W019	Acids, mineral, oxidizing x combustible and flammable materials (2 x 101)	M x D	H F GT	9
Solidified inorganics	LL W019	Acids, mineral, oxidizing x explosives (2 x 102)	M x T	H E	9a
Solidified inorganics	LL W019	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	M x D	H	10 10a
Solidified inorganics	LL W019	Acids, organic x caustics (3 x 10)	T x M	H	11b
Solidified inorganics	LL W019	Acids, organic x fluorides, inorganic (3 x 15)	T x D	GT	11d
Solidified inorganics	LL W019	Caustics x halogenated solvents (10 x 17)	M x T	H	13
Solidified inorganics	LL W019	Caustics x ketones (10 x 19)	M x T	H	13a
Solidified inorganics	LL W019	Caustics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (10 x 23)	M x D	GF H	16a
Solidified inorganics	LL W019	Caustics x metals and metal compounds, toxic (10 x 24)	M x T	S	16a
Solidified inorganics	LL W019	Caustics x explosives (10 x 102)	M x T	H E	16c
Solidified inorganics	LL W019	Ethers x oxidizing agents, strong (14 x 104)	D x T	H F	17a
Solidified inorganics	LL W019	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	25

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Solidified inorganics	LL W019	Metals, other elemental and alloys as sheets, rods, drops, molding, etc. x oxidizing agents, strong (23 x 104)	D x T	H F	29
Solidified inorganics	LL W019	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a 34
Solidified inorganics	LL W019	Combustible and flammable materials, miscellaneous x explosives (101 x 102)	D x T	H E	36d
Solidified inorganics	LL W019	Combustible and flammable materials, miscellaneous x oxidizing agents, strong (101 x 104)	D x T	H F G	37
Heterogeneous	NT W001	Acids, mineral, non-oxidizing x alcohols and glycol (1 x 4)	M x T	H	0a
Heterogeneous	NT W001	Acids, mineral, non-oxidizing x caustics (1 x 10)	M x M	H	0aa
Heterogeneous	NT W001	Acids, mineral, non-oxidizing x ethers (1 x 14)	M x D	H	0aaa
Heterogeneous	NT W001	Acids, mineral, non-oxidizing x fluorides, inorganic (1 x 15)	M x D	GT	0aaaa
Heterogeneous	NT W001	Acids, mineral, non-oxidizing x halogenated organics (1 x 17)	M x T	H GT	0b
Heterogeneous	NT W001	Acids, mineral, non-oxidizing x ketones (1 x 19)	M x T	H	0bb
Heterogeneous	OR W044	Acids, mineral, non-oxidizing x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (1 x 23)	T x D	GF H F	1

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Heterogeneous	NT W001	Acids, mineral, non-oxidizing x metals and metal compounds, toxic (1 x 24)	M x T	S	2
Heterogeneous	NT W001	Acids, mineral, non-oxidizing x combustible and flammable materials, miscellaneous (1 x 101)	M x T	H G	3
Heterogeneous	NT W001	Acids, mineral, non-oxidizing x explosives (1 x 102)	M x T	H E	3a
Heterogeneous	NT W001	Acids, mineral, non-oxidizing x oxidizing agents, strong (1 x 104)	M x T	H GT	3aa
Heterogeneous	NT W001	Acids, mineral, non-oxidizing x water and mixtures containing water (1 x 106)	M x D	H	3b
Heterogeneous	NT W001	Acids, mineral, oxidizing x acids, organic (2 x 3)	M x T	G H	3c
Heterogeneous	NT W001	Acids, mineral, oxidizing x alcohols and glycols (2 x 4)	M x T	H F	3d
Heterogeneous	NT W001	Acids, mineral, oxidizing x caustics (2 x 10)	M x M	H	3e
Heterogeneous	NT W001	Acids, mineral, oxidizing x ethers (2 x 14)	M x D	H F	3f
Heterogeneous	NT W001	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	M x D	GT	3g
Heterogeneous	NT W001	Acids, mineral, oxidizing x halogenated organics (2 x 17)	M x T	H F GT	3h
Heterogeneous	NT W001	Acids, mineral, oxidizing x ketones (2 x 19)	M x T	H F	3i
Heterogeneous	NT W001	Acids, mineral, oxidizing x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (2 x 23)	T x M	GF H F	4 5

