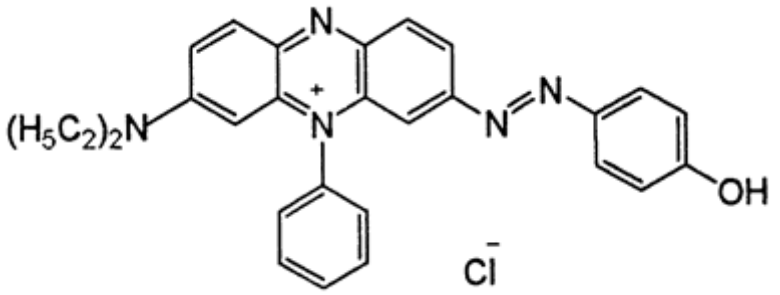
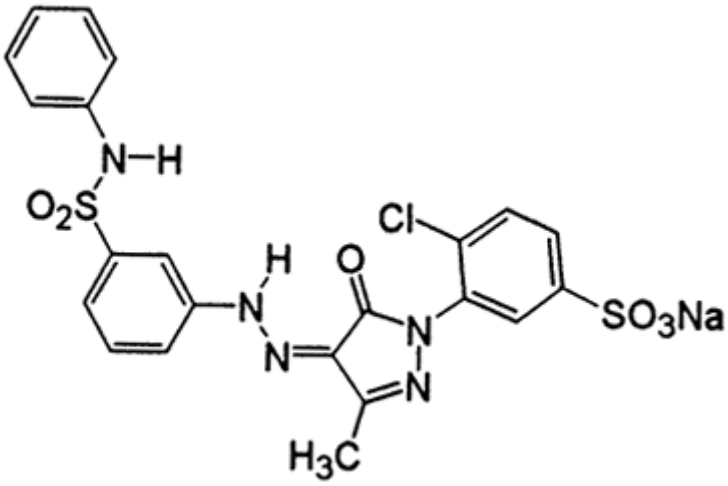
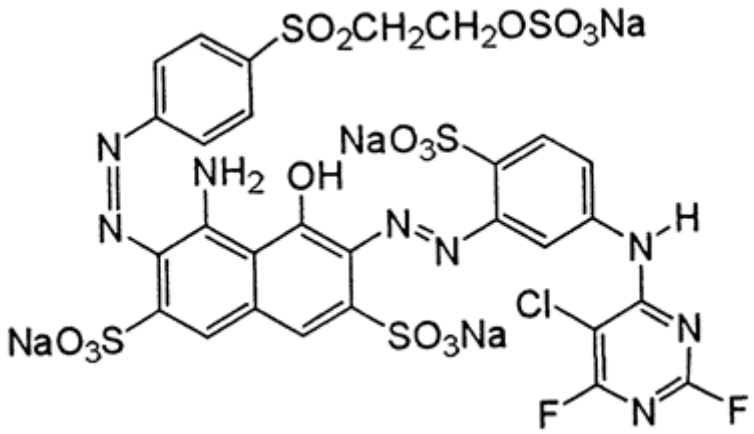
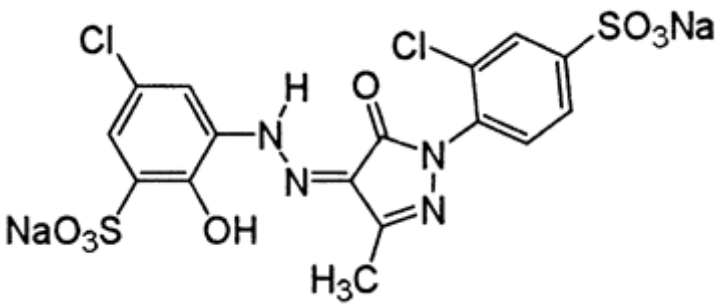
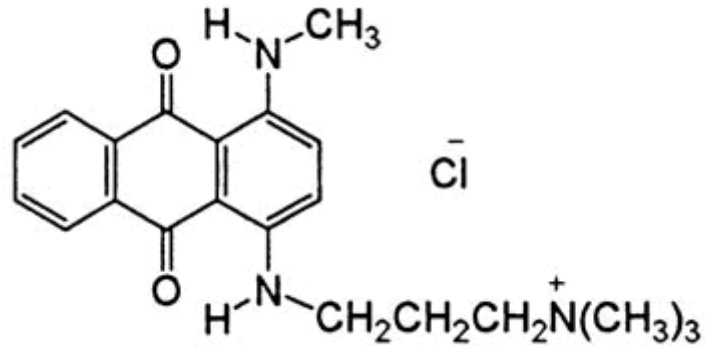
