



# EPA's 33/50 Program Company Profile

## *Aldan Rubber Company*



U.S. Environmental Protection Agency  
Region 5, Library (PL-12J)  
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## THE 33/50 PROGRAM

This Company Profile is part of a series of reports being developed by EPA to highlight the accomplishments of companies participating in the 33/50 Program. The 33/50 Program is an EPA voluntary pollution reduction initiative that promotes reductions in direct environmental releases and offsite transfers of 17 high-priority toxic chemicals. The program derives its name from its overall goals -- an interim goal of a 33% reduction by 1992 and an ultimate goal of a 50% reduction by 1995. The program uses 1988 Toxics Release Inventory (TRI) reporting as a baseline. In February, 1991, EPA began contacting the parent companies of TRI facilities that reported using 33/50 Program chemicals since 1988 to request their participation in the 33/50 Program. As of April, 1994, a total of 1,216 companies had elected to participate in the Program, pledging to reduce emissions of the 17 target chemicals by more than 355 million pounds by 1995. Companies are encouraged to set their own reduction targets, which may vary from the Program's national 33% and 50% reduction goals. Company commitments and reduction pledges continue to be received by EPA on a daily basis.

The 1992 TRI data revealed that releases and transfers of 33/50 Program chemicals declined by 40% between 1988 and 1992, surpassing the Program's 1992 interim reduction goal by more than 100 million pounds. This accomplishment, together with evidence from analysis of facilities' projected releases and transfers of the 17 priority chemicals, reported to TRI under the Pollution Prevention Act, offers strong encouragement that the 33/50 Program's ultimate goal of a 50% reduction by 1995 will be achieved.

EPA is committed to recognizing companies for their participation in the 33/50 Program and for the emissions reductions they achieve. The Program issues periodic Progress Reports, in which participating companies are listed and highlighted. In addition, Company Profiles, such as this one, are being prepared to provide more detailed information about companies that have written to EPA describing significant emissions reduction initiatives. Information presented in these profiles is drawn primarily from the company's written 33/50 Program communications and the annual TRI reports submitted by their facilities (including Pollution Prevention Act data reported to TRI in Section 8 of Form R). All company communications to EPA regarding the 33/50 Program are available to the public upon request.

EPA does not endorse the performance, worker safety, or environmental acceptability of any of the technical options discussed in this Profile. Mention of any product or procedure in this document is for informational purposes only, and does not constitute a recommendation of any such product or procedure, either express or implied, by EPA.

### 17 PRIORITY CHEMICALS TARGETED BY THE 33/50 PROGRAM

BENZENE  
CADMIUM & COMPOUNDS  
CARBON TETRACHLORIDE  
CHLOROFORM  
CHROMIUM & COMPOUNDS  
CYANIDES  
DICHLOROMETHANE\*  
LEAD & COMPOUNDS  
MERCURY & COMPOUNDS  
METHYL ETHYL KETONE  
METHYL ISOBUTYL KETONE  
NICKEL & COMPOUNDS  
TETRACHLOROETHYLENE  
TOLUENE  
1,1,1-TRICHLOROETHANE  
TRICHLOROETHYLENE  
XYLENES

\* Also referred to as methylene chloride

For information on the 33/50 Program, contact the TSCA Hotline at (202) 554-1404 or contact 33/50 Program staff directly by phone at (202) 260-6907 or by mail at Mail Code 7408, Office of Pollution Prevention and Toxics, U.S. EPA, 401 M Street, SW, Washington, D.C. 20460.

# Aldan Rubber Company

Aldan Rubber Company reduced its releases of transfers of 33/50 Program chemicals by 1,011,460 pounds from 1988 to 1992, a reduction of 73%. In addition, according to data from the company's 33/50 Program progress reports, Aldan further reduced emissions by 168,010 pounds in 1993. As a result Aldan has surpassed its program goal of an 80 percent reduction in releases and transfers of 33/50 Program chemicals.

## I. CORPORATE BACKGROUND

Aldan Rubber Company is a manufacturer of rubber-coated fabrics that are used in a wide variety of applications, including protective clothing for fire fighting, flexible duct connectors, convertible tops, and baby products. Aldan is located in Philadelphia, Pennsylvania.

Aldan uses two 33/50 Program chemicals in its manufacturing operations: methyl ethyl ketone and toluene. Toluene has traditionally accounted for approximately 95% of Aldan's total releases and transfers of 33/50 Program chemicals.

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*Aldan viewed participation in the 33/50 Program as a logical extension of the company's ongoing environmental protection efforts.*

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Toluene is used as a carrier solvent in the fabric coating process. Rubber is mixed with toluene to achieve a mixture that can be spread evenly onto the fabric being coated. After the rubber mixture is spread on the fabric, the toluene evaporates, leaving a uniform coating of rubber on the fabric. Aldan has also traditionally used toluene as a solvent in cleaning its manufacturing equipment. In this application, toluene is manually wiped onto dirty machine parts to remove excess rubber, dirt, and other contaminants.