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Heterogeneous	NT W001	Acids, mineral, oxidizing x metals and metal compounds, toxic (2 x 24)	M x T	S	6 7
Heterogeneous	NT W001	Acids, mineral, oxidizing x combustible and flammable materials, miscellaneous (2 x 101)	M x T	H F GT	8 9
Heterogeneous	NT W001	Acids, mineral, oxidizing x combustible and flammable materials, miscellaneous (2 x 101)	T x D	H F GT	8
Heterogeneous	NT W001	Acids, mineral, oxidizing x explosives (2 x 102)	M x T	H E	9a
Heterogeneous	NT W001	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	M x D	H	10a
Heterogeneous	NT W001	Acids, organic x caustics (3 x 10)	T x M	H	11b
Heterogeneous	NT W001	Acids, organic x fluorides, inorganic (3 x 15)	T x D	GT	11d
Heterogeneous	NT W001	Caustics x halogenated organics (10 x 17)	M x T	H	13
Heterogeneous	NT W001	Caustics x ketones (10 x 19)	M x T	H	13a
Heterogeneous	NT W001	Caustics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (10 x 23)	T x M	GF H F	15
Heterogeneous	NT W001	Caustics x metals and metal compounds, toxic (10 x 24)	M x T	S	16a
Heterogeneous	NT W001	Caustics x explosives (10 x 102)	M x T	H E	16c
Heterogeneous	NT W001	Ethers x oxidizing agents, strong (14 x 104)	D x T	H F	17a

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Heterogeneous	NT W001	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x M	H F	20 24
Heterogeneous	NT W001	Metals, alkali, and alkaline earth, elemental, and alloys x miscellaneous combustible and flammable materials (21 x 101)	T x D	H G F	28b
Heterogeneous	NT W001	Metals, other elemental and alloys as sheets, rods, drops, molding, etc. x oxidizing agents, strong (23 x 104)	M x T	H F	30
Heterogeneous	NT W001	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33 33a
Heterogeneous	NT W001	Combustible and flammable materials, miscellaneous x explosives (101 x 102)	D x T	H E	36d
Heterogeneous	NT W001	Combustible and flammable materials, miscellaneous x oxidizing agents, strong (101 x 104)	D x T	H F G	38
Heterogeneous	OR W040	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Solidified inorganics	OR W042	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33 33a
Heterogeneous	OR W044	Acids, mineral, non-oxidizing x ethers (1 x 14)	T x D	H	0aaa

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Heterogeneous	OR W044	Acids, mineral, non-oxidizing x fluorides, inorganic (1 x 15)	T x D	G T	0aaaa
Heterogeneous	OR W044	Acids, mineral, non-oxidizing x combustible and flammable materials, miscellaneous (1 x 101)	T x D	H G	3
Heterogeneous	OR W044	Acids, mineral, non-oxidizing x water and mixtures containing water (1 x 106)	T x D	H	3b
Heterogeneous	OR W044	Acids, mineral, oxidizing x ethers (2 x 14)	T x D	H F	3f
Heterogeneous	OR W044	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	T x D	GT	3g
Heterogeneous	OR W044	Acids, mineral, oxidizing x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (2 x 23)	T x D	GF H F	5
Heterogeneous	OR W044	Acids, mineral, oxidizing x combustible and flammable materials, miscellaneous (2 x 101)	T x D	H F GT	8
Heterogeneous	OR W044	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	T x D	H	10a
Heterogeneous	OR W044	Acids, organic x fluorides, inorganic (3 x 15)	T2 x D	GT	11d
Heterogeneous	OR W044	Azo compounds, diazo compounds, hydrazines x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (8 x 23)	T2 x D	H F G	12e