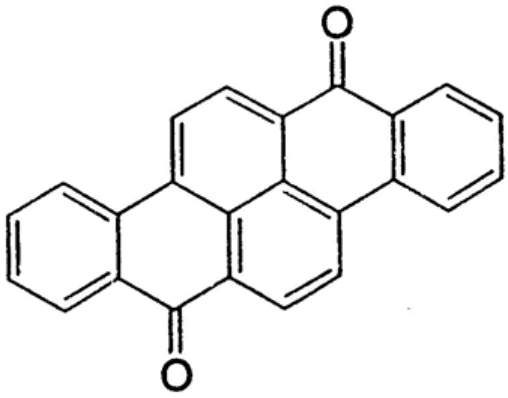
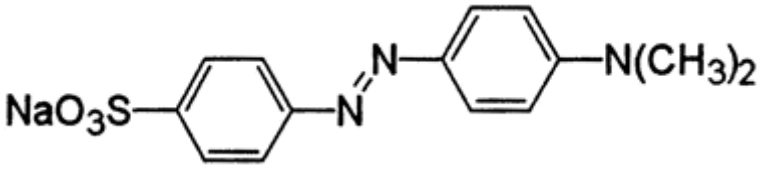
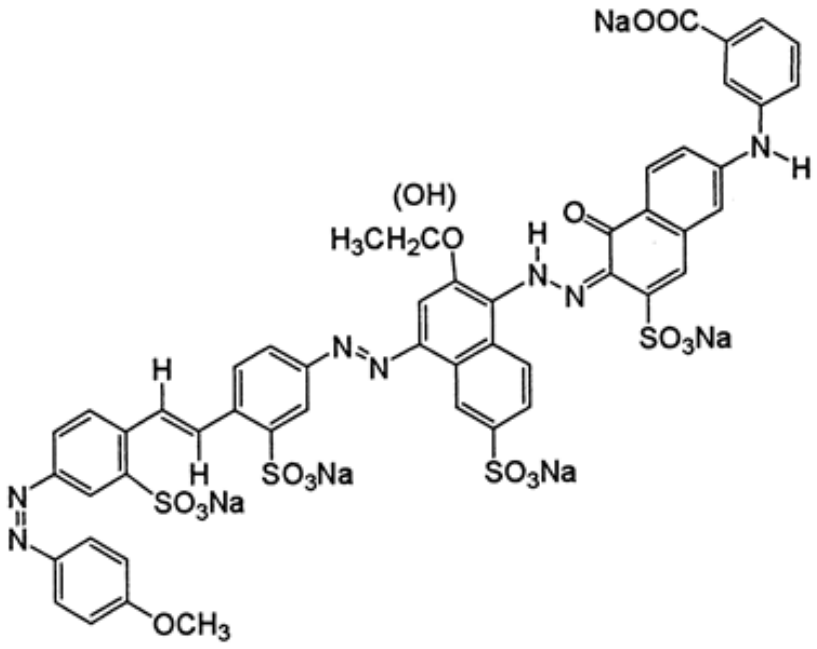
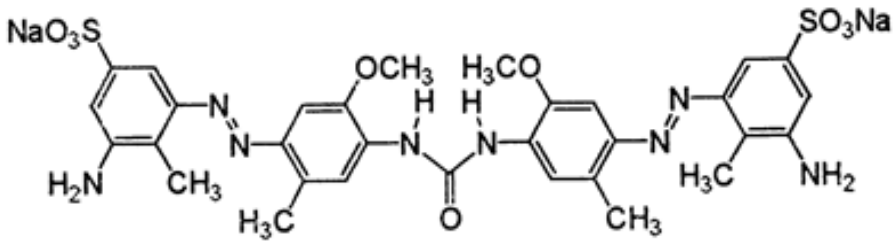
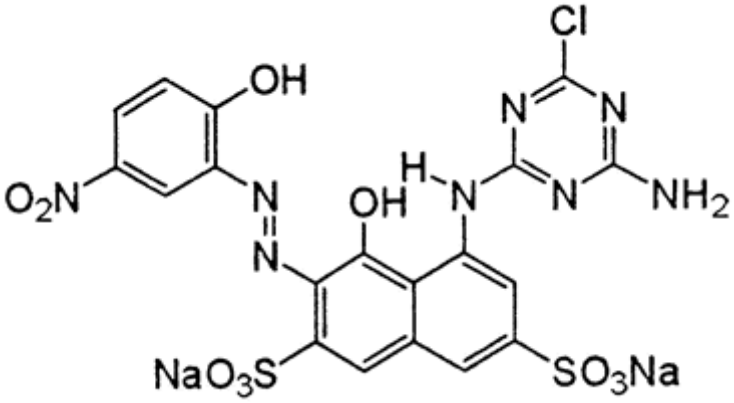
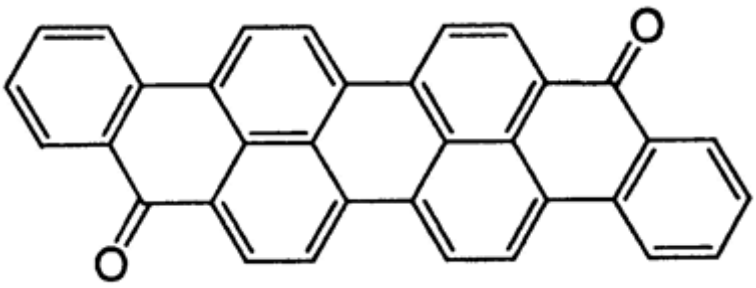
