

CUT ALONG THIS LINE

OSHA carcinogen candidate list

Asenaphthene, 8-nitro-
Acetamide
Acetanilide, 4'-phenyl-
Acetic acid, bromo-, ethyl
ester
p-Acetophenone, 3'-amino-
p-Acetophenone, 2'-nitro-
Aniline
Aniline, N,N-dimethyl-p-
nitro-
Aniline, N,N-dimethyl-p-
(m-tolylazo)-
Aniline hydrochloride
Aniline, N-methyl-N-nitroso-
Aniline, 4,4'-methylenedioxy-
(N,N-dimethyl)-
Aniline, 4,4'-oxydianiline-
Aniline, 4,4'-thiodi-
Aniline, 2,4,6-trichloro-
Aniline, 2,4,6-trimethyl-
o-Anilidine, 6-methyl-
o-Anilidine, 6-nitro-
Anthraquinone, 2-amino-
Asphalt
Azobenzene
1,3-Benzoxadiazine,
4-methoxy-, sulfate (1:1)
Benzidine dihydrochloride
Benzimidazole, 5-nitro-
Benzole acid, 3-amino-2,
5-dichloro-
Benzole acid, hydrazide
Baker's Kerosene
p-Benzquinone dioxime
4'-Bisoxazolone
3,3',4,4'-Bisphenyl-tetramine
tetrahydrochloride
Butyric acid, 2-amino-4-
(ethoxythio)-L-
Carbonic acid, bis
(2-hydroxyethyl)ditio-,
monopotassium
Carbazole, 3-amino-6-ethyl
C.I. Azodyne component N
C.I. Direct Black 38, disodium
salt
C.I. Direct Blue 6, tetrasodium
salt
C.I. Direct Brown 35
C.I. Disperse Black 5,
dihydrochloride

C.I. Disperse Orange 11
C.I. Solvent Orange 2
C.I. Solvent Yellow 1
C.I. Solvent Yellow 3
C.I. Solvent Yellow 34
Cyclohexane, 1,2,3,4,5,6-
hexachloro-
Diethylamine, 2,2'-dichloro-N-
methyl-, hydrochloride
m-Dioxan-4-ol, 2,6-dimethyl-,
acetate
Diphenylamine, 4-nitroso-
Diphenylamine, N-nitroso-
Ethane, 1,2-bis
(chloromethoxy)-
Ethane, 1,1-dichloro,2,2-bis
(p-chlorophenyl)-
Ethane, 1,1-dichloro,2,2-bis
(p-ethylphenyl)-
Ethanol, 2-hydroxy-
Ether, 2,4-dichlorophenyl
p-nitrophenyl
Ethylene, bromo-
Ethylene, 1,1-dichloro-2,2-bis
(p-chlorophenyl)-
Fluorene-9-one, 2,4,7-trinitro-
Fluorene, 2-nitro-
2-Furandehyde, 5-nitro-,
semicarbazone
Hydrazine, 1,2-dimethyl-,
dihydrochloride
Hydrazine, methyl-
Hydrazine methyl-, sulfate (1:1)
Hydrazine, monohydrate
Hydrazine, phenyl-,
monohydrochloride
Hydrazine, sulfate (1:1)
Hydroxylamine, N-nitroso-
N-phenyl-,
N-phenyl-, ammonium salt
Isocyanate-4-carbamide,
5-(3,3'-dimethyl-1-triazene)-
isophthalonitrile, tetrachloro-
1,3,4-Methano-1H-cyclobutene
(ed)pentamene,
2-Naphthylamine, N-N-bis
(2-chloromethyl)-
Peroxynic acid
Phenol, 4-amino-2-nitro-
m-Phenylendiamine,
4-chloro-
o-Phenylendiamine, 4-chloro-

o-Phenylendiamine
dihydrochloride
p-Phenylendiamine, 2-nitro-
Phosphoric acid, 2-chloro-
1-(2,4,6-trichlorophenyl)vinyl
dimethyl ester
Phosphoric acid, trimethyl
ester
Phosphoric triamide,
hexamethyl-
Picolinic acid, 4-amino-3,5,8-
trichloro-
Piperazine, 1,4-dinitroso-
Propene, 2,3-bis(p(2,3-epoxy-
propoxy)phenyl)-
Propene, 2-nitro-
Pyridine, 2,6-diamino-3-
(phenylazo)-,
Quinoline
Quinoline, 3-nitro-
Semicarbazide
Semicarbazide monohy-
drochloride
Semicarbazide, 1-phenyl-
4,4'-Stillbenediol, alpha, alpha'
-diethyl-, dipropionate, (E)
Strobanol
Succinic acid, mono (2,2-
dimethylhydrazide)
Sulfanilamide, N-(5-methoxy-3-
isocyanato)-
Sulfuric acid, diethyl ester
Tetramine, tetrakis(dichloro-
dithiocarbamate)-
Terphenyl, chlorinated
Thianthrene, 2-amino-8-nitro-
p-Toluamide, N-isopropyl-
alpha-(2-methyl-hydrazine)-
monohydrochloride
Toluene-2,4-diamine
o-Toluidine
o-Toluidine, 8-chloro-
p-Toluidine, alpha, alpha,
alpha-trifluoro-2,6-dinitro-
N,N-dipropyl-
Uranol, 2-thio-
Urea, 2-(p-chlorophenyl)-1,1-
dimethyl-
Urea, 1,1,3-trimethyl-2-thio-
Urea, 1,1,3-trimethyl-2-thio-
Urea, 1,1,3-trimethyl-2-thio-

regulatory process.