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Heterogeneous	OR W044	Azo compounds, diazo compounds, hydrazines x water and mixtures containing water (8 x 106)	T2 x D	G	12f
Heterogeneous	OR W044	Caustics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (10 x 23)	T1 x D	GF H	15
Heterogeneous	OR W044	Ethers x oxidizing agents, strong (14 x 104)	D x T1	H F	17a
Heterogeneous	OR W044	Halogenated organics x metals, other elemental and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T2 x D	H F	20 22
Heterogeneous	OR W044	Metals, other elemental and alloys as sheets, rods, drops, molding, etc. x oxidizing agents, strong (23 x 104)	D x T1	H F	29
Heterogeneous	OR W044	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Heterogeneous	OR W044	Combustible and flammable materials, miscellaneous x oxidizing agents, strong (101 x 104)	D x T1	H F G	38
Heterogeneous	OR W045	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Solidified inorganics	OR W046	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Heterogeneous	OR W047	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Solidified inorganics	PA W015	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a 34
Solidified inorganics	RF M001	Halogenated organics x metals, other elemental and alloys as sheets, rods, moldings, etc. (17 x 23)	T1 x D	H F	19
Solidified inorganics	RF M001	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T1 x D	S	33a
Heterogeneous	RF M002	Halogenated organics x metals, other elemental and alloys as sheets, rods, moldings, etc. (17 x 23)	T x D	H F	20
Heterogeneous	RF W008	Halogenated organics x metals, other elemental and alloys as sheets, rods, moldings, etc. (17 x 23)	T x D	H F	23
Solidified inorganics	RF W010	Halogenated organics x metals, other elemental and alloys as sheets, rods, moldings, etc. (17 x 23)	T1 x D	H F	19
Solidified inorganics	RF W010	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Uncategorized metal	RF W011	Halogenated organics x metals, other elemental and alloys as sheets, rods, moldings, etc. (17 x 23)	T1 x D	H F	21

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Uncategorized metal	RF W011	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Heterogeneous	RF W012	Halogenated organics x metals, other elemental and alloys as sheets, rods, moldings, etc. (17 x 23)	T x D	H F	20
Solidified inorganics	RF W013	Halogenated organics x metals, other elemental and alloys as sheets, rods, moldings, etc. (17 x 23)	D x D	H F	25
Inorganic non-metal	RF W026	Halogenated organics x metals, other elemental and alloys as sheets, rods, moldings, etc. (17 x 23)	T x D	H F	24
Lead/cadmium metal waste	RF W029	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Inorganic non-metal	RF W032	Halogenated organics x metals, other elemental and alloys as sheets, rods, moldings, etc. (17 x 23)	T3 x D	H F	22
Inorganic non-metal	RF W032	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Inorganic non-metal	RF W032	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Heterogeneous	RF W036	Halogenated organics x metals, other elemental and alloys as sheets, rods, moldings, etc. (17 x 23)	T x D	H F	24

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Heterogeneous	RF W036	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Uncategorized metal	RF W037	Halogenated organics x metals, other elemental and alloys as sheets, rods, moldings, etc. (17 x 23)	T1 x D	H F	24
Uncategorized metal	RF W037	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Solidified inorganics	RF W038	Acids, organic x fluorides, inorganic (3 x 15)	T x D	G T	11d
Solidified inorganics	RF W040	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	26
Solidified inorganics	RF W040	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Lead/cadmium metal waste	RF W041	Acids, mineral, oxidizing x ethers (2 x 14)	T x D	H F	3f
Lead/cadmium metal waste	RF W041	Acids, mineral, oxidizing x fluorides, inorganic (2 x 15)	T x D	GT	3g
Lead/cadmium metal waste	RF W041	Acids, mineral, oxidizing x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (2 x 23)	T x D	GF H F	5
Lead/cadmium metal waste	RF W041	Acids, mineral, oxidizing x metals and metal compounds, toxic (2 x 24)	T x D	S	7

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Lead/cadmium metal waste	RF W041	Acids, mineral, oxidizing x miscellaneous combustible and flammable materials (2 x 101)	T x D	H F GT	8
Lead/cadmium metal waste	RF W041	Acids, mineral, oxidizing x water and mixtures containing water (2 x 106)	T x D	H	10a
Lead/cadmium metal waste	RF W041	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Inorganic non-metal	RF W052	Halogenated organics x metals, other elemental and alloys as sheets, rods, moldings, etc. (17 x 23)	T3 x D	H F	22
Inorganic non-metal	RF W052	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Inorganic non-metal	RF W056	Halogenated organics x metals, other elemental and alloys as sheets, rods, moldings, etc. (17 x 23)	T3 x D	H F	22
Inorganic non-metal	RF W056	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	D x D	S	33a
Inorganic non-metal	RF W057	Halogenated organics x metals, other elemental and alloys as sheets, rods, moldings, etc. (17 x 23)	T x D	H F	22
Salt Waste	RF W058	Caustics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (10 x 23)	M x D	GF H	15