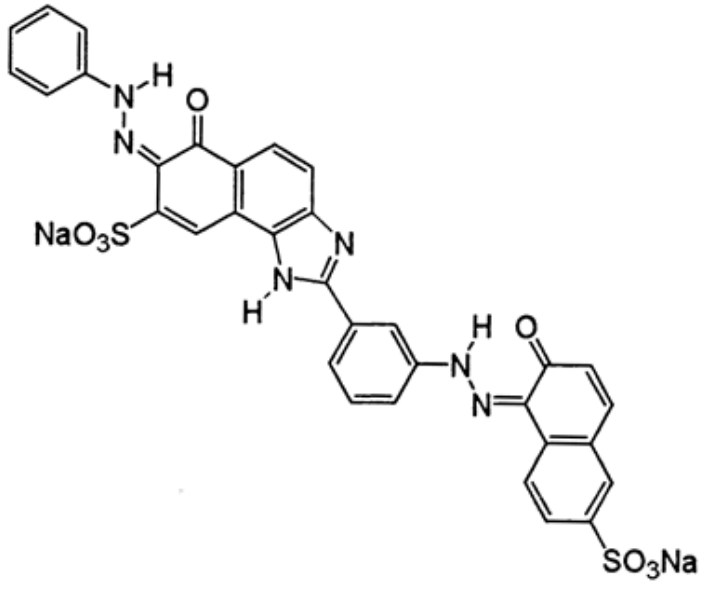
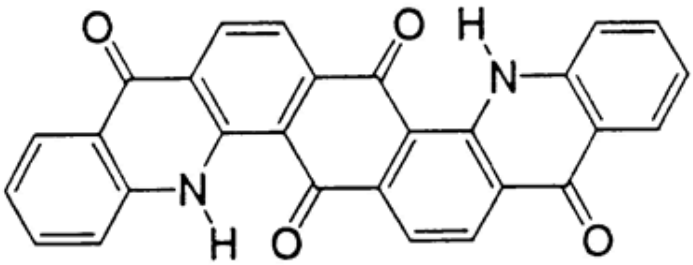
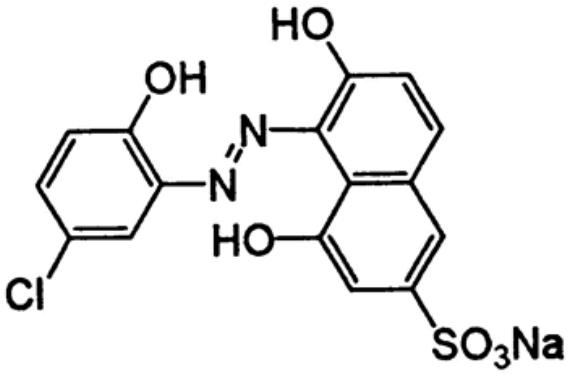
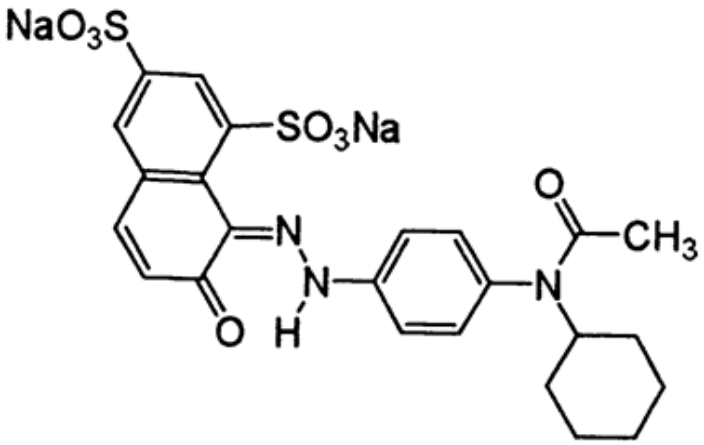
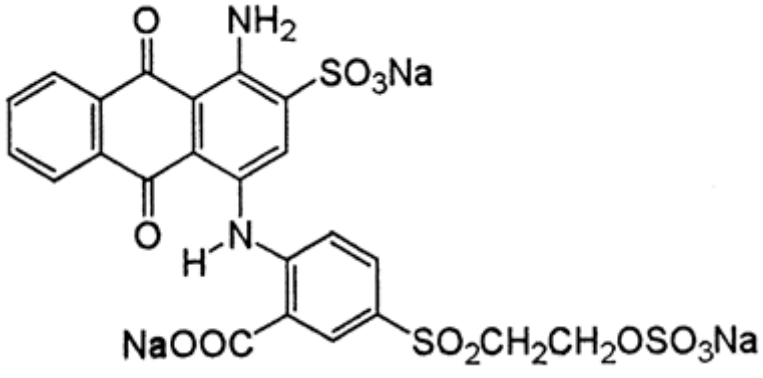