Based on the above list, OSHA will later propose two priority lists of ten substances each. One priority list will be for Category I carcinogens, where the weight of scientific evidence is especially strong, and one for Category II substances where the evidence against the particular substance is not as weighty.

The list above is OSHA's first publication of a list of potential industrial carcinogens to be released annually under OSHA's Cancer Policy.

The Cancer Policy was announced by OSHA last January and sets out procedures for regulating cancer-causing substances on a group-by-group basis rather than by single substances. Hopefully, this will speed up the

If you work with a substance listed above, find out what the conditions of exposure are. If you know of problems with the chemical or worker complaints, get in touch with the Health and Safety Dept. in Denver for more information.

Remember, decisions on regulation will depend on the amount of evidence showing there is a risk.



Brain Cancer in Petrochemical Workers

Brain cancers among workers in the petrochemical industry was the subject of a two-day conference October 27-29 sponsored by the New York Academy of Sciences.

At the conference, researchers reported on a number of studies of various plants in Texas and Louisiana which show almost a two-fold increase in brain cancer deaths among workers than would be expected.

Clues to Jobs and Brain Cancers

Aluminum Workers
Lead Smelter Workers
Mechanics
Oil Refinery Workers
Petrochemical Workers
Rubber Workers
Vinyl Chloride Workers

Following are some of the specific studies discussed at the conference:

OCAW Oil Workers

The National Cancer Institute, in cooperation with OCAW and the National Institute of Occupational Safety and Health (NIOSH) expanded its study of OCAW active deaths to include retirees.

NCI researcher Terry Thomas, reported that there were 27 deaths among active and retired members from malignant brain tumors at the three Texas refineries studied.

In each of the three refineries: Texaco, Port Arthur, Gulf, Port Arthur, and Mobil, Beaumont, TX., there was a two-fold excess of brain tumor deaths among active union members.

By looking carefully at 14 cases of brain cancer reported by NCI in its first study, there were three employment categories where at least four brain cancers were recorded.

These are: Motor Oil, which includes

some second-step refining operations such as lube oils, paraffin wax, and some solvents; Maintenance and Labor; and Receipt and Movement, which covers pumping stations, ship and truck loading and unloading and all processes necessary to move crude and products from one point to another.

However, all of the brain cancer cases need to be evaluated in depth before making any conclusions about job categories. OCAW is currently attempting to obtain the information needed from the three companies.

In another study of OCAW members working at the Amoco and Marathon plants in Texas City, NIOSH and NCI researchers found tentative evidence of a two-fold increased risk of brain and skin cancer compared to the normal population. The study group was too small to give conclusive statistical results.

Other plants in the area reported on at the conference included: Union Carbide, Texas City, where OSHA/NIOSH scientists found the incidence of brain cancers twice that of the surrounding community; Dow Chemical, Freeport, TX., with a possible two-fold excess incidence of tumors, and a study of Operating Engineers employed at Dow, Freeport; Cities Service, Lake Charles, La.; and two Union Carbide plants in Texas City, which also showed an excess brain cancer risk.

What Does It Mean?

The significance of all these reports of excess brain cancers is that the people

afflicted did work in the petrochemical industry, and there is a possibility that something in the working environment of these plants may contribute to the cancers.

Since the working environment is the strongest link in all the cancers, it makes sense to look carefully at each case of brain cancer and see where the victims worked, what the exposures were during the working lifetime and find out if there were common exposures.

This is what OCAW is attempting to do as followup to the initial findings of the NCI among OCAW members in oil refineries—find out more about each brain cancer case to find the common links.

Not everyone, however, thinks that brain cancers are a problem in the petrochemical industry. Industry is countering with its own studies showing there is no excess cancer risk in the industry.

A good example of how industry works is the Gulf Oil study reported on at the conference which showed no excess risk among workers at the same plant where the NCI did discover a two-fold risk. Why were there such different results from a study of the same plant? Numbers. The Gulf Oil study included a much larger group of workers, not just those in production, but also secretaries and engineers and other office people, people who were not likely to suffer exposure to toxic substances. When you have a larger group, the results are diluted and the excesses may be concealed.

EXPERIMENTAL BRAIN CARCINOGENS

3-Acetylaminofluorene
Acrylonitrile
1-Aryl-2,3-Dialkyltriazolones
Azobenzene
Azoxymethane
Azoxymethane
Butylnitrosamine
Cyanine
1,2-Diethylhydrazine
Diethylnitrosamine
Diethyl Sulfate
Dimethylbenzylamine
Dimethyl Sulfate
Etiomycin
Ethyl Methanesulphonate
Ethyl Nitrosobutylate
Ethyl Nitrosocyclohexane
1-Methyl-2-Benzyl-hydrazine
Methyl Methanesulphonate
Methylnitrosamine
Methylnitrosocyclohexane (dipropionate)
Pterocarbazine
Propylene Imine
Pyrolysis Alkaloids
Vinyl Chloride

*Transplacental carcinogenesis
from Victor Alexander, et al October 27, 1980