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Salt Waste	RF W058	Caustics x metals and metal compounds, toxic (10 x 24)	M x T1	S	16
Salt Waste	RF W058	Caustics x water reactive substances (10 x 107)	M x M	Extremely reactive	17
Salt Waste	RF W058	Ethers x water reactive substances (14 x 107)	D x M	Extremely reactive	17b
Salt Waste	RF W058	Fluorides, inorganic x water reactive substances (15 x 107)	D x M	Extremely reactive	18
Salt Waste	RF W058	Metals, other elemental and alloys as sheets, rods, drops, moldings, etc. x water reactive substances (23 x 107)	D x M	Extremely reactive	31
Salt Waste	RF W058	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T1 x D	S	33a
Salt Waste	RF W058	Metals and metal compounds, toxic x water and mixtures containing water (24 x 107)	T1 x M	Extremely reactive	35
Salt Waste	RF W058	Combustible and flammable materials, miscellaneous x water and mixtures containing water (101 x 107)	D x M	Extremely reactive	39
Solidified inorganics	RF W059	Metals, alkali, and alkaline earth, elemental, and alloys x miscellaneous combustible and flammable materials (21 x 101)	D x D	H G F	28b

**TABLE B2-1
 SUMMARY OF POTENTIAL INCOMPATIBILITIES
 FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants [#]	Reaction Code *	Explanation Code Number
Solidified inorganics	RF W059	Metals, alkali, and alkaline earth, elemental, and alloys x water and mixtures containing water (21 x 106)	D x D	GF H	28d
Solidified inorganics	RF W059	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Graphite	RF W060	Metals & metal compounds, toxic x water & mixtures containing water. (24 x 106)	M x D	S	33a
Solidified inorganics	RF W063	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33 33a 34
Solidified inorganics	RF W065	Metals, alkali, and alkaline earth, elemental, and alloys x miscellaneous combustible and flammable materials (21 x 101)	D x D	H G F	28b
Solidified inorganics	RF W065	Metals, alkali, and alkaline earth, elemental, and alloys x water and mixtures containing water (21 x 106)	D x D	GF H	28d
Filter	RF W066	Halogenated organics x metals, other elemental and alloys as sheets, rods, moldings, etc. (17 x 23)	T1 x D	H F	21
Filter	RF W067	Halogenated organics x metals, other elemental and alloys as sheets, rods, moldings, etc. (17 x 23)	T1 x D	H F	23

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Solidified inorganics	RF W068	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	19
Solidified inorganics	RF W068	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a 34
Solidified organics	RF W069	Halogenated organics x metals other elemental & alloy, as sheets, rods, moldings, drops, etc. (17 x 23)	T x D	H F	23 26
Solidified inorganics	RF W076	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	19
Solidified inorganics	RF W076	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33 33a
Uncategorized metal	RL M001	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Uncategorized metal	RL M002	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Solidified inorganics	RL M005	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	M x D	S	33a 34

TABLE B2-1 SUMMARY OF POTENTIAL INCOMPATIBILITIES FOR WASTE FORMS AND CONTAINER MATERIAL					
Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Heterogeneous	RL M006	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	20
Soils	RL M007	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Uncategorized metal	RL M008	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Combustible	RL M010	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Combustible	RL M011	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Combustible	RL M012	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	20
Combustible	RL M013	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	20
Combustible	RL M014	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a

**TABLE B2-1
SUMMARY OF POTENTIAL INCOMPATIBILITIES
FOR WASTE FORMS AND CONTAINER MATERIAL**

Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Combustible	RL M015	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Combustible	RL M016	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	20
Combustible	RL M016	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Lead/cadmium metal waste	RL M019	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Lead/cadmium metal waste	RL M020	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Uncategorized metal	RL M021	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Combustible	RL M022	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Solidified inorganics	RL M032	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a

TABLE B2-1 SUMMARY OF POTENTIAL INCOMPATIBILITIES FOR WASTE FORMS AND CONTAINER MATERIAL					
Final Waste Form Group	Waste Stream Unique ID	Potential Chemical Compatibility Reaction	Concentration of Reactants[#]	Reaction Code *	Explanation Code Number
Heterogeneous	SR W026	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	20
Heterogeneous	SR W026	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Heterogeneous	SR W027	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	20
Heterogeneous	SR W027	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a
Solidified inorganics	SR W053	Halogenated organics x metals, other elemental, and alloys as sheets, rods, drops, moldings, etc. (17 x 23)	T x D	H F	19
Solidified inorganics	SR W053	Metals and metal compounds, toxic x water and mixtures containing water (24 x 106)	T x D	S	33a

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