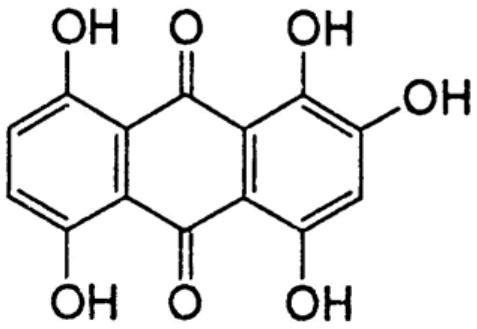
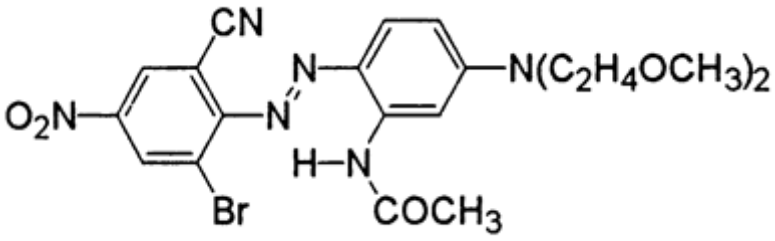
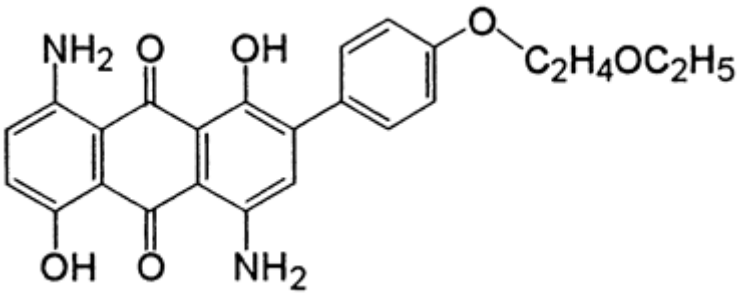
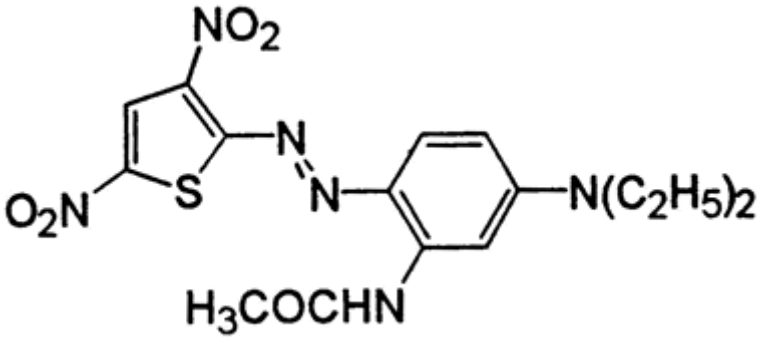
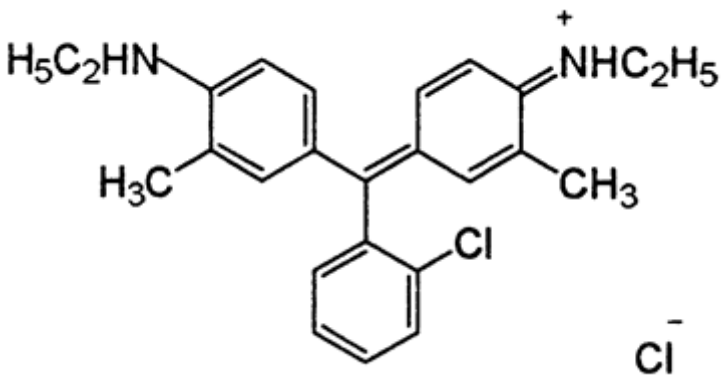
Dyestuff Recognition