Methyl ethyl ketone is also used as a carrier solvent in the fabric coating process. It is needed in the manufacture of a small percentage of Aldan's products because some types of rubbers do not dissolve well in toluene.

Aldan reported 1,388,500 pounds of releases and transfers of 33/50 Program chemicals in 1988,

### Releases and Transfers of TRI Chemicals by Aldan Rubber Company (1000 pounds)

	<u>1988</u>	<u>1992</u>
<i>33/50 Chemicals</i>		
Methyl Ethyl Ketone	74	18
Toluene	1,315	359
33/50 Subtotal	1,389	377
<i>Other TRI Chemicals</i>	<1	0
<i>Total*</i>	1,389	377

\* Columns may not sum to totals due to rounding.

all in the form of air emissions. These 33/50 Program chemicals accounted for 99.9 percent of releases and transfers of all TRI chemicals. Table I, at the end of this profile, presents Aldan's 1988-1992 data on releases and transfers of 33/50 Program and other TRI chemicals.

## II. CORPORATE ENVIRONMENTAL STRATEGY

Aldan company officials viewed participation in the 33/50 Program as a logical extension of the company's ongoing environmental protection efforts. As early as 1976, Aldan saw the need to reduce emissions of toxic chemicals. As a result, the company installed a solvent recovery system at its manufacturing plant. The solvent recovered was reused in the manufacturing process, and the system greatly reduced the amount of toluene emitted from the facility. Aldan believes that installing the recovery system made sense from an economic standpoint, noting that resources invested in the project were paid back through the recycling of greater amounts of solvent.

## III. 33/50 PROGRAM GOALS AND POLLUTION REDUCTION ACTIVITIES

Aldan set an ambitious goal of reducing total releases and transfers of 33/50 Program chemicals by 80% from 1988 levels by 1995. This translates into a reduction of 1,110,800 pounds. This reduction was to be accomplished on top of the reduc-

tions that Aldan had already achieved through their earlier solvent recovery activities. Aldan hoped to achieve much of this reduction through the on-site recycling and reuse of solvents.

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*Aldan pledged to reduce releases and transfers of 33/50 chemicals by 80% by 1995, from 1988 levels.*

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Aldan conducted a survey to identify areas in the manufacturing process where significant emissions were taking place. This allowed the company to focus reduction efforts on the largest emission sources. The survey followed the "solvent trail" through the entire manufacturing process, from unloading of solvent from tank trucks to post-manufacture disposal of rubber scrap. After completing the facility survey and evaluating the results, Aldan identified five major activities that would significantly reduce chemical emissions:

- **Totally enclose the rubber spreader.** In its 1976 project, Aldan installed a hood to capture solvent emissions over part of its spreader. The captured solvent was then routed to a recovery unit. Aldan recently enclosed the entire spreader so that all solvent emissions are captured and recycled, rather than just those under the partial hood.
- **Renovate the solvent recovery system.** In order to improve the efficiency of its solvent recovery system, Aldan renovated the system put in place in 1976. As part of the renovation, the recovery unit received a complete overhaul, including replacement of the carbon recovery media, cooling coils, and old seals and valves. Aldan reported the solvent recovery unit's efficiency at 98% - 99% after the renovation, an increase of approximately 20% from the previous efficiency level.
- **Use an alternative cleaner for machinery clean-up.** Aldan traditionally used toluene in a hand-wipe application to clean its equipment on a periodic basis. This cleaning removes excess rubber, dirt, and other contaminants from production machinery. To eliminate this use of toluene, Aldan now uses a d-limonene cleaner in a similar hand-wipe application, with reduced but satisfactory performance, and somewhat higher but still acceptable cost.
- **Institute an employee awareness program.** Aldan recognized that a significant quantity of solvent emissions could be eliminated simply by improving the handling of process materials. An employee awareness program, mandatory for all employees who handle solvents, was implemented to achieve this goal. During the program, Aldan explained to workers the environmental problems associated with the solvent emissions and made suggestions for reducing emissions. Company officials believe that the employee awareness program has been a great success.

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*Prior to the implementation of any reduction measures, Aldan conducted a facility survey to identify the largest sources of chemical emissions.*

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- **Improve management of rubber scrap.** Aldan developed a proprietary process by which it is able to reduce solvent emissions from rubber scrap. This process is one in which the scrap is processed to remove excess solvent prior to scrap disposal. Aldan has found that, not only does the process reduce emissions of solvent to the air, but it also renders the rubber scrap nonhazardous. The scrap can then be disposed of in a municipal landfill.

#### **IV. PROGRESS TOWARDS 33/50 REDUCTION GOALS**

As a result of the efforts described above, by 1992 Aldan Rubber had reduced releases and transfers of 33/50 Program chemicals by 73% from the 1988 baseline, almost reaching its goal of an 80% reduction. Reductions for toluene alone accounted for more than 1,000,000 pounds.