	**Basic Black 2**
	**Acid Yellow 29**
	**Reactive Blue 225**
	**Mordant Red 41**

	**Basic Blue 22**
	**Vat Yellow 4**
	**Acid Orange 52**
	**Direct Green 36**

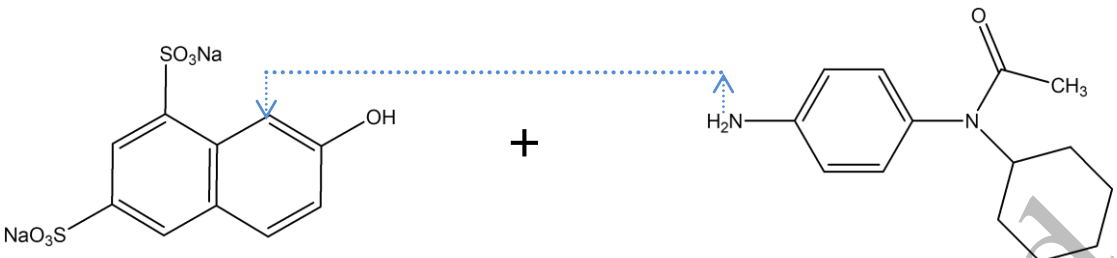
	**Direct Brown 126**
	**Reactive Black 8**
	**Vat Violet 10**
	**Direct Red 6**