According to information provided by Aldan in its progress reports, significant additional reductions were achieved in 1993. Releases of toluene decreased by an additional 161,895 pounds and methyl ethyl ketone decreased by 5,849 pounds. This translates into reductions of 45% and 33% respectively from 1992 levels. As a result, Aldan has achieved an 85% reduction in releases and transfers of 33/50 Program chemicals from 1988 levels, surpassing its 1995 reduction goal of 80%.

## V. SUMMARY OF ALDAN'S EXPERIENCE

Aldan Rubber Company has been extremely successful in reducing its releases and transfers of 33/50 Program chemicals. In total, Aldan achieved a reduction of 73% through 1992 for toluene and methyl ethyl ketone, the company's two 33/50 Program chemicals. In addition, the company reports surpassing its 1995 program goal by achieving a total reduction of 85% by the end of 1993.

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*Aldan feels that the 33/50 Program has been a strong impetus for the company to reduce its VOC emissions.*

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Aldan has long been concerned with reducing solvent emissions, as evidenced by the installation of a solvent recovery system in 1976. However, the company feels that "the 33/50 Program has been a strong impetus for Aldan to reduce its VOC emissions." Aldan views pollution prevention as a team effort, and has found great benefit in involving its employees in the process. Through its innovative employee awareness program, Aldan has educated its workers about the environmental problems caused by solvent emissions, and the employees have responded with more careful handling of solvents throughout the manufacturing process.

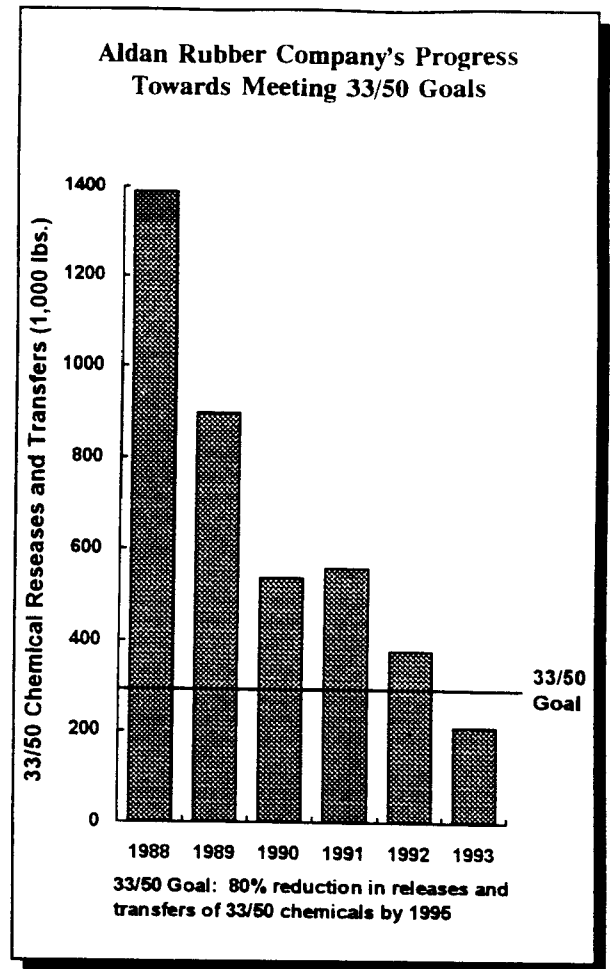


Table I  
Aldan Rubber Company  
Releases and Transfers of TRI Chemicals, 1988-1992  
(Data from TRI unless otherwise noted)

Chemical	Year	Total Releases and Transfers (pounds) (1)	Percent Change from 1988 Total Releases and Transfers
Methyl ethyl ketone	1988	74,000	
	1989	30,300	
	1990	42,200	
	1991	15,100	
	1992	17,834	-76%
	1993 (2)	11,719	-84%
Toluene	1988	1,314,500	
	1989	867,000	
	1990	495,400	
	1991	544,000	
	1992	359,206	-73%
	1993 (2)	197,311	-85%
<u>33/50 Program Chemicals</u>	1988	1,388,500	
	1989	897,300	
	1990	537,600	
	1991	559,100	
	1992	377,040	-73%
	1993 (2)	209,030	-85%
Non 33/50 Program Chemicals	1988	750	
	1989	750	
	1990	0	
	1991	255	
	1992	0	-100%
All TRI Chemicals	1988	1,389,250	
	1989	898,050	
	1990	537,600	
	1991	559,355	
	1992	377,040	-73%
<u>Percent Change, 1988-1992</u>			
33/50 Program Chemicals		-73%	
Non 33/50 Program Chemicals		-100%	
All TRI Chemicals		-73%	

Notes (1) All releases are air emissions.

(2) 1993 data from company progress report to the 33/50 Program.

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