	**Vat Violet 13**
	**Mordant Black 56**
	**Acid Orange 28**
	**Reactive Blue 27**

	**Mordant Blue 50**
	**Disperse Blue 257**
	**Disperse Blue 214**
	**Disperse Green 9**
	**Basic Blue 5**

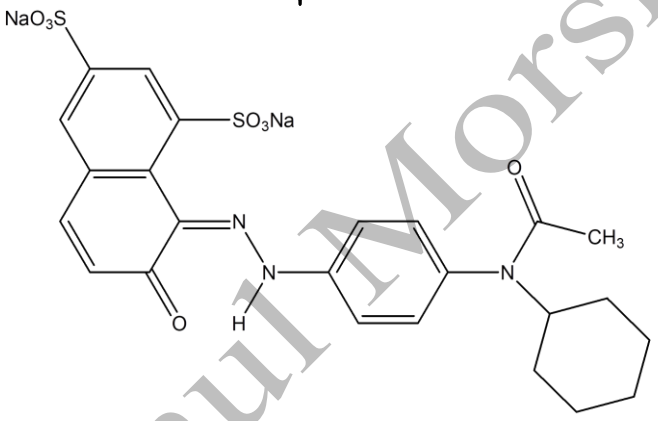
Synthesis Process of Azo Dye

Synthesis of Acid Orange 28



Sodium 7-hydroxynaphthalene-1,3-disulfonate
(Coupling Component)

N-(4-aminophenyl)-N-cyclohexylacetamide
(Amino Component)



Acid Orange 28

Reaction process:

"N-(4-aminophenyl)-N-cyclohexylacetamide" is a "di-azonium salt (Amino component)" and "Sodium 7-hydroxynaphthalene-1,3-disulfonate" is the coupling component. During the reaction the amino component makes bond with the **"C (10)*"** atom of coupling component to produce above Acid Orange 28 Dye.

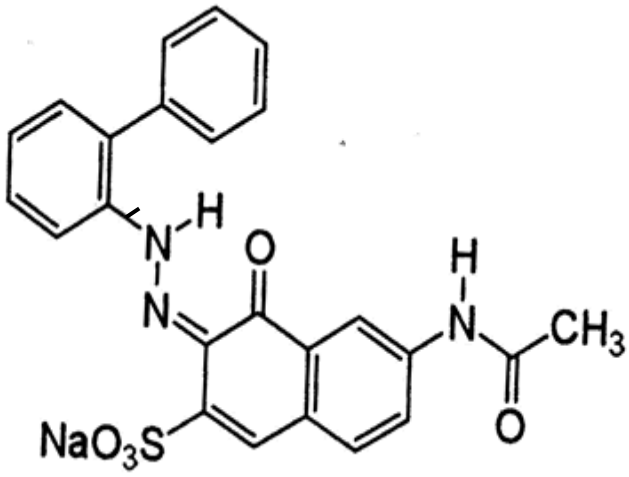
The amino component makes bond with "C (10)*" atom because that atom is more polaric than other 3 carbon atoms. The range of their charges are given below---

Charges:

C(3) = 0.08635
C(5) = - 0.07400
C(7) = - 0.11436
C(8) = -0.21106
C(10) = - 0.31250*

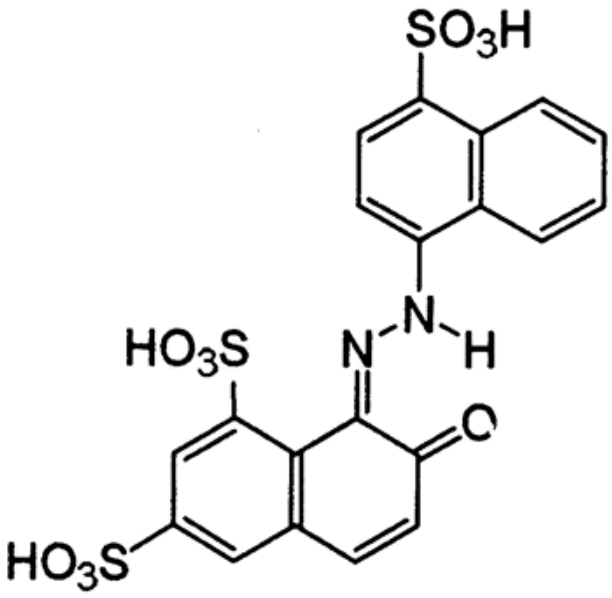
Effect of Functional Groups on Dyestuffs

Acid Red 15:



Name: C.I.Acid Red 15,C.I.17930
Mol. Formula: $C_{24}H_{18}N_3NaO_5S$
Mol. Wt.: 483.47
CLogP: -3.26772
Wash fastness: 3-4 (AATCC)*

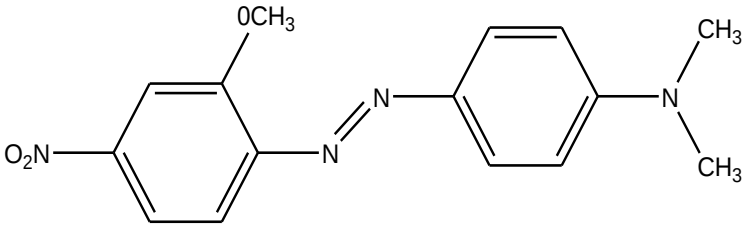
Acid Red 18:



Name: C.I.Acid Red 18,C.I.16255
Mol. Formula: $C_{20}H_{11}N_2Na_3O_{10}S_3$
Mol. Wt.: 604.48
CLogP: -3.307
Wash fastness: 2 (AATCC)*

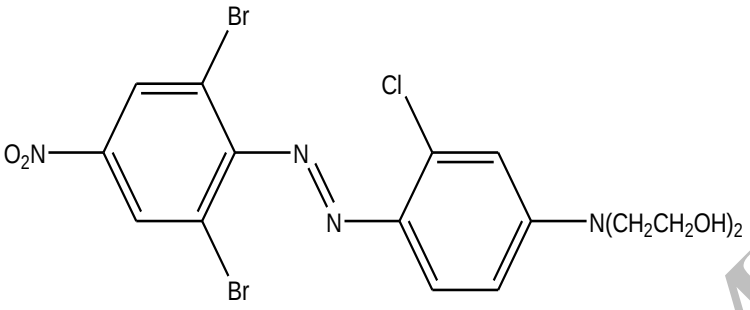
From the above two dye structures we have found that Acid Red 15 has better wash fastness than Acid Red 18. Acid Red 15 has only one sulphonate group in its structure but Acid Red 18 has three Sulphonate groups. We know that sulphonate group is highly solubilizing group i.e. highly hydrophilic group. That's why Acid Red 15 is more hydrophobic than Acid Red 18 and for acid dye we also know that, **Hydrophobic Acid dyes have good wash fastness property than the hydrophilic Acid dyes. For that hydrophobic property Acid Dye 15 has good wash fastness than Acid Dye 18.**

Disperse Red 41:



Name: C.I.Disperse Red 41,C.I.11040
Mol. Formula: $C_{15}H_{16}N_4O_3$
Mol. Wt.: 300.31
Light fastness: 4-5 (ISO)*

Disperse Red 118:



Name: C.I.Disperse Red 118,C.I. 11152:2
Mol. Formula: $C_{16}H_{16}Br_2ClN_4O_4$
Mol. Wt.: 552.58
Light fastness: 6-7 (ISO)*

From the above two disperse dye structures we have found that Disperse Red 118 has better light fastness than Disperse Red 41. **Disperse Red 118 has electron withdrawing groups in ortho positions but Disperse Red 41 has electron donating groups in ortho position**. We know that **if disperse dye consists electron withdrawing groups in ortho position than light fastness improves; but if it consists electron donating groups in ortho position than light fastness decreases.** For why, Disperse Red 118 has good light fastness than Disperse Red 41.

---x---